Incorporation of Safe and Resilient Hospitals for Community Integrated Disaster Response

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Assumptions

Assumptions Underlying Developing Resiliency

- Comprehensive regional preparedness is key to ensuring that hospitals, emergency response organizations and communities develop organizational and community resiliency.
- An integrated approach is required to determine how best to protect operating systems, personnel, supply chain and infrastructures
- The creation of regional public-private partnerships is necessary and needs to be flexible and constantly updated.
- Determining critical infrastructure needs to include the identification of hospitals as one of these assets.
- Development and maintenance of memorandums of understanding (MOUs) and other types of cooperative arrangements are essential

Assumptions Underlying Developing Resiliency

- Sorting out and defining roles and responsibilities is fundamental to ensuring organizational resiliency.
- Assuring supply chains and the delivery of critical products, materials, and components is essential
- Codes, standards, and guidelines should be applied within and across organizations and jurisdictions
- Channels of communication must be established to include representatives and spokespersons from all key stakeholders
- Health care and public health organizations play a unique and highly important role in disaster response
- Plans must be realistic in taking into account organizational interdependencies and individuals with special needs.
- The media play a unique and integral role in disaster management

Background

Disasters Have No Prejudice

- Every year, across the globe, many people lose their lives and tremendous damage is incurred by natural and technological disasters such as hurricanes, floods, earthquakes, droughts, and radiological and chemical calamities.

- The extremely high urban population density, level of development and extent of poverty in many disaster-prone areas of the globe further exacerbate the cumulative impact of such catastrophes.

- Humanitarian crises have underscored the inability of healthcare facilities, not only to provide uninterrupted urgently needed health services, but to maintain structural integrity in the face of these tragedies

Disasters Circa: 1950-2000

- From 1951 through 2000 the number of disaster events increased by 1,100% from approximately 419 events from the years 1951-1960 to 5,512 from the years 1991-2000 according to the World Association for Disaster and Emergency Medicine (WADEM)

- The number persons affected by disaster events increased by 18,000% from 11.5 million in the years from 1951-1960 to 2.1 billion for the years between 1991-2000 according to the World Association for Disaster and Emergency Medicine (WADEM)

- **And then came September 11, 2001 and beyond**

Numbers of disaster-related deaths (1991-2000)

- **Natural: 754,200**
- **Technological: 87,600**
- **Human conflict: 2,300,000**

Health Disasters and Disaster Medicine; Marvin Birnbaum, MD; WADEM; June 2005

Frightened and weary, 18-month-old Manni Kannan weeps inconsolably when he cannot find his house, destroyed by the tsunami, in the village of Vemba Keera Palyam in Pondicherry, India. The tsunami had destroyed not only his house, but a centuries old way of life. His father Mr. Babu is a fisherman who lost his boat and nets on that Black Sunday, rendering him and his family unemployed, homeless and mentally devastated.

Photo credit:
http://www.searo.who.int/LinkFiles/Reports_Tsunami_and_after-india.pdf

Economic costs

1990-2001 (*estimated*):

- **Total: $2.1 trillion**
- **Per year: $200 billion**
- **Per day: $550 million**

*** *Not including:***

- **Complex emergencies (internally displaced persons (IDPs) + refugees)**
- **Opportunity costs**
- **Intangible costs**

International Efforts

- International public health, humanitarian and relief organizations such as the WHO, PAHO, UN, World Bank and WADEM have sponsored a series of global forums intent on developing guidelines for designing, constructing and evaluating “safe and resilient” hospitals as part of an overall vulnerability and risk reduction strategy for new healthcare facilities.

- The underlying goals of these guidelines are to protect the lives of patients, staff and other occupants and ensure that hospitals continue to function during and after a catastrophic event, whether natural or technological in nature.

