

Of the eight medical doctors and two nurses who participated in the fourth training course, the nurses now are taking an active part in Vietnam and Laos. The doctors have not found any opportunities to work overseas, but have started their activities in education of medical students and training of medical professionals from Disaster Medicine Operation Units to provide medical support to cope with future disasters in Japan. The results of a survey of the participants will be introduced in detail. Funding for this program for next year unfortunately is not planned.

**Conclusions:** A training program for international emergency management and disaster relief is essential and should be continued for Japanese medical professionals. Such training will contribute not only to their domestic disaster relief, but also for international disaster relief to share Japan's experience with natural disasters.

**Keywords:** Disaster Medicine; earthquake; Hanshin-Awaji Earthquake; international emergency management; field experience; international disaster relief; Japan International Corporation of Welfare Services; Japan Medical Team for Disaster Relief

#### G-104

##### Disaster Training for Medical Students

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Disaster training is necessary as part of preparing personnel involved in managing untoward tragedies. In Kuala Lumpur, Malaysia, the medical schools of Universiti Malaya and Universiti Kebangsaan Malaysia have been teaching and training medical students in disaster management. The need for early introduction of this content was recognized, and as part of emergency medicine posting, a specific lecture is dedicated to this purpose. Moreover, whenever the opportunity arises, medical students have been included during tabletop exercises, practical mock drills, disaster seminars, and conferences.

From our experience, we conclude that exposure to disaster training at undergraduate level is very timely and beneficial. Perhaps, this should be considered as part and parcel of Emergency Medicine posting in undergraduate medical curricula.

**Keywords:** curricula; disaster training; disaster drills; disaster exercises; medical education; tabletop exercises

#### G-105

##### Teaching Disaster Medicine in Belgium

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The first course on Disaster Medicine in the Flemish part of Belgium started in October 1988 and lasted eight days. It was a concerted action between the Military Medical Service and the University of Louvain. The aim was to train medical doctors in the management techniques used and pathologies seen during disasters. Since then, about 30 persons per year have graduated in Disaster Medicine. In order to follow evolutions in the country and in medical science as well, we adapted the organization and the content of our course.

After the first edition, it became clear that education of nurses was of paramount importance and the NVKVV, a professional nursing organization, joined us as co-organiser. From that moment on, the course also was accessible for officers from the police, fire brigades, Red Cross, and army.

In 1990, the Ministry of the Interior imposed a uniform disaster plan for all municipalities in Belgium. This incited both university courses on Disaster Medicine (French and Dutch part of the country) in 1991, to elaborate with all intervening corps, a uniform doctrine for medical disaster management in our country.

In 1992, the Scientific Committee of the International Society of Disaster Medicine edited a curriculum for education and training. Since 1997, we adapted our education program to comply with this international standard. Every candidate must start with the basic course and must choose at least two of four specialized courses: hospital disasters, technological disasters, medical techniques, and management. In cooperation with other institutions, we can offer a course on psychosocial disaster relief and on humanitarian operations.

**Keywords:** Belgium; Disaster Medicine; education; military; planning; psychosocial; standards; training; universities

#### G-106

##### TRIAGE! TRIAGE!! TRIAGE!!! (NOT TREATMENT!!)

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Better management of a situation through effective utilization of staff/manpower and following the triage rules will facilitate the flow of casualties. Managing a large number of casualties in short period of time is not a good experience nor is it easily handled.

Triage, a French word, means to sort and to choose when the need for immediate medical care of patients exceeds the supply of medical manpower. The aim is to maintain a safe environment within limitations by prioritizing the patient's individual needs and providing care through the optimum use of the available resources. It has

been adopted widely in the practice of Emergency Medicine; however, many staff cannot function properly when they arrive on disaster sites with large numbers of casualties.

**Initial Triage** — provides a quick determination of triage categories. Very limited life-saving procedures could be performed. Instead, try to evaluate the needs of as many victims as possible. Do not stop and be preoccupied with one patient, BUT move through the scene so as to complete the triage process. If possible, It is advisable to triage by eye using one's own sense and obtaining the chief complaint. Therefore, real emergency patients will be spotted and identified without delay.

**Secondary and Continuous Triage** — after assessing available manpower, proceed with and "AMPLE" history, "ABCDEF" to "head-to-toe assessment". Evaluation and reassessment should be done. Therefore, new triage categories really will reflect changes in the victims' condition. The "START" (Simple Triage and Rapid Treatment) plan, one of the commonly used field triage tools, should be adopted and followed. The essence and spirit should be followed when managing such situation. It streamlines the triage process and makes the best use of one's sense when triaging.

**Evacuation** — First, do not delay transportation of victims for treatment off scene to an area like a casualty clearing station or casualty treatment center except for immediate life-saving procedures. This is the most common mistake made by deployed hospital personnel.

Repeated exercises will help the team members to remember these rules. Less shock reaction will be noted when a real scene is encountered, and the triage process can proceed smoothly.

**Keywords:** casualty clearing; disaster, drills; evacuation; exercises; rules; START; training; transport; triage

#### G-107

##### Triage Tags and Disaster Drills — Analysis of Tags Used in Two Disaster Drills

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**Objective:** To verify the effects of education and training on the triage skills of medical personnel.

**Background:** Since there have been several different kinds of triage tags used in Japan, a standardized tag was developed in 1996. Since then, the standardized tag has been adopted by many disaster-related organizations, and has been used in disaster drills. But, it still is necessary to verify how well these tags are used and the importance of Disaster Medicine education for responders.

**Method:** Triage tags that were used in two disaster drills were checked and analyzed on their entry status and the proper usage. The first drill was executed by the Japanese Association for Disaster Medicine in 1997, and the Hyogo Prefecture executed the second one in 1998. Prior to the simulation drills, two lectures (principles of

triage and details on the usage of triage tags) were given to trainees of the former drill, and only one lecture (principles of triage) was given to the latter. Mimic patients were moulaged and the allotted time for the triage for each patient was approximately 1.5 minutes at both drills. At the latter drill, attendants to the moulaged patients disturbed the trainees by shouting and crying, which made this drill much more realistic.

**Result:** In contrast to the entry status of the triage tags used at the former drill, that of the latter was extremely poor. The difference between the entry status of tags used in these two drills was made by a lecture of about 40 minutes and the panic situation of the trainees yielded by the patients' attendants.

**Conclusion:** 1) A lecture on the principle of triage was not sufficient for the trainees to be able to use the triage tags properly; and 2) Disaster drills should be done as realistically as possible in order to train the trainees properly.

**Keywords:** disaster drills; education; exercises; triage; triage tags

#### G-108

##### Triage Guidelines for Crush Syndrome Patients in Large Earthquakes Using Logistic-Regression Models

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**Introduction:** Triage activity is one of the most important, but difficult components of the medical response in a disaster. Although experienced emergency physicians should do triage, such physicians may not be readily available in a disaster situation. We developed a predictive model of crush syndrome to provide triage guidelines for non-experienced physicians, emergency medical staff, nurses, and any other medical practitioners coping with an unexpected natural disaster.

**Methods:** We used data from 372 crush syndrome patients reported in a previous paper. Twenty risk factors (except for the peak CK that is not available at initial triage) were employed to develop the predictive model. We used induced hemodialysis and/or death as an outcome. We developed two types of prediction models using logistic-regression analyses. The first model was calculated using only parameters measured without specific devices in the disaster field (initial triage model).