

arrival, and safety of the vaccines. Times of crisis also offer opportunities for a change for the better, and the analysis suggests opportunities, such as health promotion efforts exist.

Conclusions: Discovering the challenges is part of the solution, and the major challenge found was the lack of trust in the safety of the vaccine by both the public and medical community. The products of the analysis were implemented in the Israeli vaccination program planning. In order to implement the vaccination program successfully, health officials must invest heavily in an open communication with the medical community and public, based not only on global knowledge but also culturally tailored to the local community. Planners must think globally, but act locally; be prepared, but be flexible.

Keywords: Israel; influenza; pandemics; vaccines; vaccinations

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Surge for Sale

Mauricio Lynn, MD

Associate Professor of Surgery, The Ryder Trauma Center, University of Miami School of Medicine; Head of Mass Casualty Preparedness, Miami, Florida USA

Objective: The aims of this study were to describe the key components for surge capacity planning, and to appraise the estimated cost of preparing all hospitals in America to manage a sudden, conventional, mass-casualty incident.

Methods: Israeli protocols for hospital planning for mass-casualty incidents (MCIs) were reviewed and applied to the American setting.

Results: Surge capacity is estimated to be up to 20% above the total number of hospital beds. Between 10–20% of victims of a conventional MCI will be categorized as severe or critical. Assuming medical personnel will be available to manage a MCI, the main costs for surge capacity planning are ventilators, monitors, stretchers, wheelchairs, trauma and intensive care portable carts, and communications equipment. There are 5,750 hospitals in America with a total of 980,000 beds. The total surge capacity in the United States will be 196,000 patients, of which 39,200 are expected to be severe or critical. Assuming medical care initially will be provided only to critical patients, the cost of material resources is summarized in the table below.

	1 patient	39,200 patients
Ventilators	\$10,000	\$392,000.000
Monitors	\$5,000	\$196,000.000
Stretchers	\$1,000	\$39,200.000
Medications	\$2,500	\$98,000.000
Other supplies	\$6,000	\$235,200.000
Grand total		\$960,400.000

Conclusions: When established protocols for hospital disaster planning are used, surge capacity for a sudden conventional MCI in the United States may cost <\$1 billion.

Keywords: cost; equipment; mass-casualty incident; planning; surge capacity

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A Model of Personnel Mobilization during Mass-Casualty Incidents

Mrs. Gila Margalit, RN, MHA

Israel

Introduction: During a mass-casualty incident (MCI), emergency department medical and nursing personnel must be reinforced by additional personnel in order to treat the casualties and escort them to the relevant unit. In order to treat and transfer the casualties more efficiently, a new plan for nurse mobilization was developed.

Objective: The goal of this study was to develop a model of critical care nurse mobilization at the hospital to support treatment while escorting casualties from the emergency department to the relevant unit.

Methods: During a MCI, nurses are called from their homes to reinforce the staff in the critical care units. In order to address the need for nurse reassignment to support the emergency department team, the nurses are asked to present themselves directly to the emergency department rather than their home unit.

Each nurse is requested to care for and escort casualties to their unit. Nurses will be assigned based on their skills and their position in the critical care unit.

The mobilization model was tested during MCI exercises. The following parameters were measured: (1) arrival time of nurses from their homes; (2) assignment of the nurses based on their skills to match the severity of the injuries; and (3) the redistribution of workload of nursing staff in the emergency department by:

1. Time/number of emergency department nurses per patient;
2. Number of emergency department nurses outside the emergency department at any given time; and
3. Coordination of patient flow.

In addition, the exercise tested how the various units functioned as a result of the nurse mobilization.

Conclusions: The implementation of the new model ensures a professional and skillful transfer of casualties and efficient reinforcement of the personnel in the various units.

Keywords: emergency department; hospital; mass-casualty incident; mobilization; nursing; transfer

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“We Gotta Get it Right”: Planning for Catastrophic Events

Peter D. Marghella, CEM, FACCP

Senior Partner Disaster Preparedness Resources, Inc. (DPR)

We live in dangerous times. Those who wish to do us harm will use every possible means to inflict damage to achieve their goals, potentially including the use of weapon systems capable of generating catastrophic levels of casualties. The next attack might occur anytime, anywhere. Irrefutably, any attack will challenge our response efforts. These concerns are added to ongoing, routine, and cyclic expectations that naturally occurring disasters such as pandemic disease outbreaks, catastrophic weather, and seismic activity will present and challenge our ability to provide prompt and effective response to an impacted community or region.