World Health Organization
Regional Office for South-East Asia

Pan American Health Organization
Regional Office of the World Health Organization

WADEM

Joint Commission International

United Nations

Recent Experiences

- Successful resolution of community- and region-wide crises is intimately connected with the functional efficiency of healthcare facilities.
- The impact of a hospital's ability to maintain functionality can limited their ability to accommodate a sudden, large influx of patients.
- Communities that loose their hospitals in the aftermath of a disaster often loose the ability to provide common everyday public health services, such as vaccinating the population and treating everyday injuries.

World Conference on Disaster Reduction

- The model of “safe and resilient hospitals” was promoted as an integral component of disaster risk reduction planning in the healthcare sector, at the 2005 World Conference on Disaster Reduction (Kobe, Japan), and has been used to endorse policies which ensure “that all new hospitals are built with a level of resilience that strengthens their capacity to remain functional in disaster situations

- To date, no single internationally adopted definition exists as to what constitutes a “safe and resilient” hospital.

Resilient Hospitals: More Than Just Infrastructure

What Constitutes Hospital Resiliency

- Under normal operations, hospitals are viewed primarily as health providers affording individuals and families timely medical care.
- Under catastrophic situations, the community role of a hospital becomes more pronounced and extends far beyond a structural entity which offers healthcare services.
- In the wake of a disaster, an affected population no longer gathers at hospitals solely to seek healthcare services
- Past disaster events have shown that the general public regard hospitals as centralized points of community support and assistance; crowds gather around hospitals for air conditioning or electricity, food and water and accurate information

Beacons of Light in the Community

- Since hospitals operate 24 hours per day, 7 days per week and are perceived as the hub for rescue workers and emergency personnel, relatives searching for missing loved ones, amid fear and uncertainty about the disastrous events, will ultimately turn to hospitals in hopes of locating lost family
- People will naturally look to hospitals as a source of direction, support, and a rallying point for assistance in times of emergency
- It is important that hospital responses be congruent with these expectations
- These expectations become obligations that should not be ignored in the overall community response to disaster events

Photo Credits:
FEMA

Resilient Hospitals: More than just Infrastructure

- The concept of “safe and resilient” hospitals must encompass and address not only infrastructure, but also crosscutting themes of hospital disaster preparedness including institutional capacity building, education and training, project implementation, facilitating local and regional cooperation, information sharing, networking and knowledge management and the provision of subject matter expertise

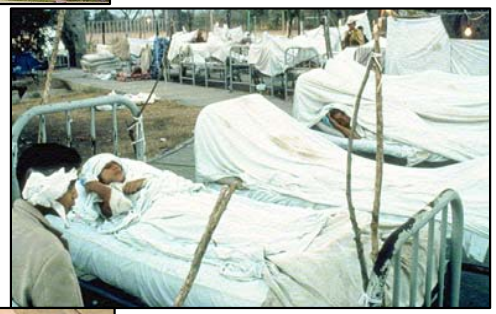
Safe and Resilient Hospitals

- Safe and resilient hospitals represent facilities:
  - in which urgently needed medical care remains accessible and functioning at full capacity (or at minimum, operating as a sufficiency-of-care facility) during and after a catastrophic event;
  - capable of providing the reassurance and medical leadership needed by the general public in times of crisis;
  - with structured relationships that establish an interface among local and regional entities involved in a community-wide disaster response.

International Initiatives

Nations Vary Widely

- Nations vary widely in their approach and response to disasters
- Common organizational models for disaster preparedness are often adopted among groups of countries (e.g., those in the European Union, South America and Africa)
- The United Nations and other humanitarian and relief organizations, through programs such as the International Strategy for Disaster Reduction (ISDR) have contributed to the dispersion of general modalities for disaster preparedness, while encouraging countries to adjust these policies to align with their own realities
- The Pan American Health Organization (PAHO) and the Asian Disaster Preparedness Center (ADPC) have also influenced the progression of disaster preparedness across a wide variety of nation states



The Indian Ocean Tsunami of December 2004

- **Loss of life**
  - **186,983 confirmed dead**
  - **42,833 missing and assumed lost**
  - **One third of those dead were children**
- **Post-event potential disease threat**
  - **Diarrhea, cholera, typhoid, dysentery, measles, malaria and dengue fever**
  - **Threat to 3-5 million tsunami survivors, one third of which were children**
- **Massive loss of housing and basic services such as food and water**

