

failure. Acute kidney injury (AKI) is preventable with early management. Insight into factors determining the population-at-risk is indispensable to allow for adequate logistical planning, a prerogative for success in disaster management. Many factors may affect the frequency of AKI: hampered rescue and transport possibilities; destroyed medical facilities; availability of sophisticated therapeutics; and the structure of the buildings. Dialysis therapy saves lives that otherwise would be lost. Currently, the primary problem is organizational. If huge catastrophes occur, complex therapeutic options must be offered to a large number of victims. **Methods:** A systematic review was conducted through meta-narrative mapping to create a repository of literature of disaster acute kidney injury management. Using a broad-based search strategy covering electronic databases (Cochrane, MEDLINE, EMBASE, etc.) and searching journals reporting on disasters, prehospital care, nephrology, dialysis and transplantation, and organizational management. The findings were grouped under themes and a picture was developed using contributions from different research approaches.

Results: The results will be presented at the Congress.

Conclusions: Awareness of evidence related to epidemiology, diagnosis, therapeutics and organizational issues, and development of guidelines in the area of disaster nephrology is critical to allow adequate logistical planning that is vital for this cohort of patients to prevent significant morbidity and mortality.

Keywords: acute kidney injury; acute renal failure; crush syndrome; disasters; patients

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(B17) How Many Resources or Telephone Lines are Needed during a Mass-Casualty Incident?

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There are six emergency operation centers in Taiwan. During the response phase of a mass-casualty incident, the responsibilities of these operation centers include coordinating health-care resources and collecting the names of casualties. In October 2007, there was a mass-casualty incident in a mountainous area of central Taiwan. The event involved three emergency operation centers. There were 38 casualties in total. As the event occurred in a mountainous area, few medical resources were available.

All the patients were transferred to a hospital approximately 100 km away. The total response time was 16 hours. Five personnel were assigned to coordinate patient transportation, prepare the hospital to receive multiple casualties, and collect the names of the casualties. After the event, all of the telephone calls from an electronic recording system were reviewed in order to enhance future responses. After the event, a questionnaire was distributed to collect operational problems.

There were 205 total telephone calls during the event. Forty-six percent of phone calls were to confirm the names of casualties.

Between operators, there was a difference in the duration of each telephone call. In the post-event questionnaire,

all five operators noted they were “very busy” in the first four hours of the event, and the major problem was communication between operators. After this event, pre-designated worksheets and a white board for inter-operator coordination was designed.

Keywords: disaster management; emergency operations center; event; resources; telephone operator

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(B18) Development of Command and Control System and its Education of Disaster Medical Assistance Teams in Japan

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In 2005, the Disaster Medical Assistance Team (DMAT) training system began as a national disaster management measure. There were 500 DMATs, >2,000 healthcare providers, and 1,000 logisticians that were dispatched to the Chuetsu-oki earthquake in 2007 and the Iwate-Miyagi earthquake in 2008. A Japanese DMAT is characterized as a small team of five with emergency vehicles to go to the affected areas. The first team arrived in the affected area within three hours, and >40 teams gathered in the base hospital within 12 hours. A clear chain of command is critical in the effective use of these limited medical relief teams during the disaster, however, the DMAT system in Japan does not control the command and coordination of the disaster response organization, and thus, has an ambiguous strategy. The DMATs have been only trained in triage, medical procedures, and air transport management. There has been no training on the chain of command to facilitate organization. A two-day training course on the chain of command and control was developed last year. The training mainly consists of tabletop exercises with some mnemonics and discussion; 200 members have been certified.

Keywords: command and control; Disaster Medical Assistance Team; Japan; organization; training

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(B19) Assessment of Hospital Disaster and Non-Operational Defense Maneuver Performed in Imam Hossain Hospital

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Iran is ranked tenth in the world and fourth in Asia as the country most affected by disasters. Tehran, the capital, is the heart of the country's disaster planning. In this study, the training exercises of hospital personnel (including nursing, medical, administrative, and executive staff) were assessed. The exercises were based on scenarios, and personnel were presented with problems (regarding patients and administration) that considered the operational maneuvers prac-

ticed at Imam Hossain Hospital. In the maneuvers, clinical cases first are delivered to the nursing sector for triage, and the triaged cases are diagnosed; remedial actions were described to the professors in different specialties. Problems were directed toward the administration for decision-making. The results of the exercises from the nursing, clinical, and administrative personnel were analyzed.

