HOSPITAL DISASTER MANAGEMENT

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Uttaranchal Flood
Fig. 1. Aloha Airlines Flight 243 (Source: Hawaii State Archives)
Disaster

- Two types:
  - Natural disasters
    - Floods, droughts, cyclones, earthquake, and land slides
    - New disaster like Tsunami in 2004
  - Man made disasters
    - Road, rail, air accidents, fire, drowning and stampedes in mass gathering, industrial accidents, explosions and terrorist attacks
- To cope:
  - Appropriate medical facilities and their preparedness are essential
Disaster

- What are disasters?
  - “A serious disruption of the functioning of the society, causing wide spread human, material, or environmental losses which exceed the ability of the society to cope using own resources”
  - A disaster occurs when a hazard (natural or man made) strikes a vulnerable society
  - Vulnerability is:
    - the extent to which a community, structure, service, or geographical area is likely to be damaged or disrupted by the impact of a particular hazard
Disaster

- What is risk?
  - Risk is the measure of expected losses due to a hazard of a particular magnitude striking in a given area
  - Factors contributing to risks are:
    - Hazards
    - Location of hazards
    - Exposure
    - Vulnerability

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Disaster Management Cycle

- The disaster management cycle consists of:
  - Pre-disaster phase:
    - Mitigation, and
    - Preparedness
  - Post-disaster phase:
    - Response, and
    - Recovery

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Risk Reduction

- What can we do to reduce the risk?
- Two ways:
  - Mitigation
    - All measures taken to reduce
      - The effect of hazards itself, and
      - The vulnerable conditions in order to reduce losses in a disaster.
  - Preparedness
    - All actions taken before a disaster strikes
      - Aimed at minimizing loss of life, disruption of services and damage
      - Includes development of emergency response and resource plans
Mass Casualty Incident (MCI)

- Role of hospitals in disaster / MCI
  - Play a vital role in providing health care infrastructure
  - Hospitals have a primary responsibility of saving lives
    - They provide 24 X 7 emergency care
    - Public perceive it as vital resource for health care delivery
      - This has both physical and psychological aspects
  - Hospitals are central to provide emergency care
    - During disaster the society falls back upon the hospitals

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What Constitutes a Disaster

- What constitutes a disaster / MCI for a hospital
  - Hospital is overwhelmed
  - Cannot provide medical relief to a vast number of persons
  - Additional resources are required
  - The hospital has to determine what capacity can be augmented within its available resources
  - Beyond this, the hospital has to initiate the actions as per its disaster management plan
  - A Hospital disaster plan is unique to each hospital as it depends upon its bed strength, staff and other resources

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Disaster Plan

- How do hospitals begin to formulate an adequate disaster plan?
  - The responsibility should be given to a committee
  - The committee should include representatives from every department in the hospital

- Should smaller hospitals also have emergency plans?
  - Disaster can occur anywhere and not only in the vicinity of a large hospital
  - Therefore, all hospitals must have an emergency plan
Process of Disaster Preparedness Planning

- The outcome of the planning process is the production of a written plan
- The process of planning is important
  - People must work together
  - Identify hazards and their potential
  - Assess the vulnerabilities of the hospital
  - Understand the roles and responsibilities of each department and other agencies
  - Develop emergency systems and procedures
The planning Process

☐ **Step 1**
  - Leadership resolves to plan
  - Determines the authority to develop the plan
The planning Process

· **Step 2**
  • Establish planning committee
    • The committee should consist of:
      • Representatives of
        • Each hospital department
        • Community health system and mental health
      • Preferably, if possible, incorporate:
        • External emergency services
        • Police services
        • Military health services
        • Fire services
The planning Process

- **Step 3**
  - Conduct hazard risk assessment
    - Analysis of hazards (internal and external) to the hospital
    - A detailed hospital vulnerability analysis to determine the scope and priorities for planning
    - Hazard risk assessments continue throughout the planning process and are:
      - Constantly monitored and evaluated for any changes

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The planning Process

- **Step 4**
  - Set planning objectives
    - Objectives are based on the results of the risk analysis
    - Identify the disaster management strategies agreed upon by the committee
The planning Process

- **Step 5**
  - **Determine responsibilities**
    - Sorting of the responsibilities of hospital departments and personnel
    - Other health agencies in the community (State, Private and NGOs)
    - Tasks must always be allocated to capable people and organisations
The planning Process