Photo credit: National Geographic

Photo credit: http://cdn.channel.aol.com

Road Map Ahead

Road Map Ahead

- **Standardizing Hospital Emergency Preparedness**
- **Establishing Benchmarks**
- **National/ International Strategies**
- **Action Plan to Develop Organizational and Community Regional Disaster Resilience**

The Case for Standardizing Hospital Emergency Preparedness

A case for standardizing hospital emergency preparedness

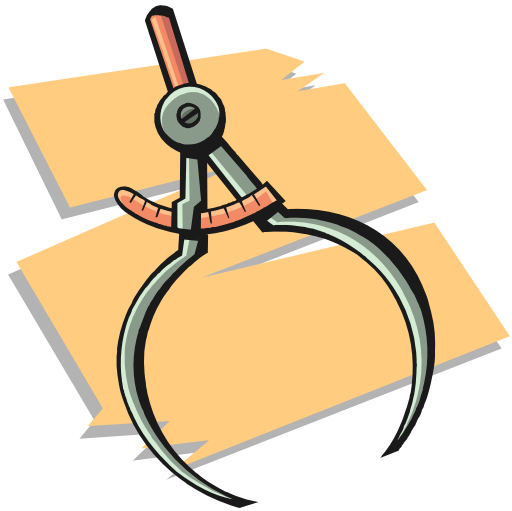
- **Benchmarks are necessary for hospitals worldwide in responding to a disaster event:**
  - **Establishing minimum standards of patient care (sufficient versus ideal)**
  - **Human resources development, training and education**
  - **Capability, capacity and readiness assessments**
  - **Information technology and communication system integration**
  - **Agreed upon measurements and tools**

Photo credit: FEMA

Photo credit: AP file

Impediments to Applicability

- **Lack of uniformly accepted, standardized *terminology and definitions***
- **Lack of a conceptual framework to provide a *structure***
- **Lack of endorsed set of *indicators* for evaluation of specifics**
- **Lack of consistent *measurement tools***



Current Activity

- International standards used by countries to develop their own accreditation capacity (Zambia, Eritrea, Germany, France)
- Individual organizations accredited in 23 countries, e.g., Germany, Italy, Austria, Czech Republic, Saudi Arabia, UAE, Qatar, India, Singapore, Philippines, China, Taiwan
- Two partners offering “joint accreditation”: Brazil and Spain
- Currently 125 accredited organizations

Establishing Benchmarks

Twelve benchmarks for preparedness and response:

Southeast Asia Regional Office of the World Health Organization (SEARO)

1. **A *legal framework* for preparedness and response has been achieved at national and community levels**
2. ***Coordination mechanisms* are in place that include defined roles**
3. **A *disaster plan* includes memoranda of understanding, standard operating procedures, coordination and control, all-hazards and hazard-specific approaches**
4. ***Community plans* for preparedness and response are in place**
5. **Communities have *capacity* to manage crises**
6. **Countries can provide financial, essential personnel, equipment and supply resources**

World Health Organization
Regional Office for South-East Asia

Twelve benchmarks for preparedness and response:

Southeast Asia Regional Office of the World Health Organization (SEARO)

7. ***Rules of engagement*** **exist for the management of external actors**

8. **Awareness and advocacy programs to prepare the population at risk have been implemented**

9. **Hazards and the vulnerability of the society to the hazards have been identified**

10. **Training and education programs have been implemented**

11. **Health facilities are able to continue to provide care**

12. **Surveillance and early warning systems are in place**

World Health Organization
Regional Office for South-East Asia

Strategies

Yokohama Strategy

- **Drawing on the conclusions of the review of the Yokohama Strategy, and on the basis of deliberations at the World Conference on Disaster Reduction adopted the following five priorities for action:**
  - **Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.**
  - **Identify, assess and monitor disaster risks and enhance early warning.**
  - **Use knowledge, innovation and education to build a culture of safety and resilience at all levels.**
  - **Reduce the underlying risk factors.**
  - **Strengthen disaster preparedness for effective response at all levels.**

