

**Methods:** A real-time simulation exercise with trained volunteers playing casualties was conducted by the Ministry of Health. The hospital had to submit its mass-casualty protocol prior to the exercise. The Ministry provided a best-practice guideline on various hospital processes. Exercise controllers and peer observers from other hospitals were assigned to evaluate the various system processes and utilized a graded scoring system. The casualty load was timed to simulate surge capacity. The scenario of the exercise was a bomb blast at a public mass-transport station.

**Results:** A total of 180 casualty simulators were managed from the emergency department to their final inpatient disposition. The hospital's operational readiness and capabilities were validated and assessed. A four-tiered State of Readiness Score (fully ready, high state, acceptable state, barely ready) was given at the end of the exercise.

**Conclusions:** Mass-casualty simulation exercises provide more realism in rehearsing hospital disaster plans. The presence of anesthesia and surgical teams in the emergency department with direct command of operating theater space and intensive care beds helps in the timely disposition of critically injured casualties.

**Keywords:** emergency preparedness; hospital incident command system; simulation exercise; surge capacity

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### (H72) Emergency Medical Information System and the Strategy of Disaster Medicine

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At the time of the Great Hanshin-Awaji Earthquake in 2005, the maximum effort of the individual hospital was not sufficient to meet the excessive needs. A Japanese emergency medical system especially for disasters has been established after analyzing several experiences after the earthquake.

The conversion of medical institutions is necessary when a disaster impacts in a large region. During the acute phase of a disaster response, the Emergency Medical Information System (EMIS) becomes the tool that is used to share the information regarding damages to the medical institutions, the ability to accept patients, and the activities of Disaster Medical Assistance Teams (DMATs). In order to organize the effective use of EMIS by hospitals, specialists in disaster medicine are needed; DMATs are appropriate for this responsibility. The first priority of DMAT activities during the acute phase of disaster response is recovery of the disaster base hospital. The second priority is the establishment of the information-sharing system and transportation from the individual hospitals to the disaster base hospitals. The third priority is a transfer system from the disaster base hospital to hospitals in an unaffected area.

The conversion system of medical institutions of the area in which EMIS and DMATs are centered was established especially for the acute phase of disaster response. In Japan, the difficulty in accepting patients in emergency medical care has become a social problem. In the future,

this disaster medical system also should be applied to usual emergency medical care.

**Keywords:** acute phase; capacity building; disaster medical response teams; emergency medical information system; Japan; preparedness; response

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### (H73) Resource Continuity Overview Database and Rating System

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**Introduction:** The ReCOVer (Resource Continuity Overview) Database and Rating System has been developed to highlight a hospital's capacity and level of preparedness during situations such as terrorism, natural disasters, pandemics, mass-casualty incidents, and infrastructural failures. The system focuses on the supply of essential resources (e.g., electricity, water, gas) of a hospital and compares it to their level of clinical acuity.

**Objective:** The objective of ReCOVer is to identify the vulnerability of key resources of healthcare facilities in the event of a disaster. ReCOVer also identifies further needs for improved risk management and business continuity planning at the local hospital level.

**Methods:** In order to develop the ReCOVer rating system, key experts including hospital engineers, disaster coordinators, fire personnel, security, information technology, and nurse unit managers were called upon to identify key resources and their dependencies. Following this, disaster scenarios were simulated to test the validity of the information provided. Questionnaires were issued to hospital resource managers to collect resource data. From this information, ReCOVer generated a rating of preparedness for each resource category.

**Results:** The information gathered from the questionnaires is available online to health managers who are able to evaluate preparedness and capacity of a single hospital or a cluster of hospitals across a wide geographical area.

**Conclusions:** ReCOVer highlights vulnerable facilities that by comparing resource capability against clinical acuity. This enables managers to make better decisions on improving disaster preparedness.

**Keywords:** capability; database; disaster; preparedness; resources

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### (H74) Athens International Airport Medical Services Preparedness for Coping with Airport Disasters

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**Introduction:** Recently, a significant number of airplane accidents involving a large number of victims have been recorded. Athens International Airport (AIA) organizes annual field exercises in order to assure preparedness and a high level of training for all agencies involved. Airport Medical Services staffed by the Hellenic National Centre for Emergency Care (EKAB), deliver emergency medical care on a daily basis or in case of an airplane incident.

