than 6,000 deaths. It was an unexpected, urban-type, earthquake disaster which terrified many persons across the whole world as well as in Japan. We have learned a lot from this great earthquake.

On 08 May, 1996, we began “Sai-no-Kuni Rescue Teams”—teams with emergency medical technicians and doctors to save and protect the citizens' life and property in case of large-scale disasters such as earthquakes, natural disasters, accidents, etc., within this prefecture. Their emergency rescue and EMT activities should begin immediately after the outbreak of a disaster. Though there are similar organizations, such as Emergency Fire Rescue Teams organized by Fire Department of the Ministry of Home Affairs or Fire Rescue Mobile Task Force started by Tokyo Fire Department, Sai-no-Kuni Rescue Teams are the first in Japan organized with a medical task force from the beginning of the plan. First, the whole prefecture is divided into four blocks, each has Rescue Teams, Ambulance Teams, and Fire-Fighting Teams. Besides, the prefecture has Helicopter Teams and Medical Teams. Rescue Teams, Ambulance Teams, and Fire Fighting Teams are organized by the fire service headquarters of each block registered to the prefecture (total = 182 members). Helicopter Teams are organized by Saitama Anti-Disaster Aviation Corps (total = 18 members with 2 helicopters), and Medical Teams by a corporate juridical person, Saitama Medical Association (total = 15 members or doctors and nurses, etc.).

This is Japan’s first comprehensive disaster service organization as fire service and medical organization will assemble at the outbreak of large scale disasters for rescue, ambulance, and medical activities combined together in the air and on the ground.

**Key Words:** disaster; helicopters; medical doctor; rescue

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**Session 2A: Trauma**

Audimex Chairpersons:

S. Fitzel (Austria)

Y.T. Wang (Peoples Republic of China)

**Ultrasoundography in the Evaluation of Hemoperitoneum in War Casualties**

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**Objective:** The objective of this study was to determine the sensitivity and specificity of emergent ultrasound examination in detecting hemoperitoneum, comparing the results that were obtained by three different specialists (radiology, surgery, anaesthesiology) with presumably the same ultrasoundography experience.

**Methods:** A total of 242 poly-traumatised adult patients suspected of blunt abdominal trauma were examined by ultrasonography at an emergency center. All examinations were performed by three equally experienced examiners (>3 years of experience and >1,000 examinations) of different specialization using the same portable ultrasonic scanner (EsaoteBiomedica, C7000; 3.5 MHz). Examination time was limited to 5 minutes with scanning of typical places (Morison's, Douglas, and perisplenic spaces, and paracolic gutter).

**Results:** The findings were defined as positive if free fluid was visualized intra-peritoneally. Depending on the examiner's specialization, the patients were placed into one of three groups; 1) Group R was examined by the radiologist (101 points); 2) Group S by the surgeon (68 points); and 3) Group EM (73 points) by the anesthesiologist from the emergency department. Free peritoneal fluid was found in 98 cases (40.5%), true negative result in 131 (54.1%), false negative result in 13 cases (5.4%), and no false positive results were reported. In the Group R, true-positive was in 39 (38.9%) cases with 6 (5.9%) false negative findings. Group S identified true positives in 24 patients (35.3%) and 3 (4.4%) with false negative findings. Finally, in the group EM, free fluid...
was detected in 35 (47.9%) patients with 4 (5.5%) having false-negative results. Overall, the sensitivity of ultrasonography in the detection of hemoperitoneum was 88%; in group R, 87%; group S, 89%; and in group EM, 90%. Specificity was in all cases 100%.

Conclusions: Emergent ultrasound examination in detection of hemoperitoneum is equally valid in the hands of various specialists if they are appropriately trained and have the same level of experience.

Key Words: hemoperitoneum; ultrasonography

Burn Injuries in Traffic Accidents: Are They Avoidable?
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According to Austria’s Central Office for Statistics, from 1989 to 1995, approximately 60 fatal accidents occurred each year due to fire. It is estimated that up to 50% of these deaths were due to traffic accidents. In 1993, the Institute for Safety in Vienna registered 25 burn victims (411 treatment days) from traffic accidents compared with 19 patients (523 treatment days) in 1994. Treatment of a patient with a burn index of 80, costs approximately DM 8,700 per day (ATS 62,000). The lasting visible damage from disfigurement following burns, which are not life-threatening, is demonstrated by a prominent former Austrian racing pilot and present-day airline owner.

Very few burns in traffic accidents occur as a result of the primary explosion: most are suffered through cable fires following automobile body damage which then ignite flammable gases and liquids. A simple, automatically controlled foam extinguishing system could primarily extinguish the source of the fire and thus, help prevent deaths. Saving human lives, and secondarily, the economic benefits are convincing arguments in favor of implementing the foam system.

Key Words: burns; costs; deaths; explosion; fire

Re-operation following Abdominal Trauma
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Rio De Janeiro, Brazil

Objectives: Review of medical charts from patients who underwent abdominal re-intervention in the emergency surgery department to identify underlying mechanism of trauma, initial treatment, complications, clinical and imagining data, morbidity, and normality.

Patients and Methods: From November 1991 through November 1996, 1,246 abdominal surgical procedures were performed at the emergency surgery department in the Miguel Couto County Hospital, Rio de Janeiro, Brazil. Thirty charts representing patients who required 77 abdominal operations were selected for review.

Results: We divided abdominal re-operations into two classes, 10 were diagnosed in acute period, three in the chronic period, and one during treatment for a complication.

Conclusions: Thoraco-abdominal trauma offers favorable outcome when diagnosed early, even though very often present as serious injuries. Diaphragmatic wounds must be carefully sought, and the correct treatment instituted during the initial exploration.

Key Words: diaphragmatic hernia; thoraco-abdominal trauma

Injuries to the Neck
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Objective: To analyze the results of treatment of 76 trauma patients with injuries to the neck who were operated in the Miguel Couto County Hospital to compare two different approaches: mandatory and selective exploration.

Patients and Methods: Medical charts of 76 patients with neck injuries who presented at emergency room of Miguel Couto County hospital from July 1990 to July 1995 were reviewed. Age group, gender, mechanism of injury level of injury, diagnostic procedures complications, and mortality were analyzed.