

Abstracts of Scientific and Invited Papers

17th World Congress for Disaster and Emergency Medicine

(A1) The May 12, 2008 Wenchuan Earthquake: A Primer on China's Emergency Responses and Recovery Planning

L. Svirchev,¹ Y. Li,² L. Yan,² C. He,³ M.B. Lin²

1. School of Peace and Conflict Management, Victoria, Canada
2. National Key Laboratory of Oil and Gas Reservoir Geology and Exploitation, Chengdu, China
3. Vancouver, Canada

Background: This presentation summarizes our ongoing hybrid sociological-geological field research into the May 12, 2008 Wenchuan earthquake. In this extreme geo-disaster, mortality was 69,226, with 274,643 injuries, and 17,923 missing. The human toll was accompanied by significant destruction of the natural environment and the economy, estimated at US\$ 176 billion. A 300 km long surface rupture occurred in the Longmen Mountains along its margin with the Sichuan Basin.

Discussion: This disaster was caused by the relationships among (1) towns built in on or in proximity to fault lines, (2) the low earthquake-resistance of residences, schools and hospitals, and other buildings, and (3) the concentration of population distributed along rivers lying below steep-sloped mountains. Mortality and devastation were compounded by post-earthquake landslides. The Chinese central government started a national-level response within 2 hours, upgrading it to the highest national emergency level within 10 hours. Most lives were saved by local people. Military rescue units were activated within minutes of the earthquake, and regional militia, local and provincial units such as the Sichuan Seismological Bureau self-activated immediately. By day-two, 20,000 rescue and engineering soldiers had been deployed. Over 15 large medical treatment, epidemic prevention, and psychological intervention teams responded and more than 10 million volunteers took part in relief activities. In spite of mobilization of the nation's resources, emergency relief was frustrated by formidable obstacles such as cloud cover, a destroyed ground transportation network, loss of communication, and continued geo-hazards in the form of landslide-dammed rivers which threatened large downstream urban centers. Expert national planning for recovery began five days post-earthquake; the plan was promulgated by national law in September, 2008. By the second anniversary of the Wenchuan earthquake, most school and residential construction was completed in earthquake-resistant areas.

Prehosp Disaster Med 2011;26(Suppl. 1):s1
doi:10.1017/S1049023X11000185

(A2) Strategies to Recover the Health Care Capacity Post Earthquake in Chile

C. Bambaren

Public Health, 33, Peru

Background: The earthquake that struck Chile on February 27th, 2010 produced profound damage of hospital services with 4249 bed lost especially in the regions of Maule and Bio. The capacity of the health was critically reduced in ability to assure health access to affected people by the disaster.

Discussion of Interventions: The first strategy to maintain health services was the deployment of 18 field hospitals from Chilean organizations (Army and Air Force), international organizations and foreign governments. This measure allowed for 533 beds and 16 surgical blocks in the first weeks. There were 14 field hospitals until November. Taking into account the beginning of the winter season, the national government set up another sort of strategy to increase the capacity of the health care facilities: § Strengthening of hospitals without damage that were close to the disaster area. These hospitals were used as referral centers. § Purchasing of 708 beds from the private health sector. § Habilitation of free spaces to be used for inpatients. § Increasing the capacity of home care health programs to release beds. § Construction of some small temporary units to admit patients. § Small-scale interventions to repair damages in hospitals. § Extending the work time until 16 hours in the primary health care facilities. § Improving of the efficient of the using of human and physical resources. § Restructuration of the hospital network that allowed adding 300 new beds.

Results: The ministry of health recovered more than 94% of loss beds and 92% of surgical blocks through July. However, it is necessary to identify US\$ 2720 million for reconstruction program and to establish a national strategy of safe hospitals in order to reduce the future costs of the recovery of damaged health care facilities. *Based on information from PAHO – Chile.

Prehosp Disaster Med 2011;26(Suppl. 1):s1
doi:10.1017/S1049023X11000197

(A3) Health Care Facilities Affected by the Earthquake in Chile

C. Bambaren

Public Health, 33, Peru

Introduction: On February 27, 2010, a 8,8 MW earthquake struck the central and southern coast of Chile, that was followed by a tsunami that destroyed some cities such as

Constitution, Ilaco, Talcahuando and Dichato. The national authorities reported 512 dead and 81,444 homes were affected. It was the one of the five most powerful earthquakes in the human modern history. The most affected regions were Maule (VII) and Bio (VIII).

Results: The impact of the quake in the health sector was enormous especially on the health care infrastructure. The preliminary evaluations showed that 18 hospitals were out of service due severe structural and no-structural damages, interruption of the provision of water or because they were at risk to landslides. Another 31 hospitals had moderate damage. The Ministry of Health lost 4249 beds including 297 (7%) in critical care units. Twenty-two percent of the total number of beds and thirty-nine surgical facilities available in the affected regions were lost in a few minutes due to quake. At least eight hospitals should be reconstructed and other hospitals will need complex repair.

