

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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Despite recent concerns about weapons of mass destruction, explosions are by far the most common cause of disasters associated with terrorism. Of 93 reported terrorist acts producing 30 or more casualties from 1991–2000, 82 (88%) involved explosions. These attacks not only resulted in significant death and destruction, but also challenged emergency medical systems in 27 countries.¹ The largest of these bombings were catastrophic medical disasters, generating hundreds to thousands of casualties, acutely overwhelming local prehospital and emergency department resources.²

Emergency physicians play a pivotal role in the immediate medical response to terrorist bombing events. They not only triage, treat, and determine the disposition of immediately surviving injured victims, they also provide prehospital medical control, manage emergency department resources, solve logistical problems, and calm a terrified public. Accordingly, they must understand the mechanisms, types, frequency, severity, and time course of injuries in terrorist bombings, as well as be familiar with the many lessons learned from past responses to terrorist bombing events.

This presentation reviewed the epidemiology of multiple and mass-casualty terrorist bombings, and discusses the implications for emergency department response. Although it is prudent to “expect the unexpected”, a rational approach to disaster management incorporates what already is known into the basis for planning and preparedness. As long as terrorists continue to use explosions to achieve their goals, terrorist bombings must remain a focus of medical disaster preparedness.

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Keywords: bombings; emergency departments; emergency management; emergency medicine; epidemiology; explosives; planning; preparedness; response; terrorism

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World Trade Center Tragedy; An Economic Analysis Using YPLL (Years of Potential Life Lost)

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Objective: To analyze the economic loss because of life lost as a result of attack at World Trades Center (WTC) because of terrorist attack on 11 September 2001.

Methodology: The list of people who lost their life as a result of attack on the WTC on 11 September 2001 was analyzed. From this list, the number of the productive life years these victims have lost will be deduced using the age at the time of death from the average age in USA. This number of years lost will put into the YPLL equation to find the loss their families have suffered because of their early demise. Then, the individual life lost and their economic value will be added to determine the total economic loss incurred on the US economy as a result of the attack

on the WTC.

Result : The economic impact as a result of life lost on the overall US economy because of that attack on the WTC on September 2001 will be analyzed.

Keywords: economic analysis; terrorism, World Trade Center, Years-of-Potential-Life-Lost

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Forced Displacement: A Disaster in Colombia—The Case of Antioquia!

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Introduction: Forced displacement is the most important disaster in Colombia. The Non-Governmental Organisation, Counsellor for the Human Rights and the Forced Displacement (CODHES) registered 91,166 persons displaced during the first trimester of the year 2001. This is 34,210 more persons than during the previous year.

Objective: To approach the problem of forced displacement in Antioquia.

Method: The Committee for the Integral Attention of Forced Displacement was established to address issues regarding the cause-effect pattern of the displacement relationships and the mechanisms designed to confront the problem, the structure and dynamics of the departmental and local committees, the system of information, training strategies, sensitization, and management.

Results: The process that was generated from the assessment of this disaster has generated a plan for mobilization of great magnitude that has been able to utilize important institutional and social resources to approach the phenomenon. As a result, we have assumed a no-violence attitude towards life.

Conclusion: Attention to the forced displacement in Antioquia has resulted in a non-violent approach that has had positive effects.

Keywords: attitude; Columbia; forced displacement; management; non-violence; sensitization; strategies

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Survey and Cost-Analysis of Injuries in the Ji Ji Earthquake in Taiwan

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Objectives: On 21 September, 1999 at 01:47 hours, the Ji Ji Earthquake (Richter Scale of 7.3) struck Central Taiwan near the Nantou area, and caused great loss of life and economy. This paper focuses on the epidemiological survey of the Ji Ji Earthquake to provide data for future epidemiological studies with the goal of preventing disasters globally.

Methods: Information about the Ji Ji Earthquake was obtained from the courses provided by the government and from the Internet. Data of the deaths, injuries, and causes of death were supplied by Department of Health. The