In addition to assessing the results, the basic design, the scenario and triage protocol, several medical protocols and methods to improve the executive process are being discussed.

The lack of medical protocols and proper training of hospital personnel were basic reasons for the errors in triage, diagnosis, treatment, and operations.

Keywords: disaster health management; exercise; hospital personnel;

Iran; maneuver; training; triage

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(B20) Rescue Missions and Operation of Chinese International Search-and-Rescue Teams following Several Foreign Earthquakes

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Objectives: To summarize the medical practice organized by the Chinese International Search-and-Rescue teams (CISAR) during seven deployments of overseas earthquake rescue missions and discuss rescue modes during a disaster. **Methods:** Previous medical rescue missions and their characteristics were analyzed by reviewing job records.

Results: Medical rescue missions were classified into three stages according to the features of earthquakes. The priorities of primary medical work were performing a 24-hour search of the affected area, group-by-group, to rescue survivors and provide first aid to the injured using mobile hospitals. The priorities of interim medical work consisted of a medical tour, hygienic disease prevention, combined transfer of severely injured victims from remote areas, and continuing the preparation of mobile hospitals in camps. The priorities of the medical work in the later stage of the response were facilitating the recovery of local medical institutions, residing in medical agencies, organizing the Chinese nursing sector, donating medicine and devices, and coordinating reception and normal treatment.

Conclusions: Foreign search-and-rescue teams can be deployed to the full extent in limited time to serve the needs of victims of disaster.

Keywords: Chinese International Search-and-Rescue; disaster health management; earthquake; medical care; rescue

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Oral Presentations—Research

Literature Review of Disaster Health Research in Japan

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Introduction: Due to its geographical location in the Pacific Ring of Fire, Japan has a long history of disasters.

The frequency of earthquakes in recent years has significantly influenced disaster health research in Japan. This paper presents a systematized review of disaster health research performed in Japan, and discusses trends in disaster health research, particularly in nursing, during the last eight years.

Methods: The most commonly used database in Japan, Ichushi version 4, was used. The keywords and sub-keywords: disaster, disaster nursing, practice, education, research, ability, education, response, emergency, licensure, capability, function, prevention, planning, were chosen. Combinations of these keywords were used to identify relevant literature.

Results: A total of 232 articles were reviewed. The number of research papers has increased gradually since 2001, and peaked in 2007. The most common search category was “disaster nursing and research”. The second most common was “disaster nursing, education”. These categories also had a high number of publications.

Conclusions: The recent earthquakes in Japan has accelerated researchers to implement disaster nursing concepts into practice and nursing curriculum. However, the context of disaster nursing tends to be limited during natural disasters, and few studies have discussed research methodology in disaster nursing.

Keywords: disaster nursing; Japanese; literature review; methodology; research

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Multiple Injury Profiles—Applications for War Injuries

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Introduction: Casualties of war often sustain simultaneous injuries to multiple body regions. Standard methods to estimate the increased threat to life from multiple injuries have been in use for years, yet uniform methods for presenting the details of such injuries only recently have been applied. The use of these methods is crucial for estimating the true characteristics and burden of injury. This presentation will introduce the multiple injury profile (MIP) methodology and demonstrate its useful application for war injury epidemiology.

Methods: Abbreviated Injury Scale scores indicate which body region was injured. Multiple injury profiles are defined by a vector in which the first letter indicates the presence of an injury in that region and a hyphen for no injury in that region. The profile becomes a categorical population characteristic that can be studied and analyzed. Data from the second Lebanon war was used to demonstrate the benefits of the application of this approach.

Results: The use of multiple injury profiles enabled the production of a more comprehensive picture of injuries by recording injuries that previously were unregistered (being “secondary” or concealed as part of “multiple”). Multiple injury profiles demonstrate that certain combinations of injuries are more deadly. These findings suggest that the