Materials and Methods: The medical charts of 16 patients who underwent DCS from October 2000–April 2004 were reviewed retrospectively. All of the patients were classified into one of two groups: (1) Survived (Group A: 11 cases); and (2) Expired (Group B: 5 cases). The number of patients who underwent DCS, and met the following criteria were evaluated: (1) systolic blood pressure <90 mmHg; body temperature <35°C; and (3) pH <7.3.

Results: The aims of the DCS were hemorrhage control for massive hepatic injury in 12 cases (Group A: 7, Group B: 5) or severe pancreatic injury in four cases (all in Group A). The response pattern of the circulation from initial fluid resuscitation revealed transient responders (six cases) or non-responders (10 cases). The severity of injury was greater in B group (ISS of 39.4 and $p = 0.47$) comparing with Group A (ISS of 31.3 and $p = 0.729$). A matching number of these DCS criteria in Group A were 0 (3 cases), 1 (3 cases), 2 (5 cases) and 3 (1 case). On the other hand, all cases matched 3 (full scores) in Group B. The time from admission to fulfill these three criteria between both groups was 40.7 minutes.

Conclusion: Although further investigation is needed, the revised DCS decision criteria seems to be useful, and DCS should be performed before the abdominal trauma patient fulfills these three criteria.

Keywords: abdominal; acidosis; coagulopathy; criteria; damage control surgery (DCS); emergency department; fluid; hypotension; hypothermia; liver; pancreas; resuscitation; trauma

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Is Mechanism of Injury a Useful Predictor in Prehospital Trauma Triage?

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This project set out to answer a significant prehospital care question that remained unresolved following the 1999 Review of Trauma and Emergency Services in Victoria, "Is mechanism of injury a useful predictor in prehospital trauma triage?" The performance of triage in physiologically stable, trauma patients for whom only mechanistic criteria are present upon which to make judgments, has a high potential for over-triage; over-estimation of severity of injuries is unavoidable since there is a possibility that potentially serious injuries will be missed. Validation of the predictive value of application of mechanistic triage criteria has been limited in international literature, and hence, its value in predicting the severity of the injuries remains controversial.

However, prehospital trauma triage is a keystone of an effective, regional trauma system. This paper outlines the process and results of a study of the accuracy of the mechanistic triage criteria that was undertaken in a statewide emergency medical services system.

The first step in the process identified the profile for all ambulance trauma responses for the 2002 calendar year. Data will be reported on the state's population (4.8 million), total trauma responses (53,039), and number of patients in the following categories: (1) physiological distress (1,566, 3%); (2) significant pattern of injury (11,086, 20.9%); and (3) mechanism of injury only (6,664, 12.6%). It is believed that the size and completeness of this data set makes it unique.

The second step was to further analyze the mechanism of injury only category: first, identify the frequency of patients assigned into each of the traditional trauma mechanism categories, and then calculate their predictive values. This analysis identified only two criteria, which demonstrated statistical significance, MCA >60 km/h, and a fall from a height >5m; however, these criteria are of doubtful clinical or operational significance.

This paper will provide further analysis of this category and discuss the implications and limitations of the study. It is believed that this is the largest ambulance-based analysis of the predictive value of mechanism of injury in prehospital trauma triage and the outcomes will be of international significance in contributing to the evidence-base of prehospital trauma triage.

Keywords: criteria; database; emergency medical services (EMS); falls; mechanism of injury; prediction; prehospital; severity; trauma; triage

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Poster Presentations - Tsunami

Experiences in Sumatra following the Tsunami in Indonesia and the Okushiri Tsunami in Japan

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Introduction: Following a request by the Government of Indonesia, the Government of Japan sent the Japan Disaster Relief (JDR) Medical Team to Sumatra. Also, there was a big tsunami in Okushiri Island in Japan in 1993.

Objective: The JDR provided medical assistance in a field hospital set up in Banda Aceh from 02–19 January 2005. The experiences obtained from this tsunami were compared with those from the Okushiri tsunami.

Results and Discussion:

1. In Banda Aceh, >100,000 residents died by drowning. The first team, which consisted of 22 members including four doctors, treated 1,436 patients during the 10 days. One-quarter of these patients were victims of trauma with infected wounds. Others had respiratory complaints associated with drinking seawater, skin diseases related to bad sanitation, or acute stress disorders.
2. On 12 July 1993, an earthquake and subsequent tsunami struck Okushiri Island in north Japan. A total

of 201 persons were killed, 29 were declared missing, and 83 people were wounded seriously. The number of dead and missing was equal to 4% of the island's population. An emergency transport system using helicopters was implemented and many victims were transferred to Hokkaido Island.

