MASS CASUALTY INCIDENT MANAGEMENT

Earthquake, Haiti (2010)
What is a Mass Casualty Incident (MCI)?

- Event(s) causing numbers of casualties large enough to significantly disrupt the healthcare services of the affected region.

Sichuan Earthquake (2008)
Key Principle:

- **DEMAND** for resources always *EXCEEDS* the **SUPPLY** of resources in a Mass Casualty Incident.
Epidemiology of Disasters

- Natural Disasters:
  - Pandemics
  - Hurricanes
  - Typhoons
  - Earthquakes
  - Floods

*Hurricane Ike (2008)*
Epidemiology of Disasters

- Manmade Disasters
  - Technological disasters
  - Weapons of Mass Destruction
    - Non-intentional
    - Intentional (terrorism)
Weapons of Mass Destruction

- Nuclear, biological, and chemical
- Significant challenge of all for disaster responders
Weapons of Mass Destruction

- Produce **CASUALTIES** in numbers large enough to overwhelm the healthcare system
- Produce large numbers of “EXPECTANT” victims
Weapons of Mass Destruction

- Produce CONTAMINATED environments
- Responders must be able to perform triage, initial stabilization, and, possibly, definitive care outside traditional healthcare facilities.
Weapons of Mass Destruction

- Produce significant numbers of PSYCHOGENIC casualties
Terrorism

- One of the most challenging Mass Casualty Incidents for medical responders
Terrorists do not have to kill people to achieve their goals.

Terrorists just have to create a climate of fear and panic to overwhelm the healthcare system (examples: sarin/anthrax attacks).
Lessons from previous disasters are important in distinguishing “myths” (misconceptions) from “facts” (evidence-based data).

Earthquake, Haiti (2010)
Disaster Myth #1

- Disaster responders can utilize traditional organizational and command structures when participating in disaster response.
Lessons Learned:

- The **Incident Command System (ICS)** is the accepted standard for all disaster response.

- **Functional** requirements, not titles, determine the organizational structure of the Incident Command System.
Disaster Myth #2

- All disasters are different, especially terrorism.

London Bombing (2005)
Lesson Learned:

- Similar to the ABC’s of trauma care, disaster response includes basic elements that are similar in all disasters.
  - Medical concerns
  - Public Health concerns
ABCs of the **Public Health** Response to Disasters

- Water
- Food
- Shelter
- Sanitation
- Security/Safety
- Transportation
- Communication
- Endemic and epidemic diseases
ABCs of the Medical Response to Disasters

- Search and rescue
- Triage and initial stabilization
- Definitive care
- Evacuation
Rapid assessment by experienced disaster responders will determine which of these elements are needed in the **acute phase** of the disaster response.
Difference in Disasters

- Degree of disruption of public health and medical services
- Amount of outside emergency assistance needed to respond to the needs of disaster victims
Three factors will determine whether a MCI overwhelms the medical and/or public health infrastructure of the affected region.
Determinants of Need for Outside Assistance

- **Number** of victims
- **Severity** of injuries
- **Diversity** of injuries
Disaster Myth #3

- Effective “surge capacity” is based on well-intentioned and readily available volunteers.
Lessons Learned:

- Training must include basics of disaster response (triage, decontamination, etc.).
- Responders must be able to care for routine emergencies/diseases as well as disaster-related injuries.
Disaster Myth #4

- Disaster medical care is the same as conventional medical care.
Lesson Learned:

- Disaster medical care requires a fundamental change in the approach to the care of victims (altered standards of care in disasters).
Objective of *Conventional* Medical Care:

- Greatest good for the **INDIVIDUAL PATIENT**
Objective of *Disaster* Medical Care:

- Greatest good for the GREATEST NUMBER OF VICTIMS

* Tsunami, Indonesia (2004)
Mass Casualty Incident Response

- Consistent approach to disasters based on an understanding of their common features and the response expertise they require in all four phases of the disaster.
Phases of Disaster Management

- Phase 1: Mitigation
  - Hazard vulnerability

- Phase 2: Preparedness
  - Planning/training

- Phase 3: Response
  - Emergency phase

- Phase 4: Recovery
  - Restoration
All medical personnel need to incorporate the key principles of the MCI response in their training given the complexity of today’s disasters.