Action Plans

Action Plan to Develop Organizational and Community Disaster Resilience

- ***Awareness and Understanding of Interdependencies***
  - Develop an infrastructure interdependencies template for use by stakeholder organizations on a regional basis and revise and improve existing preparedness and disaster management plans to address the interdependencies

- ***Resilient and Interoperable Communications and Information Systems***
  - Establish emergency communications contingency plans for public and private-sector organizations that include backup systems to ensure redundancy to deal with outages of phone, cell phone, and Internet service.

- ***Risk Assessment and Mitigation***
  - Bring together government, private-sector, and other key stakeholders to identify what incentives and liability protection would be most useful to encourage organizations to undertake vulnerability and risk assessments.

- ***Cooperation and Coordination***
  - Create regional public-private partnerships (the scope may be a municipality, other region within, or a single state that focus on infrastructure security, homeland security, or disaster resilience and may serve as a collaboration mechanism and an umbrella for other associations and groups focused on similar missions.

- ***Roles and Responsibilities***
  - Conduct workshops on regional incident management and create a working group of key stakeholder representatives to delineate roles and responsibilities of authorities at all levels and also of private-sector stakeholders.

Action Plan to Develop Organizational and Community Disaster Resilience

- ***Response Challenges***
  - Develop a practical and effective credentialing process that includes input from county and municipal officials, private sector organizations, and other key stakeholder organizations. This process must also be coordinated with neighboring states and, if appropriate, across national borders.
- ***Recovery and Restoration***
  - Create a disaster management resource inventory/database with analytic capabilities of public and private-sector resources available for response and recovery, including technical subject matter experts, manpower, vehicles, food, water/ice, pharmaceutical supplies, temporary housing, equipment, services, and points of contact information.
- ***Business Continuity and Continuity of Operations***
  - Conduct a continuity of operations workshop for small and medium-sized organizations that includes interdependencies and links interdependent organizations.
- ***Logistics and Supply Chain Management***
  - Develop a management strategy to ensure the availability of and access to critical equipment, materials, components, and products, including those from off-shore sources.
- ***Public Information/Risk Communications***
  - Develop a public information strategy to coordinate dissemination of information during a regional crisis and include selected media representatives in regional preparedness planning, exercises, and training, as necessary.
- ***Exercises, Training, and Education***
  - Develop tools for educating healthcare, public officials and citizens on local disaster preparedness and management plans and challenges and continue the disaster resilience “life-cycle” of improvements, exercises, lessons learned, etc.

Summary

In disasters, preparedness elements are common to all hospitals and healthcare delivery entities

Preparedness

Pre-Incident	Incident	Post-Incident

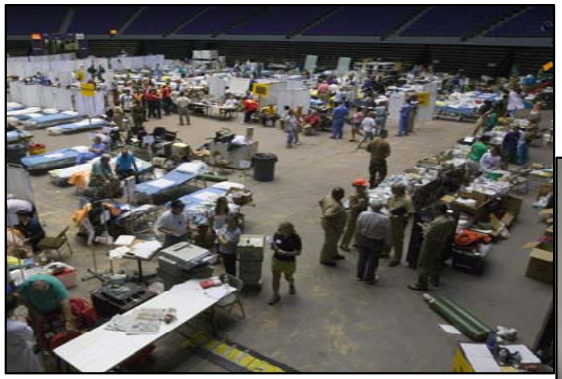
Continuum

- **Prevention**
- **Response**
- **Recovery**
- **Mitigation**

If disaster strikes, is your organization prepared and resilient?

Have you considered:

- **Lives at stake**
- **Lives lost**
- **Lives saved**



During a disaster and in the days, weeks and months following, will your hospital be able to continue to fulfill its mission to provide ongoing healthcare to your community, or will your organization be yet another victim of the disaster?

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