

with the hospital building, rendering the working conditions unsafe for the medical team during disasters.

Conclusion: This paper envisages the functionality and challenges of healthcare providers during floods despite their limited available resources. The prevailing case scenario demonstrates the challenges in rural India, and the best practices for safe rural hospitals in coping with disasters in a resource-poor setting will be discussed.

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(A281) Protecting and Preparing Critical Hospital Infrastructure — Redundancy, Security, and Disaster Response

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Western Australia (WA) currently is undergoing a major rebuild of its key metropolitan and regional hospitals, with the planned construction of a major tertiary hospital, pediatric hospital, and several large general hospitals in the metropolitan area, and a range of small and medium size hospitals in WA over the next five years. Protecting these hospitals from major internal failure and external assault, while preparing them to cope with mass casualties, has been a major focus of the WA Department of Health over the last five years. This program has involved capital investment in current infrastructure, including critical asset protection, and detailed planning to ensure that the new health infrastructure will have both the redundant systems, to allow for continued operations in a range of infrastructure failure and disaster scenarios, and the facilities to deal with a mass-casualty incident. This presentation will review the implementation of this critical infrastructure program, the evolving issues facing hospitals working to ensure their continued operations in a range of scenarios, the security and infrastructure threats facing major hospitals, and the planning required to ensure that these threats are addressed at an early stage of hospital development. Issues as diverse as the placement of underground garages to minimize bomb threats, the location of helicopter landing pads, and the consideration of how to lock down hospitals to prevent the uncontrolled access of contaminated patients, are some of the challenges that need measured consideration and a planned response. The preparations and planning for such contingencies, and the infrastructure to facilitate continued operations and an appropriate disaster response, are key elements in protecting critical health infrastructure.

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(A282) Comparison of Safety Index in Iranian Hospitals

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Introduction: Hospitals are highly complex facilities that play a key role in the medical response to disasters. However, they are susceptible to the impact of disasters with respect to their structural, non-structural and functional elements. Many hospitals

have collapsed or been damaged and rendered nonfunctional as a consequence of disasters. The resilience of a hospital along with the capability of effective medical response to disasters is a key part of a community based disaster plan.

Objective: The objective of this study was to evaluate and compare hospitals in Iran with respect to safety.

Methods: This study was performed as a survey in four hospitals in Iran. The Hospital Safety Index package from WHO was used as an evaluation tool. The evaluation team consisted of: a PhD in structural engineering, an architect with a Master's degree, a specialist in electrical and mechanical maintenance, a medical doctor, a specialist in disaster management, and an expert in health care planning. The hospitals were evaluated in three elements; structural, non-structural, and organizational. The hospital safety calculator was used.

Results: The most important hazard for these hospitals was earthquakes. The structural safety at three hospitals was inadequate or at risk; and consequently needs intervention in a near future. Also, the administrative and organizational element of these hospitals was inadequate or at risk. All hospitals need intervention in the near future due to non-structural safety being inadequate. The overall safety index at one hospital was A (functional); in two hospitals B (at risk); and in one hospital C (inadequate).

Conclusions: The Iranian hospitals which had been assessed were on the whole unsafe. Also, these hospitals do not have a disaster management plan. Implementing a comprehensive disaster plan, including mitigation and a preparedness plan, would most likely enhance the safety of these hospitals.

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(A283) Hospital Security Planning for Patient Surge Incidents: A Comparison of Three National Systems in China, India, and Japan

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Introduction: As the number of disasters caused by natural and non-natural hazards increase, so does the emphasis placed on healthcare security planning for the influx of patients that often accompany such events. This presentation expands on a previously published examination of national healthcare security systems and emphasizes the role of security in the hospital environment during disasters in China, India, and Japan. National emergency preparedness planning systems and disaster type are examined. Elements of planning for a mass-casualty incident (MCI) that most directly impact security planning include mass-notification alert systems, patient routing processes to hospitals (from an MCI scene) and within hospitals (emergency department flow), staffing, disaster triage, patient identification, tracking and discharge, volunteer tracking, and the adaptability and flexibility of space and processes.

Methods: Researchers conducted extensive literature reviews of country-specific health care and physical security elements of patient surge. The comparative analysis was augmented by communication with national healthcare security experts.