3. On 12 October 2004, a joint seminar between Indonesia and Japan sponsored by JICA involving the emergency medical teams relative to the emergency medical care that should be provided during a sudden impact disaster was held in Jakarta. Coordination between Indonesia, Malaysia, and the Philippines were discussed with reference to the use of a communication satellite. Two months after this discussion, the Sumatra earthquake occurred. The early medical mission was welcomed in Indonesia and coordinated with Indonesian medical staff.

Conclusion: Japan not only provided JMTDR, but also provided financial aid. An Indian Ocean tsunami-warning network must be established as soon as possible; hopefully it will operate like the Pacific Ocean tsunami-warning networks.

Keywords: Banda Aceh; coordination; earthquake; Indonesia; Japan; Japanese Disaster Relief (JDR); Malaysia; Philippines; tsunami; warning systems
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Lesson from Simeulue Island

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Introduction: Simeulue is located in southwest Aceh Province and was the island closest to the epicenter of the 26 December 2004 earthquake. This study seeks to describe how the islanders coped with the tsunami disaster, and suggests an appropriate way of supporting disaster areas. Amazingly, in spite of Simeulue's location, only a few of the island's 79,000 people were killed. This was because residents, remembering tales from their elders about huge waves following large earthquakes, fled from the shores before the tsunami hit. In the early stages after the tsunami, only a few organizations provided relief operations on Simeulue. Palang Meran Indonesia (PMI) started a mobile health clinic on 15 January and was the first and the only organization to conduct curative health activities in the island. On 30 January, the Japanese Red Cross Society (JRCS) joined the PMI's efforts.

Methods: PMI and JRCS operated mobile health clinics. Islanders were interviewed, the general condition of affected villages was examined, and patients' records were abstracted.

Results: When the magnitude 9.0 earthquake struck the island, islanders escaped from the beach as they followed their oral tradition. This reaction resulted in an incredibly small number of victims. While only limited relief items were provided to the island, local residents built temporary shelters using pieces of wood. Chronic diseases were the most common illnesses treated in the mobile health clinics.

Conclusion: External relief operations sometimes underestimate the capacity of local communities to care for themselves. The case of Simeulue Island presents a challenge to international relief operations of tsunami disasters.

Keywords: Aceh Province; capacity; chronic diseases; earthquake; mobile health clinics; relief; Simeulue Island; tsunami
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Community Health Services Clinic in Bangmuang Evacuation Center in Phang Nga Province in Thailand during the First Month following the Tsunami: A Possible Model of Primary Care in a Rescue Center during a Disaster

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Introduction: On 26 December 2004 at 09:00 hours, an earthquake with a magnitude of 9.0 on the Richter scale struck the area off the western coast of northern Sumatra, triggering massive tidal waves (tsunami). The tsunami waves inundated costal areas in countries all around the Indian Ocean rim including Thailand, causing destruction of infrastructure and a huge number of fatalities and injuries. In Thailand, on 25 January 2005, 5,388 fatal cases were confirmed, 3,120 people were reported missing, and 8,457 people were wounded.

Objective: To study the function and patient characteristics of a health clinic erected in an evacuation center following the natural event.

Methods: The IDF home front command medical department sent a research delegation to study the response of the medical system in Thailand to the disaster. The delegation included three physicians and a population behavior sociologist, experienced in hospital preparedness for disaster and emergency medicine. The delegation worked from 29 January–04 February 2005. On 02 February 2005, the delegation met with Thai healthcare officials and visited a community health clinic that was erected in an evacuation center in Bangmuang in the province of Phang Nga. The delegation met and questioned the staff of the health clinic and reviewed patient logs from 05 January–02 February 2005. The methods of research included: (1) open and closed questionnaires; (2) reading debriefing reports; and (3) observation of the infrastructure of the medical facility.

Results: The erection of evacuation centers commenced on the day following the tsunami. Such a center was erected in Bangmuang. The center housed 390 families and a total of 1,859 inhabitants. A healthcare clinic was set up in a tent in the center of the camp in order to provide primary health care for the inhabitants. The clinic was staffed by volunteer nurses from Thai hospitals that rotated on a weekly basis. Operating hours were 08:00–20:00 hours, and a visiting physician staffed the clinic from 08:00–14:00 hours. The average patient volume was 80–100 visits per day: around 5% of the camp population that visited the clinic every day. Most visits occurred during the physician