- Step 6
  - Analyse resources
    - Identify what a facility will require, rather than identifying what it has
    - If a gap exist, the planning committee must identify sources of personnel and equipment
    - Mutual aid agreements with other health care facilities must be implemented

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The planning Process

- Step 7
  - Develop systems and procedures
    - Identify its strategies for
      - Prevention and mitigation,
      - Preparedness, response and recovery
      - Communication systems, public information, education, relations, and resource management system
The planning Process

- Step 8
  - Write the plan
    - The document must be distributed to all who use it
      - The users include both internal and external role players
    - The document must be simple and straightforward
      - Or no one shall read it
The planning Process

- **Steps 9 & 10**
  - Train personnel
  - Test plans, personnel and procedures
    - This is the critical foundation of emergency preparedness
  - Response activities will require personnel to function outside of their normal day-to-day roles and responsibilities
    - They have to assume tasks with which they are less familiar, and
    - These must be carried out within a highly stressful environment
The planning Process

(Steps 9 & 10 contd…)

- Personnel must be trained and regularly tested in their emergency management tasks
- Regular practice of roles and responsibilities is necessary
  - “A plan which has not been tested and reviewed may be worse than no plan at all
  - It can build a false sense of security in the health care facility about its level of opportunities”
The planning Process

- Steps 11 & 12
  - Review and amend the plan
  - Plans – must be tested, reviewed and updated on a regular basis (at least annually)
  - After each practice, weaknesses observed must be rectified

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The planning Process

(Steps 11 & 12)

- Planning is a Dynamic process; it never stops
- The written plan is simply one outcome of the planning process
  - It is not an end point, only a piece of the planning and replanning process
- The written plan is a living document which must be constantly tested, reviewed and updated.

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Central Command Structure for the Hospital

The Central Command Structure also known as Incident Command System (ICS)

- When the disaster strikes, there is utter chaos.
- Everyone not affected by the incident is eager to help
- In order to streamline the operation, a Central Command Structure needs to be created
Central Command Structure for the Hospital

- The command system must have an organisation chart
  - Each position on the chart should be function based and not position or individual based
  - An individual can be assigned more than one position on the chart
    - A person might have to perform multiple tasks until additional support comes
Job Cards

☐ Action sheets or job cards are basis of a successful disaster / emergency management plan

☐ These sheets should be made for each and every position in the organisational chart of the command system

☐ The job cards should be detailed
  - Should be stored safely in disaster manual
  - Should be colour coded
  - Should be laminated
When disaster strikes

Do as little as possible for as many as possible
Areas to be Delineated

- Control Room
  - The office of the CMS should act as the control room and should have good communication
  - Should have all necessary information

- Patient Treatment Areas
  - The senior surgeon should be the operations chief and should be involved deciding about the organisation of patient treatment areas
Areas to be Delineated

- Treatment area should have the following components
  - Patient reception area
    - Here patients are received and triaged
    - Registration is done
  - Resuscitation area
    - For Priority 1 patients
  - Treatment area
    - For priority 2 patients
    - Observation is done and prepared for surgery if required
Areas to be Delineated

- **Minor treatment area**
  - For walking wounded patients

- **Operation theatre**
  - This is for those patients who need immediate life saving operation

- **Wards**
  - Minor cases need to be discharged and elective surgery case postponed to create space

- **Transfer**
  - An area to be earmarked for patients to be transferred to higher centres after stabilisation

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The Disaster Phase

- Activation of the plan
  - After receipt of the information regarding an emergency incident, the following should be verified quickly:
    - Nature and magnitude of the incident
    - Possible number of victims
    - Location
    - Time of incident
    - Expected time of arrival of the victims at the hospital
  - Whoever receives these information, should pass on to the MS
  - The MS activates the plan
MOBILISATION OF PLAN

- All disaster will not need full mobilisation
- Plan categorised into 3 grades
  - Red alert
  - Yellow alert
  - Green alert
- Readiness for 100 percent increase in patient load
The Disaster Phase

- **Deactivation of the Plan**
  - Once the incident commander is convinced that there are no more casualties, the plan can be called off
  - Normal functioning of the hospital shall then resume

- **Post Disaster Briefing**
  - After the disaster is over, the MS should hold a meeting with all staff involved
    - The staff narrate their experiences
    - Difficulties encountered are discussed and their possible solution determined
    - Action is then followed up till completion

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Thank You