Conclusions: Positive associations exist between increased disasters and the level of priority and funding given to healthcare security measures in disaster planning. National characteristics of governance, landmass, disaster history, and population influenced the development of healthcare security systems and planning for patient surge incidents. Planning for the mental health impact of terrorism victims, and its subsequent impact to patient surge into hospitals was more relevant in the literature for both India and Japan.

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(A284) Improving Hospital Mass Casualty Preparedness through Ongoing Readiness Evaluation

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Background: Israeli Hospitals are required to maintain a high level of emergency preparedness.

Objectives: To investigate the effect of on-going use of an evaluation tool on acute-care hospitals' emergency preparedness for mass casualty events (MCE).

Methods: Evaluation of emergency preparedness for MCE was carried out in all acute-care hospitals, based on an evaluation tool consisting of 306 objective and measurable parameters. Two cycles of evaluations were conducted in 2005 to 2009 and the scores were calculated to detect differences.

Results: A significant increase was found in the mean total scores of emergency preparedness between the two cycles of evaluations (from 77.1 to 88.5). An increase was found in scores for standard operating procedures, training and equipment, but the change was significant only in the training category. The relative increase was highest in hospitals that did not experience real MCE.

Discussion: This study offers a structured and practical approach for ongoing improvement of emergency preparedness, based on validated measurable benchmarks. An ongoing assessment of the level of emergency preparedness motivates hospitals' management and staff to improve their capabilities and thus results in a more effective response mechanism for emergency scenarios.

Conclusions: Utilization of predetermined and measurable benchmarks allows the institutions being assessed to improve their level of performance in the evaluated areas. The expectation is that these benchmarks will allow for a better response to actual MCEs. The study further demonstrated that even hospitals without "real-life" experience can gear up using preset benchmarks and reach a high standard of mass casualty event preparedness.

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(A285) Hospital Preparation for Mass Casualty Events

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Background: Hospitals handle numerous tasks whose fundamental purpose is to provide medical treatment. Amongst

these, the hospital prepares for the treatment of trauma patients who have been involved in car accidents, injuries at work and industrial accidents. These preparations, although part of the operative conventions of the hospital, do not guarantee the ability to handle Mass Casualty Events which require unique and dedicated preparation and a different operational approach. This paper presents the hospital approach of handling Emergency Mass Casualty Events.

The Approach: The preparations require involvement of a national level that must participate in the definition of the activities, task assignment and preparation of an annual plan. The peak of the preparations is a multidisciplinary drill, implemented as part of the annual activity of the hospital.

The Implementation: In an emergency situation, the aim is for the hospital staff to be capable of providing its patients (and family members) the best professional care in any given scenario. To achieve the above, the hospital is required to perform the following tasks: Defining procedures, personnel training, logistics infrastructure, control, drills and lesson learned implementation. The tasks should be performed under a multi-annual plan that covers various Mass Casualties Events scenarios including: a train accident, an event involving dangerous industrial materials (e.g. ammonia spill), biological scenarios (e.g. bird-flu) and radiation events (e.g. nuclear reaction).

Conclusions: Only precise preparations, disconnected completely from the on-going hospital routine can answer the need to handle Mass Casualties Events.

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(A286) Safe Hospital Program and Safe Medical Unit in Mexico

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Safe Hospital Program and Safe Medical Unit in Mexico. The program was established in 2006 within the General Coordination of Civil Protection of the Department of Government and includes a National Evaluation, Diagnosis and Certification integrated of all the institutions of the Public Health Sector, Private and Social. They have about 700 accredited assessors more than 2,700 who have taken the training. There have been more than 1,700 self-assessments and have been assessed in 205 hospitals. The legal framework has been integrated the Safe Hospital Program in the Civil Protection General Law, is included in the Official Mexican Standard that relates to health facilities, has gained access to the Disaster Prevention Fund that manages the Interior Secretary and has established that prior to the Certification of Quality Health Council General (including international standards of the Joint Commission) is evaluated as Safe Hospital. Of the hospitals classified as unsafe have been evacuated two (which will be demolished) with alternative of building new high level of security. In a large number of hospitals have improved fire detection systems, evacuation routes and emergency stairs, as others.

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