

road may not enough for emergency evacuation and rescue, or nursing homes may be located in high-risk regions threatened by earthquakes, floods, fires, or human-made disasters. The capacities of public facilities and equipment for disaster prevention may not be enough to handle emergency response and rescue once a major disaster occurs.

Creating a long-term safety management system is a part of the basic governmental obligations for elderly care providers. Nursing homes must conform to all of the necessary safety measures and regulations. This study presents the practical investigation on safety of the elderly nursing homes in Taiwan, including building configuration, evacuation, and preparedness in disaster prevention. Furthermore, the countermeasures for disaster mitigation and management also will be suggested.

Keywords: disaster management; evacuation; long-term care; nursing home

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Palliative Care for Mass-Casualty Incidents with Scarce Resources

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Catastrophic mass casualty incidents (MCIs), such as pandemic influenza outbreaks or large-scale terrorism-related events, could yield thousands of victims whose needs overwhelm local and regional healthcare systems, personnel, and resources. Conditions will require deploying scarce resources in a manner that is different from the more common single-event disaster. This paper examines the role of palliative care in support of individuals not expected to survive under MCI circumstances and recommends specific actions for a coordinated disaster response plan. Semi-structured, telephone discussions with key experts and a consensus development meeting identified the issues, responsibilities and resources necessary to integrate palliative care into disaster planning and response, including: (1) the role of palliative care in a MCI; (2) triage and ensuing treatment decisions for those “likely to die”; (3) critical palliative care services, personnel and treatment settings needed; (4) pragmatic plans for ensuring appropriate training, supplies, and organizational/jurisdictional arrangements; and (5) unusual issues affecting palliative care during MCIs.

Field triage decisions must acknowledge a category of people expected to live a while, but probably not survive, and who will not have access to advanced medical care. Palliative care ensures comfort and minimizes the suffering the dying. Incorporating palliative care into disaster planning and response offers better care for those who are likely to die and may also free up resources to optimize the survival of others. Provision of palliative care services during mass casualty events should be part of current state and local disaster planning and training activities.

Keywords: mass-casualty incident; palliative care; resources

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Poster Presentations—Special Populations

(J104) Emergency Preparedness for Persons with Disabilities

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Introduction: People with disabilities largely have been excluded from emergency preparedness plans. Emergency Preparedness for Persons with Disabilities was developed to help assist such persons to deal with a variety of emergency situations.

Methods: Phase I focused on healthcare professionals who care for such persons. An eight-hour, basic, core course includes triage, transfer and transport, personal protection, patient decontamination, equipment decontamination, developing an office emergency plan, evacuation, communications, and emergency contacts. Modules for non-medical office staff include communications, staffing, personal protection, and Internet access to helpful sites.

Phase II focused on the person with disability and his/her caregivers—health professionals (visiting nurse or Home Health Aide) and families. Training modules include home preparations, preparedness kit development, and evacuation.

Results: Methods of evacuation and transportation of patients in vertical and horizontal situations were tested. Training staff noted a lack of familiarization of triage methods, patient and staff accountability, and equipment that could be used in case of an evacuation. Training modules were modified following evaluation of the above.

Conclusions: Professionals and persons with disabilities can benefit from receiving emergency preparedness training. The experience and materials presented can accomplish this task. This training can serve as a model for rehabilitation professionals and the populations they serve.

Keywords: disabled; disaster; mass-casualty incident; preparedness

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(J105) Effect of an Yogyakarta Earthquake on Pregnancy Outcomes based on Gestational Age

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Introduction: The aim of this study was to examine the effect of a 6.2 Richter earthquake in Yogyakarta, Indonesia on the prognosis of pregnancy outcomes.

Methods: Gestational age at the time of the earthquake was calculated from 1,158 deliveries in one private hospital in Bantul District between August 2005 and April 2007. The prevalence of pre-term birth, post-term birth, premature rupture of the membranes (PROM), low birth weight (LBW), and mode of delivery were counted.

