

Hospital Disaster & Emergency Management

EMERGENCY DEPARTMENT CONCEPTS AND OPERATIONS



Emergency Medicine, Trauma
Surgery and Disaster Medicine aim
to:

*Prevent unnecessary
mortality and morbidity
from disasters and
emergencies*



*What are the roles of
hospitals in
emergencies?*

Hospital roles in an Emergency

- Provision of Disaster Medical Teams
- Acting as the receiving hospital for casualties from a disaster
- Triage to distribute patients across hospitals
- Receiving hospital for patients transferred from other disaster affected health-care facilities

Fill in the Blank

Hospital Emergency Plans must consider many casualties may arrive quickly.

But if a hospital is unable to handle day to day emergencies in the ED, it will not be able to cope with demands of multiple casualty incidents

The Key is Preparedness

Hospital Emergency Planning

Developing and implementing plans, procedures and training to ensure that the hospital's capacity to respond to disaster is **maximized**.



The Emergency Department

The current trend in Emergency Medicine is to establish the ED as a **separate and distinct department** within the hospital, complete with its own management and staff.

Human Resources in the Emergency Medical Services System in Disaster

- Medical First Responder
- Emergency Medical Technician - Basic
- Emergency Medical Technician - Advanced
- EMS/Prehospital Medical Director
- Casualty Ward Minor Staff
- Casualty Ward Nurse
- Emergency Medicine Physician
- General Surgeon/Trauma Surgeon
- Anesthesiologists
- Specialized Physicians, e.g. Ortho, Ophtho, etc.
- Emergency Department Coordinators

Principles of Managing the Emergency Department

- Policies and Procedures
- Equipment and Supplies
- Management Unique to the ED
- Staffing requirements unique to the ED
- Overcrowding

Policies and Procedures

- Emergency Departments must have clearly written policies and procedures.
- This has to be constantly reviewed and revised.
- It must be reviewed after each major emergency.

Emergency or Disaster Plan

Contains elements such as:

- Who needs to be prioritized for definitive care?
- Triage criteria
- Who is in charge?
- What are the functions of each and every member of the emergency team?
- Incident command system (ICS)

Emergency or Disaster Plan

- The goals
 - To control the large number of patients and problems with the best possible care
 - Enhance the capacities for admission and treatment (surge capacity)
 - Treat patients based on the rules of good medical practice
 - Ensure an ongoing proper treatment for all patients who are already in the hospital
 - A smooth handling of all additional tasks caused by large number of patients in an ED

Staffing Requirements of the ED

- ED Nurses and Head Nurse
- Minor Staff
- Emergency Medicine Physicians (EMP)
- Registration Staff
- Social Workers
- Trauma Team
 - Surgeons
 - Anesthesiologists
 - Trauma Nurses

Operating Theater

- Access to functioning operating theaters
- Early definitive care
- Minimizes unwanted morbidity or preventable mortality.
- Lack of these in the hospital -- system of transport and referral is a must.
- Theater equipment



Airway Devices

- oxygen tanks
- non-rebreather masks
- nasal cannula
- oropharyngeal airway devices of different sizes
- nasopharyngeal airway devices
- Intubation equipment like laryngoscopes
- endotracheal tubes
- LMA's (laryngeal mask airway)
- tracheostomy instruments
- tracheostomy tubes and suction machines
- cervical immobilization devices

Management of Hypovolemic Shock

- Devices for hemorrhage control
- Surgical gauze packs
- Elastic and rolled bandages
- IV access, IV cannulas of different sizes, central lines, cutdown sets, intra-osseous infusion needles.
- Crystalloids & colloids for fluid replacement.
- Access to blood bank facilities or blood retrieval.
- Traction splints for long bone fractures.

Other equipments

- Defibrillation
- Monitors
- Diagnostics
- Emergency Drugs



Contingency

Planning is the key to the proper response to a multiple casualty incident or disaster.

Observation and Holding Area

Temporary patient care areas

- Lobby
- Conference rooms
- Corridors
- Parking areas
- Gardens
- Cafeterias
- Prayer areas

Referral and Transfer

- If human resources, logistics or holding areas are not available, transfer patients to other hospitals
- Pre-arranged mutual aid agreement between hospitals

TABLE 1 CRITERIA FOR CONSIDERATION OF TRANSFER	
<small>(These guidelines are not intended to be hospital-specific)</small>	
CENTRAL NERVOUS SYSTEM	
Head injury	—Penetrating injury or open fracture (with or without cerebrospinal fluid leak) —Depressed skull fracture —Glasgow Coma Scale (GCS) <14 or GCS deterioration —Lateralizing signs
Spinal cord injury	—Spinal cord injury or major vertebral injury
CHEST	
Major chest wall injury or pulmonary contusion	
Wide mediastinum or other signs suggesting great vessel injury	
Cardiac injury	
Patients who may require prolonged ventilation	
PELVIS/ABDOMEN	
Unstable pelvic ring disruption	
Pelvic fracture with shock or other evidence of continuing hemorrhage	
Open pelvic injury	
Solid organ injury	
MAJOR EXTREMITY INJURIES	
Fracture/dislocation with loss of distal pulses	
Open long-bone fractures	
Extremity ischemia	
MULTIPLE-SYSTEM INJURY	
Head injury combined with face, chest, abdominal, or pelvic injury	
Burns with associated injuries	
Multiple long-bone fractures	
Injury to more than two body regions	
COMORBID FACTORS	
Age <15 years	
Children ≥5 years of age (see Chapter 10)	
Cardiac or respiratory disease	
Insulin-dependent diabetes, morbid obesity	
Pregnancy	
Immunosuppression	
SECONDARY DETERIORATION (LATE SEQUELAE)	
Mechanical ventilation required	
Sepsis	
Single or multiple organ system failure (deterioration in central nervous, cardiac, pulmonary, hepatic, renal, or coagulation systems)	
Major tissue necrosis	
<small>Note: It may be appropriate for the injured patient to undergo operative control of ongoing hemorrhage prior to transfer if a qualified surgeon and operating room resources are promptly available at the referring hospital.</small>	

Conclusion

- The Emergency Department is the frontline of the hospital response to a disaster.
- The ED plays a critical role in hospital emergency management system
- Preparedness is the key to maximize capacity in MCI