**Methods:** An aircraft crash in proximity to the AIA was simulated in order to assess the required procedures and cooperation and coordination of all agencies involved. The Airport Medical Services assessed the emergency response plan, coordination with involved agencies, transition of command, medical response operations (triage, treatment, and transport), response performance, communications, data recording, role assignment, psychosocial support, equipment efficacy, etc. Evaluation forms of all previous exercises were reviewed and gaps and pitfalls were taken into consideration.

**Results:** Following the observations from previous exercises, improvements were seen in all aspects listed. Issues that can be improved further concerned communications, data recording, and equipment. These have been marked and will be addressed. Better cooperation with other involved agencies and better coordination of all medical personnel was achieved because of enhanced knowledge of the emergency plan, common training, and specific role assignment.

**Conclusions:** Emergency field exercises organized by the AIA and reviewed led to the identification and improvement of weaknesses and limitations of planning, maximizing performance, and improving the efficiency of the services provided.

**Keywords:** airplane crash; emergency response plan; field exercise; medical response; preparedness

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#### (H75) Hospital Preparedness for Non-Conventional Event—Drill Evaluation

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**Introduction:** The Tel Aviv Sourasky Medical Center's (TASMC) contingency plan for non-conventional war includes the training of personnel for immediate response. The hospital departments practice as mass-casualty incident (MCI) sites. The hospital's surge capacity is expanded with designated sites designed to handle hundreds of patients, activation of the hospital's call-up system, a computerized information center for the public, and the activation of the Incident Command System (ICS). All these goals were practiced during a non-conventional war drill in March 2008.

The drill involved the Home Front Command (HFC), the Magen David Adom (the National Israeli ambulance services, emergency medical services), the Israeli Police Forces, the Tel Aviv Municipality, and the Tel Aviv Firefighters.

**Methods:** Approximately 600 nurses, physicians, and paramedical personnel participated in the drill. There were four designated sites for MCI patients. All computer and communication systems were operational during the drill.

**Results and Conclusions:** Drills are a necessary tool to assess preparation and readiness. Drills provide the lessons and recommendations to be implemented at the next event.

**Keywords:** chemical, biological, radiological, nuclear, or explosive; drills; hospitals; non-conventional event; preparedness

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#### (H76) Mapping Support for a Health Emergency System

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Supporting populations during major incidents is based on the effective coordination of available medical resources. One way to ensure better preparation for emergency situations is to utilize geographic information system modeling methods to fuse infrastructure, demographic, and risk sources data. Synthesized maps, developed in close collaboration with the regional administration and emergency system, provide visualization of regional medical capabilities to cope with a major incident with a large number of casualties.

Mapping support for health emergency system employs a two-step approach. First, it uses GIS technology to process communication network data to determine distances between major incident sites and medical facilities. These distances, estimated types and number of casualties, and available medical resources are used to calculate the time needed to cope with a major incident in a specified point in the territory. The procedure is repeated for all the defined points in the area of interest. The result is a capability map—a map layer covering the territory and containing color-coded information on the capability of the territory to absorb the estimated number of casualties in a given time period.

In the second step, the capability map is fused with a risk profile and demographic data of the territory to identify which gaps are necessary to address (e.g., by improving management of resources or creating new resources within the territory).

The synthesized maps form a basis for policy analysis and scenario planning in major incident preparedness. Mapping support brings advantages to situational awareness for decision-makers. Local stakeholders can use these maps to enhance major incident planning, policy change support, and citizen education.

**Keywords:** capacity building; emergency; global information system; mapping; preparedness

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#### (H77) Disaster Preparedness by Residents in an Earthquake- and Tsunami-Prone Area

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**Background:** There is a 60% chance that major earthquakes with a magnitude of 7–8 will occur in the next 30 years on the southern coast of Mie, Japan. Since the southern rural part of the region is likely to be isolated by tsunami and landslides, residents are expected to take a self-reliant approach immediately after the earthquake.

**Objective:** The objective of this study was to develop a disaster medical support system in the region to encourage medical disaster preparedness.

**Methods:** Basic and advanced life support educational programs have been promoted. Lectures and workshops have been provided for public, local medical associations and the main hospital. For the local hospital, the Hospital Major