Team, Japan International Cooperation Agency

1. History of Emergency Disaster Relief by the Government of Japan

Emergency disaster relief conducted by the Government of Japan were started back to the late 1970s when medical teams were dispatched to assist in the relief of Cambodian refugees flocked along the Thai-Cambodian border. In September 1987, the Japan Disaster Relief Team Law (the JDR Law) was promulgated under which disaster relief activities by the Government of Japan were systematized properly. The JDR Law was amended partially in June 1992. Since 1987, the Japan International Cooperation Agency (JICA) dispatched 46 disaster relief teams, and provided relief supplies 194 times to various disaster-affected countries around the world.

2. Framework of International Emergency Relief Operation by JICA

The Emergency Disaster Relief Program is comprised of three components: 1) Capital Assistance; 2) Personnel Assistance; and 3) Material Assistance. The JICA is responsible for conducting Personnel Assistance and Material Assistance under the instructions from the Ministry of Foreign Affairs. Capital Assistance is carried out by the Ministry of Foreign Affairs.

3. Process of Relief Operations

When a "large scale" disaster occurs in a country abroad, the Embassy of Japan and the JICA Office in the afflicted country immediately start collecting relevant information. Based on the "request" from the government of the affected country, the Ministry of Foreign Affairs consults with the Ministry of Finance to decide the type and size of the relief operation. After the consultation, the Ministry of Foreign Affairs gives orders and/or instructions to take necessary procedures for dispatching a JDR team and/or providing relief materials.

4. Dispatch of JDR Teams

JDR teams are categorized as rescue teams, medical teams, or expert teams. After a request is received from the government of the affected country or from an international organization, either a single-category or an inter-category team is dispatched in accordance with the type and magnitude of the disaster.

1) Rescue Team — The main tasks of rescue teams are to search for and rescue victims of a disaster, provide first aid and transfer the victims to a safety place. Members of rescue teams are assigned from the: 1) National Police Agency; 2) Maritime Safety Agency; 3) Fire Defense Agency; and 4) Defense Agency.

2) Medical Team — Medical teams consist of doctors, nurses, and medical coordinators who previously have expressed interest in taking part in JDR teams and have been registered with the JDR Secretariat. The main task of the medical teams is to provide medical treatment for the victims of disasters.

3) Expert Team — The tasks of expert teams are to take expedient measures in the wake of disasters and to give advice on how best to recover from disasters. Teams are made-up of experts recommended by related government ministries and agencies according to the type of disaster.

5. Provision, Procurement and Storage of Materials

Relief materials such as blankets, tents, electrical generators, and medical supplies and instruments are provided for relief purposes and to assist in the process of recovery. The JICA has five warehouses that are located at Narita, Washington, D.C., Mexico City, Singapore, and London for stockpiling relief supplies. Besides, the JICA procures medical supplies from UNICEF's Procurement Division in Copenhagen, Denmark.

6. Conveyance of Emergency Relief Materials Donaed by the Private Sector

In the case of a large-scale disaster for which relief supplies still are required even after the provision of relief supplies by the Government of Japan, the JICA appeals for donation of relief supplies to the local governments, non-governmental organizations (NGOs), and individuals through its branch offices in Japan. The JICA bears the transportation costs for the supplies.

7. Study and Training

For enhancing the effectiveness in the emergency relief activities, the JICA has several training courses and seminars for registered members of a JDR Team. In these training courses and seminars, participants develop knowledge and skills related to the on-site activities that will be helpful to them.

8. Follow-up Studies on Emergency Aid (distribtion of relief supplies)

The JICA dispatches follow-up study teams on emergency aid provided by the Government of Japan, especially to ensure the effective future implementation of the distribution of relief supplies.

Keywords: assistance; disaster; emergency; equipment; evaluation; follow-up; Japan; Japan Disaster Relief; Japan Disaster Relief Team Law; Japan International Cooperation Agency (JICA); operations; international; materials; non-governmental organizations; recovery; relief; supplies; teams; training; transportation

S3-4

Global Concord for the Mitigation of Acute Deaths in Disaster: Injury Prevention and Mitigation Strategies in Earthquakes

E.A. Pretto, Jr., MD, MPH

Associate Director, Safar Center for Resuscitation Research, and Associate Professor, Department of Anesthesiology/CCM, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania USA

The first 24h following sudden-impact disasters are considered critical for reducing deaths and preventing long-term disability. Since 1989, we have investigated the mechanisms of injury and the pathophysiology of acute deaths in earthquakes, in order to identify risk factors, prognostic indicators, and to develop better intervention strategies to increase survival. Due to the lack of scientific data on these prehospital deaths, we have employed qualitative methods to obtain information from secondary sources.[1] Since time is a critical risk factor for death, we have classified acute deaths into two broad

temporal categories: i) Instant deaths, occurring within three hours of impact; and ii) Protracted or slow deaths, occurring within 24 hours.