Regardless of whether these disasters will occur as a result of natural, human-made, or asymmetrical events, it is a given that no other portion of our critical infrastructure will bear as heavy a burden as the healthcare and public health key resource sectors. Proactive (deliberate) planning no longer is a luxury; it is, instead, a national imperative. This presentation is designed to expose medical and public health experts and community leaders on the new challenges facing us in this “Era of Asymmetrical Threats”; review planning and response related to previous high-end disasters, and to consider strategies for the medical and public health management of future catastrophic events.

Keywords: human-made hazard; preparedness; public health

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Risk Infections and Bioterrorism

Dr. Krassimir Metodiev

President, International Medical Association Bulgaria, Secretary General, Federation of European Societies for Chemotherapy and Infections, Honorary Consul of Israel, Bulgaria

This presentation is dedicated to the problem of the possible application of severe infections for bioterrorism. The author will describe the most dangerous infections that could be used as agents for bioterrorist attacks. A national and international structure of all medical, civilian, and military organizations, as well as North Atlantic Treaty Organization (NATO) Advanced Research Workshops (ARWs), are provided as an example of how to organize the defense against such threats.

Keywords: bioterrorism; civilian; coordination; infectious agents; military; North Atlantic Treaty Organization

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Innovative Medical Shelter for Medical Response

R. Miniati;¹ F. Dori;¹ E. Iadanza;¹ M. Lo Sardo;¹ S. Boncinelli²

1. Department of Electronics and Telecommunications, University of Florence, Italy

2. Critical Area Department, CESPRO, University of Florence, Italy

Introduction: During medical emergencies, hospitals represent the final point of the entire rescue process. Therefore, effective mobile health structures must be inserted between hospitals and the place of the event with the aim of providing the best treatment (using appropriate and easy-to-use equipment) for a safer and faster evacuation to hospitals.

Methods: A literature review of national and international disaster medicine standards were used to provide clinical, hygienic, and organizational needs for the medical structure design. Project requirements were obtained by analyzing structural, organizational, and clinical process necessities. Structural requirements to respond to the possibility of installation on every ground type, resistance to every weather condition, and necessity of easy and fast transportation were found.

Results: The designed structure results to be a Longitudinal Expandable Shelter (LES) for medical emergency response organized in three internal functional areas. The possibility of automatic expandability allows for rapid transporta-

tion and easy deployment. The functional internal organization consists of three areas: (1) diagnostic; (2) therapeutic; and (3) pre-evacuation monitoring. Furthermore, longitudinal expandability supports the basic hygienic rules in healthcare processes allowing for the unidirectional flow of casualties from dirtier to cleaner areas of the structure.

Conclusions: The LES is an answer to expressed requisites by disaster medicine standards and guidelines. It aims to provide efficient support for response to disasters or emergencies, by improving aspects related to effectiveness, hygiene, and quality of clinical performances.

Keywords: emergency; response; mobile health structure

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The Medical Disaster Response: Is It More than a Multiple-Casualty Event?

Dan Nemet MD; Brig Gen (Res) Shalom Ben-Arie

Israeli National Search and Rescue Unit, Home Front Command, Israeli Defense Forces, Israel

The medical management of a major multiple-casualty event whether caused by natural or human-made hazards is a challenging task of utmost importance. Although primary prevention is the most effective mean of reducing casualties, unfortunately, this is not always possible.

In the case of a disaster, medical preparedness is critical, response time is important, especially in a setting in which resources may be limited, and the population might be overwhelmed by the event.

The Israeli National Search and Rescue Unit was established in 1984. Since then, the unit participated in many search-and-rescue operations in Israel and abroad and gained breadth of experience and knowledge in disaster medicine. In order to optimize the ability to cope with the medical consequences of disasters caused by natural hazards and acts of terrorism, it is clear that the knowledge and experience of physicians and others actively involved in the medical management of trauma and other disasters must be shared.

The Israeli Home Front Command recently completed its medical disaster manual of operations. It is believed that sharing experiences and exchanging information with an international team of experts in the field will help to establish guidelines for this growing field of disaster medicine and improve the ability to operate during a disaster.

The following fields of discussion are proposed:

1. Disaster medicine triage: why and how is it different?;
2. Treatment of crush injury: controversies and guidelines;
3. Anesthesia and analgesia in the field;
4. Special equipment development and usage in disaster events;
5. Basic training for medical communities: a two-day disaster medicine course; and
6. Training the community: from preschool to the elderly.

Keywords: cooperation; information; knowledge; management; preparedness

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