

lies plan to care for disabled members until help arrives. This study examined the readiness of disabled persons and their families to survive in time of calamity, and identified their concerns about the preparedness of their communities to meet their needs during a disaster.

Methods: Focus groups were held with 50 English-speaking adults with special needs and/or their family members in the southeastern United States; one-on-one interviews were conducted with 10 persons meeting the same criteria. Participants were asked to: (1) describe their concerns about caring for themselves/family members during a disaster; (2) identify steps they had taken to prepare themselves to be self-sufficient for at least three days post-event; (3) describe barriers to and facilitators of personal preparedness; and (4) discuss expectations of their communities to respond to their needs. Phenomenological interviews gave responders the opportunity to discuss their concerns in detail.

Results: Participants were largely unprepared for a disaster, and as a result, were anxious. Barriers included: (1) cost; (2) lack of space for storage; (3) insurance limitations on extra medication or supplies; (4) reliance on community or federal agencies; (5) assumptions about disaster planners' knowledge of disability needs; and (6) lack of time to think about disaster plans. Facilitation included interventions by disaster advocacy groups.

Conclusions: Health policies must target ways to help families to help themselves through education, insurance allowance for preparedness supplies, and realistic suggestions for planning. Advocacy groups must include disaster planning in routinely provided information. Inadequate preparedness places lives in jeopardy and complicates disaster response.

Keywords: disabled persons; disaster; disaster management; healthcare needs; preparedness

Prehosp Disast Med 2009;24(2):s97–s98

Long-Term Accommodation for Evacuated Residents of Nursing Homes

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The gruesome scenes in nursing homes following Hurricane Katrina horrified even hardened disaster veterans. There were many disturbing stories of nursing homes without evacuation plans, and existing plans that have never been tested. During disasters, administrators of assisted healthcare facilities and nursing homes, are faced with decisions on how, when, where and to evacuate the elderly. Who is responsible? How is this organized?

Evacuation planning can be problematic for nursing homes. Many residents cannot walk, and some may have dementia and need a secure and safe place to be relocated. This can limit the available accommodations.

Well-practiced disaster plans and all-hazards emergency management services will save many lives. Control, command, communication, and coordination are the key elements for a successful evacuation of elderly residents from nursing homes and assisted care facilities. What lessons has the world learned since Hurricane Katrina? What plans do the health department, owners and managers of nursing homes and assisted care facilities have in place

to ensure that a repeat of the poor response and planning seen during Hurricane Katrina never happens in any other part of the world.

Keywords: assisted care facilities; Hurricane Katrina; nursing homes; planning; preparedness
Prehosp Disast Med 2009;24(2):s98

Emergency Preparedness for Various Threats

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Introduction: Hospitals are required to develop preparedness to various threats. As maintaining preparedness is complicated and expensive, it might be valuable to determine the relationship between preparedness for different threats. This study investigated these relationships overall and between different components of preparedness.

Methods: A standardized tool was developed in order to evaluate the preparedness levels of hospitals to mass-casualty incidents (MCIs), mass toxicological/chemical events (MTEs), and communicable diseases. Utilizing the evaluation tool, the overall and different components of the preparedness of all general hospitals were measured. The relationships between the preparedness for the different threats was explored.

Results: A comparison of the overall preparedness for the different threats showed a positive relationship. Correlations were found between standard operating procedures (SOPs) for MCIs to preparedness for MTEs and for communicable diseases. A strong correlation was found between training and drills to the overall preparedness for MCIs, MTEs, and communicable diseases.

Conclusions: Preparedness for MCEs relates to the preparedness for other threats, which suggests that basic MCE preparedness may contribute towards achieving preparedness for other threats. Standard operation procedures appear to be an important element in the preparedness process especially for unfamiliar threats. Education and training are very important in maintaining preparedness for different threats.

Keywords: hospital; mass-casualty incident; preparedness; threat
Prehosp Disast Med 2009;24(2):s98

Exploring the Emergency Preparedness Competencies of Disaster Healthcare Responders during Hurricanes Katrina and Rita

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Introduction: Despite consensus that preparation is key to effective disaster response, little published data exists about what preparation is required or how to best accomplish the transition to disaster healthcare provider. This study identifies and analyzes critical issues related to emergency preparedness through the Meleis' Transition Framework.

Methods: In 2007, nurses and doctors who responded to Hurricanes Katrina and/or Rita were invited to complete an Institutional Review Board approved, anonymous, 544-

item, Web-based questionnaire on their response experiences. Responder characteristics, competencies performed, and issues involved in the transition to the disaster provider role were analyzed.