Prior to the Great Hanshin-Awaji earthquake, a handful of autopsies of acute deaths revealed the pathophysiology of dying to be asphyxia. The mechanisms of injury are severe head injury, total body crush, or a combination of both, caused by falling debris from building collapse. There is a clear association between building type and degree of collapse with death, and a less understood relationship between building type and collapse pattern and severity of injury. In our experience, the majority of protracted deaths are found among victims entrapped under light to moderately heavy rubble in partially collapsed wooden or unreinforced masonry structures.[2] This situation produces multiple trauma and on occasion severe crush injuries of chest, abdomen, or extremities.

Severe prolonged crush of a non-vital body parts such as the extremities leads to traumatic shock, severe contusion injury, hemorrhagic or hypovolemic shock, and crush syndrome. Also, delayed extrication of these victims can lead to acute death upon release of the crushed extremity due to hyperkalemia, hypovolemic shock, and/or pulmonary edema. In general, critically injured untreated victims die slowly. More important, analysis of protracted deaths indicates many are salvageable with advanced life support.

A review of the large autopsy data set from the Great Hanshin-Awaji earthquake confirms our findings.[3] Our data also indicate that search and rescue and advanced life support are not readily available to most critically-injured earthquake casualties because of delays in the initiation of the life support chain and in definitive care. This is due in part to the chaos following a disaster.[4] We believe this is caused by the lack of rescuers trained in basic and advanced life support, and in basic extrication techniques, as well as logistical barriers to well-organized response.

In light of these findings, we conclude that in order to increase survival among acute deaths, we must achieve global concord in certain critical areas. Injuries can be cost-effectively reduced with preventive anti-seismic building design and construction instituted prior to the event. We know which building types and collapse patterns are lethal. We also need to know which are sublethal and contribute to increasing the likelihood of severe injury and protracted death. We need to train more people in life-supporting first aid and basic extrication techniques. We must improve disaster planning and preparedness at the local and state levels by substituting "paper" plans with information systems to coordinate the management of large numbers of casualties. In disaster-prone developing areas, we must link development with disaster mitigation and increase community resistance to disasters. This can be accomplished by strengthening hospitals and creating community-based emergency medical services systems.

Keywords: asphyxia; buildings, collapse patterns of; community-based emergency medical services; death, causes of; disasters; earthquakes; extrication; life-supporting first aid; patterns of death; planning; preparedness

References:

1. Pretto E, Angus D, Abrams J, et al: An analysis of prehospital mortality in an earthquake. *Prehospital and Disaster Medicine* 1994;9(2):107–124.
2. Angus D, Pretto E, Abrams J. Epidemiological assessment of building collapse pattern, mortality, and medical response after the 1992 earthquake in Erzincan Turkey. *Prehospital and Disaster Medicine* 1997;12(3).
3. Aoki N, et al: Cost-effectiveness of disaster response. Review of 3,250 deaths from the Great Hanshin-Awaji earthquake. (unpublished data)
4. Comfort L, Tekin A., Pretto E, Kirimli B, Angus D: Time, knowledge, and action: The effect of trauma upon community capacity for action. *Intl Journal of Mass Emergencies and Disasters* 1998;16(1):73–91.

General Session XXI

Education and Training III

Thursday, 14 May, 10:20–11:35 hours

Chair: ***Arturo M. Pesigan, Yoshikura Haraguchi***

G-103

How Does Japan Prepare Medical Professionals to Cope with Disaster Management and Relief?

Shinichi Nakayama; Hitoshi Matsuda; Yoshitomo Itoh; Noboru Ishii
Department of Disaster and Emergency Medicine, Kobe University School of Medicine, Kobe, Japan
Kazuko Iwata; Ryuko Ogino; Sumie Kaneko; Kazuo Kawasugi; Tetsuya Sakamoto; Mituo Shindoh; Kitoji Takuhiro; Toshinori Muyaichi; Yoshihiro Yamaguchi; Shigeki Asahi

Introduction: Japan has a great deal of experience and technical know-how concerning disasters as a vulnerable country to natural disasters. However, in 1995, the Hanshin-Awaji Earthquake taught us the need for more effort to cope with disaster. The Japan Medical Team for Disaster Relief (JMTDR) was established in 1982, with the aim of engaging in international medial emergency relief operations when a major natural disaster occurs. Volunteer doctors and nurses are registered to the JMTDR after taking a training course on emergency disaster relief. The Ministry of Health and Welfare of Japan also proposed a training course on international emergency management for medical professionals in 1994. The objective of this course is recognition of the importance of training medical professionals to deal with disaster management.

Training Course On International Emergency Management: Twenty medical doctors, six nurses, one midwife, and one pharmacist have participated in the four training courses under coordination by the Japan International Corporation of Welfare Services (JICWELS), in cooperation with World Health Organization (WHO). Each course was divided into a session in Tokyo, Japan and an overseas session. Myanmar, Costa Rica, Kobe, Barbados, Haiti, and Philippines were chosen for the field visits. Instructors were professionals in disaster relief, and were invited from Southern America, Switzerland, and Philippines. The topics included: emergency relief, disaster preparedness, logistics, disaster medicine, public health, and so forth. English was used as the communication language.