

Branch is part of the Medical Department at the Homefront Command (HFC), which has responsibility upon the entire medical management for civilians during war or disaster. It is staffed by five nurses and one physician. The HEP Branch wishes to achieve maximal preparedness of the Israeli hospitals for different emergency scenarios by mutual work with the Ministry of Health.

**Methods:** The main principles for hospital preparedness include:

1. Development and implementation of a unique doctrine and mode of operation to different types of disasters (Conventional and Non-Conventional).
2. Planning and construction of the appropriate infrastructure. (decontamination site, treatment sites, etc.)
3. Guidance to the hospital personnel regarding knowledge and skills.
4. Strengthening ties between the hospital array and the prehospital emergency services.
5. Exercising the hospitals with demonstration casualties.
6. Implementation of the lessons learned from drills and actual mass casualty events.

**Results:** During the last decade, a total of 172 drills were performed in all the 24 Israeli hospitals, examining the hospitals' preparedness and ability to manage different disaster scenarios. The main lessons learned were discussed.

**Conclusion:** Preparedness of hospitals for management of variety of disasters by those guidelines tremendously promoted the ability of the Israeli hospitals to manage actual mass casualty events.

**Keywords:** decontamination; disaster; drills; hospital preparedness, infrastructure; Israel; medical management; nurses; physicians; plan; prehospital; war

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### The Israeli Doctrine for Hospital Management of Mass Toxicological Incident

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**Objectives:** The probability of toxicological disaster has increased. The medical management includes organizations during prehospital care, but the main treatment echelon is the hospital. The Home Front Command Doctrine for Mass Toxicological Incident at the hospital level was implemented and tested among the Israeli hospitals.

**Methods:** Doctrine guidelines—the first casualties will arrive to a hospital that is unprepared for a toxicological mass casualty incident. An immediately available nurse and a physician protected by gas protective mask and surgical gloves will admit, undress, and treat casualties inside the Emergency Department. Within minutes, other fully protected personnel will operate a pre-prepared decontamination site outside of the Emergency Room. Undressing, antidotal treatment, and wet decontamination is performed, and then, casualties are admitted to the different treatment sites.

During the last four years, a self-funded, small decontamination site was established by all hospitals. Protective equipment and appropriate antidotes were distributed to the hospitals.

**Results:** During 1998–2001, 30 MTI hospital drills were performed. The main lessons learned included: 1) a lag period is expected until proper diagnosis of the type of the incident is obtained; and 2) the transition phase from conventional to non-conventional mode is complex.

**Conclusion:** The Israeli strategy for MTIs is feasible.

**Keywords:** antidotes; disaster; doctrine; drills; guidelines; hospital preparedness; hospitals; Israel; mass casualty; mass toxicological incident; medical management; protective equipment

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### The Development of NDMAT in Taiwan

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**Objective:** To demonstrate the process and progress for establishing two national level Disaster Medical Assistance Teams (DMATs) in Taiwan after 921 earthquake, 1999.

**Methods:** Department of Health in Taiwanese government initiated a national DMAT (NDMAT) action plan in the year 2000. Two national university hospitals located in the northern and southern Taiwan respectively were assigned to integrate all available resources to form the response teams for coping with future disaster relief. DAMT commanders and managers from the USA were invited via internet, to assist with the training and education. The teams also serve as education centers for Disaster Medicine. Several local-level DAMTs have become affiliated with the NDAMT island wide. The infrastructure of Taiwanese disaster management was introduced.

**Results:** More than 1,000 medical professionals and supporting personnel underwent disaster training. Both military people and volunteers were summoned to participate. Team structure as well as personal equipment purchased for fields hospital operation, and a functional exercise model along with the outcome evaluation methodology were presented.

**Conclusion:** 1) "Train the trainer" to start disaster education is the lesson shared; and 2) An incident management system (IMS) is utilized by our teams.

**Keywords:** development; Disaster Medical Assistance Teams (DMATs); hospitals; Incident Management System (IMS); Taiwan

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### Hospital Preparedness for Disasters: A Review of Hospital Disaster Management Plans in Taiwan

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**Objective:** To examine hospital preparedness for incidents involving external disasters in Taiwan

**Methods:** By using a structural checking list to review 213 disaster-responsible hospitals in Taiwan, administrative

plans, mobilization systems, staffs organization, area management, casualty volume management, and training/exercise plans were examined.