Results: When the earthquake occurred, 40.7% patients already had delivered (Group A), 16.6% were in the first trimester of pregnancy (Group B), 14.8% were in the second trimester (Group C), 10.6% were in the third trimester (Group D), and 13.7% were not pregnant (Group E). There was no significant difference in age and parity among those five groups. Before the earthquake, the prevalence of pre-term birth, post-term birth, PROM, and LBW were 9.8%, 5.2%, 17.3%, and 12.8%, respectively. Following the earthquake, the highest prevalence of pre-term birth and PROM was in Group E (13.9% and 17.1%, respectively). The highest prevalence of post-term birth was in group D (6.6%). Low birth weight was the highest in Groups C and E (14.7%). Induction was the most common method of delivery in Group D (24.4%).

Conclusions: There were some differences in the prognosis of pregnancy outcomes along with the gestational age when the earthquake occurred. Pregnant women must be cared for based on these differences in order to prevent negative pregnancy outcomes.

Keywords: disaster; disaster health; gestational age; pregnancy; pregnancy outcomes; Yogyakarta earthquake

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(J106) Unique Health Effects of Terrorist Attacks on the Pregnant Female

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Introduction: Pregnant females are uniquely vulnerable to morbidity and mortality associated with trauma and from secondary exposure to environmental agents during and following a terrorist attack. For clinicians and emergency management planners, there are several specific considerations for pregnant victims of terrorist events in the planning and response phases of a terrorist event.

Methods: A review of scientific, medical, and academic literature pertaining to women and terrorist activities was performed. In addition, government reports and media accounts of terrorist attacks where women were directly or centrally involved as perpetrators were collected and reviewed. Common elements, themes, and similarities were analyzed by the investigator to determine trends in injury patterns, distribution of exposed individuals, and the acute and long-term health effects associated with the gravid female and her unborn child.

Results: Several causes of morbidity and mortality among pregnant females and their unborn children as the result of terrorist attacks were discussed in the literature. Physical trauma, toxic inhalation effects, bioterrorism considerations, and psychosocial impacts were among those discussed most often. The disaster epidemiology associated with these health events is described, as well as the strate-

gies for prevention and clinical management of this unique group of victims.

Conclusions: A greater understanding of the types of hazards and exposures which may affect a pregnant woman or her unborn child during or following a terrorist attack can assist in developing plans for medical counterterrorism. This epidemiological information can benefit both clinicians and emergency planners in anticipating the potential health and medical needs as well as planning for potential protective actions that can be implemented before or immediately following a terrorist incident.

Keywords: health effects; pregnancy; terrorist attacks; vulnerability; women

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Oral Presentations—Burns

Preparing for Burn Disasters: Effectiveness of Statewide Training

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Introduction: The Preparing for Burn Disasters program was developed to provide training to healthcare professionals who respond to disasters. The goals were to improve patient morbidity and mortality and to increase the likelihood of positive outcomes following burn disasters. Presented over a span of three years, the curriculum emphasized the challenges that a community-wide, multi-disciplinary team faces when responding to burn and fire disasters with multiple victims.

Methods: Twenty-one, one-day conferences were held. Participants completed a pre-test at the beginning and a post-test at the conclusion of each conference. Questions correlated to the objectives of the didactic portion of the conference. Questions measuring self-rated ability and confidence in burn injury management also were included. Knowledge items were compared pre- to post-test, while self-rated ability and self-rated confidence were compared using paired-samples *t*-tests.

Results: There were a total of 845 participants. Analysis showed improvement in knowledge items, ranging from 10% improvement to nearly 70% improvement. *T*-test analyses found statistically significant ($p < 0.001$) increases in both the self-rated ability and self-rated confidence of the participants.

Conclusions: Based on the overall results, the training program appears to be useful and effective in changing the participants' knowledge, ability, and confidence when faced with multiple burn victims. A drawback is that participants often do not have the opportunity to put their new knowledge into practice on a regular basis, whereby losing a component of their confidence and/or ability. An effort is in progress to provide further burn-related disaster training that is accessible to participants for review.

Keywords: burn disaster; disaster health; education; knowledge; preparedness; training

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