

required. This case is similar to high-falling calcaneus fractures. This may have occurred as a result of an upwards blast impact that may have been weakened because of the thickness the layer of snow. Thick layers of snow may help protect civilians from mine injuries. This potential protective affect may be useful for researchers aiming to decrease mine injuries.

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(P1-72) Advanced Surgical Cooling Garment to Combat Heat Stress in CBW Ppe and Hot Surgical Environments J. Mcisaac

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Introduction: Heat stress is an occupational hazard for all personnel requiring Personal Protective Equipment (PPE). Even “breathable PPE” increases measurable heat stress in active troops and surgical personnel. A novel negative-pressure, semi-permeable surgical cooling vests for use in the operating theater was jointly developed by Mountain Laurel Biomedical, Hamilton Sundstrand, and Hartford Hospital.

Materials and Methods: Surgical personnel alternated between wearing cooling garment vs no cooling under their surgical gowns (PPE) during surgical procedures lasting up to several hours. Tympanic temperatures were monitored for safety. A questionnaire was completed after the conclusion of surgery to assess perception of comfort. Trials began at ~18 deg C, but ambient temperature was increased to 24 deg C (40–50% RH) for the third series of trials. Results: The study was terminated prematurely. After wearing the cooling vest, surgeons refused to complete additional control trials due to the heat. They demanded to use the cooling device for all surgery, even outside the protocol! Vest wearers remained dry and reported a statistically significant ($p < 0.0001$) greater level of comfort compared to control subjects. The weight, fit, and mobility restriction of the vest was not clinically significant.

Conclusion: Active cooling and drying using a negative pressure cooling vest improves subjective thermal comfort with minimal perceived impact on mobility during surgical procedures. This technology may have utility in other fields that utilize PPE. The Chemical Biological Warfare (CBW) ensemble, in particular, is a promising candidate. Heat stress from PPE ensemble even if “breathable” –Cooling at ~100 watts with 18 deg C water –Semipermeable membrane allows condensation removal. Wearer stays cool and dry. –Negative pressure prevents coolant loss if punctured –Minimal perceived restriction of shoulder, neck, and waist range of motion – Light weight ~1.5 lbs. (0.68 kg) – Quick disconnects allow options for cooling source.

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(P1-73) Medical CBRN Training for Military Health Staff and Its Benefits

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Objective: The increasing threat of the use of chemical, biological, radiological, and nuclear (CBRN) agents requires significant

military medical preparedness and response, including training. The initiatives for CBRN training by Gulhane Military Medical Academy, which is under the Health Command of the Turkish Armed Forces, will be discussed, and the training program and educational model for medical CBRN defense will be highlighted.

Method: The training is given to military hospital staff once or twice a year. Hospital staff is trained over a period of five days, with practical issues regarding medical CBRN defense covered during the last two days. A questionnaire is given to trainees at the beginning and at the end to ascertain the adequacy of the course.

Results: So far, this medical CBRN training has been given to 150 military health staff including physicians, nurses, and medical non-commissioned officers. According to the survey, they benefited greatly from this training, and there was a statistically significant increase in CBRN knowledge when the initial and final scores of the survey were compared ($\chi^2 = 3.089$; $p = 0.002$).

Conclusion: Through this planned trainings, staff are trying to become well-trained in detection, personal protection, decontamination, and the organization aspects of CBRN defense to apply the proper prophylactic measures, diagnosis, and treatment. Feedback suggests this program also helped “train the trainers”, providing extensive information to other staff working in military hospitals.

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(P1-74) Introduction of the Portable Decontamination Unit of Gulhane Military Medical Academy

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Introduction: Chemical, biological, radiological and nuclear (CBRN) cases are seen as an increasing risk because of the increasing threat of international terrorism. Decontamination is one of the basic components of the intervention for CBRN exposure. The introduction portable decontamination unit in the hospital setting is described in this presentation.

Method: The general properties, facilities, and capabilities of the portable decontamination unit, which is present in the GATA CBRN Department of the Turkish Armed Force’s Health Command, were evaluated.

Results: The portable decontamination unit in the hospital has a metal frame that is 54 m² wide. It is composed of two tents that weigh about 300 kg. The metal frame, metal legs, and tent cloth are stored in carrying bags. Four people can construct the tents in 10 minutes. An educated squad of four people can prepare the decontamination system and instructions in 25–30 minutes. The unit consists of two lines: one for outpatients and another for inpatient decontamination, which includes a rail system. Each decontamination line contains an undressing, shower, and dressing section.