**Results:** Responses were received from 146 hospitals (68.5%). Most of respondent hospitals (80%) had plans for mass casualty incidents, and <10% had plans for specific events, e.g., chemical or biological weapon incidents. About 70% had a personnel response for public relationship and media, site security control, and medical inventories and supplies, but only 25% had considered cost-accounting, communication systems, a model for patient referrals, and food and water supplies during disasters. Of the hospitals providing a disaster management plan for mobilization, only 44% described when, who, and how to activate the plan, 36% had the plan for team organization, and about 50% had area management according to triage of patients, casualty volume, disaster severity, etc. Of the hospitals in this study, 70% provided education for their staffs about incidents response, but only 40% had exercises or drills yearly.

**Conclusion:** Hospitals generally are not well prepared in an organized fashion to treat victims of disaster in Taiwan, particularly for chemical or biological terrorism. The efforts to improve correspondence with international standards for disaster management will be required from local level to central government.

**Keywords:** disaster management; hospital disaster plan; mass casualty incident

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### Preparedness for Mass Gatherings in the XVIII Winter Olympic Games in Nagano

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**Objective:** The focus of this paper was medical preparedness and its results during the XVIII Winter Olympic Games in Nagano.

**Methods:** Medical care at the Nagano Games was designed with special reference to the concept of mass gathering medicine. Medical clinics and First-Aid Stations were set up at a total of 37 locations. The Polyclinic was set up at the Olympic Village. First response teams were introduced at all venues. Ambulances and rescue teams were on stand-by at the Olympic Village, and all of the competition and non-competition venues. Two helicopters were available at the alpine skiing venues. Ten local hospitals were included in the Nagano Olympic Designated Hospital System. The NAOC established the Medical Command Center (MCC) for the purpose of supervising and directing medical care activities at all the venues.

**Results:** Among the 1,275,529 participants, there were 5,968 records of patient visits at the medical facilities provided by NAOC Medical Services (0.5%). Ambulances were dispatched 63 times and helicopters five times for emergency transportation. The command system by MCC was effective in coordinating emergency transportation by

ambulance and helicopter for the hospitalization of seriously injured/ill patients.

**Conclusion:** In management of large scale events, mass gathering medicine should be an important key concept.

**Keywords:** clinics; coordination and control; first-aid stations; management; mass gathering; XVIII Winter Olympics  
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### Usage Review of Global Maritime Distress and Safety System

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**Objectives:** To clarify problems with the Emergency Position Indicating Radio Beacon (EPIRB), the ground terminal of the IMOs GMDSS (Global Maritime Distress and Safety System; COSPAS-SARSAT International Satellite System for Search and Rescue).

**Investigations:** Problems with EPIRBs have been known since 1986. The frequency of use of the EPIRBs has been very low, even since 1997 when the EPIRB became used by ocean racing yachts. An analysis of rescue records for ships requesting rescue in waters near Japan indicates that out of 7,771 people in distress, 1,450 were rescued by the Maritime Safety Agency, 4,062 were retrieved by other organizations, 2,089 helped themselves, and 170 were confirmed dead or missing. Only 119 people (14 cases) were saved using the COSPAS-SARSAT. Japan introduced COSPAS-SARSAT following suggestions made by IMO and deployed Local User Terminals (LUTs) to receive rescue signals on a 24-hour basis. However, this system has yet to prove its effectiveness in saving human lives.

**Proposed New System:** A victim-based, new, search and rescue system was proposed that includes use of the Geostationary Orbit Satellite (GEO) and a Global Positioning System (GPS). It will be tested in field experiments with NASDA's next generation mobile communications satellite (ETS-VIII) in 2003. This new system was described and its merits were discussed from the point of view of saving human lives.

**Conclusion:** The new search and rescue system discussed in the paper overcomes the limitation of EPIRBs, and has the potential to save more human lives.

**Keywords:** disaster medicine, maritime medicine, radio communication, satellite communication

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### Damage

#### Terrorist Bombing Disasters: Implications for Emergency Department Response

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