Conclusion: The effect of the earthquake was significant on hospital services. It included damages to the infrastructure and the loss of furniture and biomedical equipment. The interruption of the cold chain caused loss of vaccines. National and foreign field hospitals, temporary facilities and the strengthening of the primary health care facilities had been important to assure the continuation of health care services. *Based on information from PAHO – Chile.

Prehosp Disaster Med 2011;26(Suppl. 1):s1–s2
doi:10.1017/S1049023X11000203

(A4) Emergency Health Interventions in Earthquakes: Red Cross Experience from Haiti and Chile, 2010

P. Saaristo, T. Aloudat

Health Department, Geneva 19, Switzerland

On 12 January 2010, the fate of Haiti and its people shifted with the ground beneath them as the strongest earthquake in 200 years, and a series of powerful aftershocks demolished the capital and multiple areas throughout the southern coast in thirty seconds, leaving some 220,000 people dead, and 300,000 persons injured. On 27 February 2010, at 03:35 hours local time, an earthquake of magnitude 8.8 struck Chile. As a consequence, the tsunami generated affected a coastal strip of more than 500 kilometers. Approximately 1.5 million people were affected and thousands lost their homes and livelihoods. The emergency health response of the International Red Cross Movement to both disasters was immediate, powerful and dynamic. The IFRC deployed seven emergency response units (ERU) to Haiti: one 150-bed referral hospital, one Rapid Deployment Emergency Hospital, and five basic health care units. One surgical hospital and two Basic Health Care Units were deployed to Chile. The ERU system of the IFRC is a flexible and dynamic tool for emergency health response in shifting and challenging environments. Evaluations show that the system performs well during urban and rural disasters. Despite a very different baseline in the two contexts, the ERU system of IFRC can adapt to the local needs. As panorama of pathology in the aftermath of an earthquake changes, the ERU system adapts and continues supporting the local health care system in its recovery.

Prehosp Disaster Med 2011;26(Suppl. 1):s2
doi:10.1017/S1049023X11000215

(A5) Search and Rescue Underestimated

M.A. Gruskin

Fire Department, Gainesville, United States of America

Background: Search and rescue plays a major role in today's society. Whether lost at sea, stranded in a remote area, or trapped in a confined space, countless rescuers and volunteers will attempt to find you and get you to safety.

Discussion and Observations: Rescue teams consist of highly trained professionals including firefighters, EMT's, paramedics and other local volunteers who are willing to risk their lives to help others. Special teams and robotics were sent into ground zero after 9/11, locating and providing immediate extrication to those who were injured. The U.S Coast Guard's search and rescue efforts during Katrina were crucial saving countless lives in New Orleans.

Prehosp Disaster Med 2011;26(Suppl. 1):s2
doi:10.1017/S1049023X11000227

(A6) Animal Search and Rescue

D. Green

Emergency Relief - Disasters, Yarmouth Port, United States of America

Background: In the United States, animal search and rescue (ASAR) is becoming a recognized component of Search and Rescue (SAR).

Discussion and Observations: Urban Search and Rescue (USAR) teams have long recognized the importance of having trained animal rescuers available to handle the animals that are often with humans seeking rescue. Animals are such an important part of most U.S. families, that in many cases, if the animal isn't included in the rescue efforts, the human will refuse to evacuate. The International Fund for Animal Welfare received a grant in 2010 to develop an ASAR curriculum and to train two Type II ASAR teams in Mississippi and Louisiana. This presentation will provide an overview of that curriculum and the courses that were developed for the unique tasks, skills, and equipment needs for animal search and rescue.

Prehosp Disaster Med 2011;26(Suppl. 1):s2
doi:10.1017/S1049023X11000239

(A7) Beyond Illness and Trauma: A Study of the Interface between Disaster Mental Health and Recovery

J. Joseph¹, S. Jaswal²

1. Jamsetji Tata Centre for Disaster Management, 022, India
2. School of Social Work, 022, India

Today there is adequate research evidence at national and international level regarding the health and mental health consequences of disasters. The realization of the larger impact of mental health on the recovery process has been instrumental in prioritizing mental health and psychosocial well-being of affected populations in recent years. Traditionally the bio medical models were used to understand the disaster mental health outcomes, however over the last two decade a gradual change is visible in the understanding of the mental health and psychosocial consequences of disasters. It is more inclusive of varied expressions of distress and the services to address the same. A review of various disaster mental health research and interventions documented since 2001 reveals that most