Results: Of 196 respondents, 78% deployed with an organized group, and 73% reported prior training in disaster response. Despite this preparation, most reported difficulty in transitioning from their usual provider role to the role of a disaster responder. Only 43% knew what role they would perform, what professional items to take (38%), or how to protect themselves (27%). Neither membership in a disaster organization, prior training, nor disaster response experience contributed significantly to positive transition outcomes. Provision of appropriate information most strongly influenced a positive and/or satisfying response experience. **Conclusions:** Although well-trained and confident in clinical skills, responders often made the transition to the disaster role without adequate support or direction. The transition outcomes identified by Meleis can be influenced positively by providing timely information. Current disaster training focuses on teaching skills, rather than how to function in a disaster setting. Further study is needed on how to more effectively prepare individuals for a disaster response.

Keywords: competency; disaster; emergency preparedness; hurricane; preparedness; transition

Prehosp Disast Med 2009;24(2):s98–s99

Mobile Virtual Disaster Beds Supporting Hospital Surge Capacity

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Introduction: Hospitals make extensive use of computer information technology (IT) systems to monitor patients, document care, process orders and display results of diagnostic testing. The use of cots, gurneys, or other improvised beds to accommodate large numbers of patients is common in hospital disaster planning. If not connected to the normal IT system, these surge beds may be limited in the ability to care for patients. In a recent emergency it required four hours to fully configure five new beds in one IT system, which is too slow for use during disasters.

Methods: As part of a comprehensive hospital disaster evaluation, methods of IT support for improvised beds were developed.

Results: One hundred virtual disaster beds in functional 25-bed, virtual nursing stations were configured in the main IT system. As the possible needed locations of the disaster beds are unclear in advance, a flexible, portable system was developed. A laptop computer configured with both inpatient and outpatient software was connected to a wireless hub, allowing it to drive a laboratory label printer and a standard printer. All hardware was placed on a mobile cart. This created a mobile, virtual patient care station. In testing the system, staff were able rapidly access patient beds, document and monitor care, order medica-

tions, therapeutic interventions and diagnostic studies, and retrieve results from any point within the hospital complex. **Conclusions:** The use of pre-configured portable wireless computers supporting virtual surge beds allows flexibility in meeting potential disaster requirements.

Keywords: information technology systems; hospitals; patients; preparedness; surge capacity

Prehosp Disast Med 2009;24(2):s99

Humanitarian Medical Aid to Developing Nations: A Recipient Country's Perspective

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Introduction: Much of the published disaster literature documents the donor viewpoint of humanitarian aid rendered to developing world disasters. This paper presents the recipient country's perspective on disaster aid interventions. **Methods:** A systematic review of published papers (n = 25,416) on disasters over the last 20 years, revealed 272 papers that addressed humanitarian aid to developing countries. Accountability, cost:benefit analysis in terms of burden of disease, evidence-based humanitarian medicine, and the Sphere Handbook's minimum standards of humanitarian assistance were criteria used for evaluating international aid.

Results: Of the 25,416 disaster papers, 1.08% described developing world disasters, and these primarily focused on rescue missions and foreign field hospitals. Within this subgroup, only 15.3% papers, were written by local, developing world authors. Inadequate infrastructure, personnel problems, lack of coordination between agencies, corruption, social issues, and language difficulties were reported in these papers. The majority of the papers were researched during the acute phase, a few during rehabilitation, and fewer were follow-up studies. The assessment of humanitarian intervention in terms of money spent and health outcomes were measured, with due consideration to ethical ideals of disaster aid. Disasters caused by natural hazards were more attractive for relief and rescue, than complex emergencies dealing with conflict and riot situations.

Conclusions: Donor country reporting of developing world disasters represents a publication bias in disaster literature. It seems to imply that the global disaster disease burden is being met by international aid workers. It is acknowledged that local agencies meet the acute healthcare needs of the disaster-affected population. It would be prudent to harness incoming international aid in identified areas of need, like disaster research, follow-up studies and capacity building; rather than field hospitals, inappropriate technological aid, and rescue missions. Systematic research and documentation, disaster protocols, forging South-South collaborations, instituting the "all-hazards" model and help with long term rehabilitation are possible priorities for the developing world disaster agenda.

Keywords: capacity; developing country; humanitarian aid; international; medical; perspective

Prehosp Disast Med 2009;24(2):s99