Discussion: Along with metal-framed decontamination tents, there also are inflatable tents. The inflatable decontamination units can be pitched in 5–7 minutes by an electrical air compressor. Metal-framed tents are easy to carry, as the frame, metal legs, and tent cloth are stored in carrying bags. By pitching the decontamination tent on a smooth ground in front of the hospital entrance, decontamination of patients can be completed before they reach the hospital. Another decontamination unit is in place next to the emergency department.

Conclusion: Terrorist attacks that result in mass casualties demonstrate the importance of CBRN preparedness. A decontamination unit and an appropriate CBRN preparedness plan should be constituted into the basic treatment system.

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(P1-75) Medical Measurement against Disaster — From the Viewpoint of “Disaster Medicine Compendium”

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The world must be resilient against major disasters, whether they are caused by natural hazards or human-related mechanisms. Nowadays, outbreaks of emerging infectious diseases, such as new strains of influenza, are a world wide problem. Special consideration is necessary against chemical, biological, radiological, or nuclear (CBRN) hazards.

Results: The hardware/mechanical preparedness, measurements of the severe influence in mental/psychological aspects, official public system, incident command system, public education system, and the needs of vulnerable populations should be established prior to a disaster. It is also important to prepare the necessary medical resources. The technical skills needed for triage, emergency care, and appropriate transportation should be trained for.

Discussion and Conclusion: Measures should be prepared both from the macroscopic viewpoint as well as microscopic approach. A “Disaster Medicine Compendium” consisting of 20 volumes with more than 5,000 pages, was developed in 2005. Currently, a new version is being prepared.

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(P1-76) Descriptive Study of Poisoning Victims Patients at a Tertiary Medical Center in Northern Thailand

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Background: Poisoning is a public health problem that affects all ages, genders, and ethnicities, but certain populations are at increased risk. Unintentional poisoning disproportionately affects lower- and middle-income countries. The epidemiological pattern of poisoning can differ significantly within countries. In Thailand, national poisoning data is collected by voluntary reporting to a poison control center in the capital, Bangkok.

Limited poisonings are reported from Chiang Mai, a province in Northern Thailand, though it has the highest suicide rate in the country.

Objective: The aim of this study is to describe poisoning epidemiology, examine differences between intentional and unintentional poisonings and, to develop a multivariate predictive model of intentional poisonings in Northern Thailand.

Methods: A total of 550 poisoning admissions were identified at Chiang Mai’s University Hospital from 01 January 2005 to 31 December 2005. Demographic data were collected retrospectively by manual chart review. Chi-square and t-tests were used to examine differences in poisoning by intent. A stepwise logistic regression analysis was performed to develop a predictive model of intentional poisonings. Factors significantly associated with intentional poisoning were used in a logistic progression model to identify predictors of intentional poisoning.

Results: Younger age was significantly associated with intentional poisoning. There was no demonstrated difference in gender and poisoning intent. Predictors of intentional poisonings were use of chemical agents, high-risk medications (analgesics and psychiatric), unemployment, and younger age.

Conclusions: Interventions should focus on factors that put young adults and the unemployed at greater risk for intentional poisonings. Further interventions are also needed to limit access to potentially lethal doses of chemical agents and high risk medications.

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(P1-77) Helping Children Cope with Ongoing Stress

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Stress is a major health risk factor. The origin of the stress or stressful situations might come from internal and/or external causes. In this presentation, two groups of Israeli children who are living under stressful conditions that are affecting their health, their daily functioning, and their learning abilities will be presented. The first group is a group of children living in a town that has experienced terrorist activities for many years. The other group is children from families that have to leave their permanent home due to the Israeli Parliamentary and governmental decision to withdraw from the Gaza Strip. This plan included forced relocation of approximately 8,000 civilians from their communities to temporary sites elsewhere in Israel, and the dismantling of their homes. Using the classical epidemiological triad model of host-agent-environment, the hazard dynamic and its outcomes will be presented. Activities to help the children cope with the stressful situations also will be presented. The objective of this presentation is to describe exposure to risk factors and responses from public health nurses that are aimed at ameliorating the associated negative health effects.

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