

Since 1988 the government of Norway has financed the HEMS-operations. The aim of the Foundation is to improve emergency medicine in Norway.

**Interdisciplinary Emergency Medical Cooperation**—TAS seminars in emergency medicine are designed to promote cooperation between municipality resources. From 1999 to 2003, a general, interdisciplinary course was provided and completed by all 190 applicants (municipalities).

Uncontrolled bleeding and hypoxia are main causes of morbidity and mortality in traffic crashes. Entrapment delays the transport to definitive care. In 1998-1999, two firefighters and one paramedic in Oslo developed a new extrication technique based on the idea of reversing the forces of the original crash: (1) By 2002-2003, a new concept was developed in cooperation with these professionals. By May 2007, a new, revised TAS course was created and has been completed by 170 municipalities. Refresher courses and new concepts regarding heavy vehicles and kinematics currently are being designed.

Participants of the TAS courses have demonstrated their satisfaction with the course, with 90% giving a score of 4 or 5 on a scale from 1-5 (1 being "none and 5 being "very large" benefit).

**Conclusion:** Local resources handle the method adequately and are often able to extricate the victims within 10 minutes. Experiences from actual crashes indicate that the method is saving time on scene.

**Keywords:** courses; crashes; effects; extrication; training;

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### Criteria for the Organization of a Mass-Casualty Exercise

*M. Tengattini; A. Geddo; F. Prato; P. L. Ingrassia; D. Colombo; S. Calligaro; L. Ragazzoni; V. Bergamaschi; F. Della Corte*

Università del Piemonte Orientale, Novara, Italy

**Introduction:** Among all the possible educational paths for teaching disaster medicine, a real-sized exercise covers a primary and irreplaceable role. The possibility to structure functional, real-sized exercises that more and more applicable to real situations enables the operators to test both the adequacy of the available technical and logistical resources, and the emotional and operative action needed to cope with the condition.

#### Methods:

**Scenario**—Directly related to the simulation objective. Its complexity is not necessarily proportional to the exercise effectiveness. Very simple scenarios may have a strong educational impact.

**Actors**—Depending on the background and formative requirement of the protagonists of the exercise, it is necessary to shape the structure of the "drill."

**Simulators**—These persons have a fundamental role in the search for the adherence of the simulation to the reality.

**Data Collection**—The purpose of every functional exercise should be to supply data that can be assessed and used to draw precise indication to improve the protocols in use. To collect a series of useful key points to set up a real-size exercise can modify the educational impact of this kind of didactic pathway.

**Conclusions:** To make uniform the management issues in the phases of scenario, feedback can promote a standardization process aimed at providing invaluable and comparable exercises. This process is intended to search for a model applicable to any reality involved in this field, to standardize the development of assessment strategies for exercises in disaster medicine.

**Keywords:** development; disaster; effectiveness; exercises; simulations

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### Power Exercise Creator and Evaluator (ECE): A New Tool for Planning, Organizing, and Evaluating a Virtual Disaster Simulation

*M. Tengattini; D. Colombo; P.L. Ingrassia; A. Geddo; S. Calligaro; F. Prato; L. Ragazzoni; V. Bergamaschi; M.F. Merlo; F. Della Corte*

Università del Piemonte Orientale, Novara, Italy

**Introduction:** Functional, full-scale exercises, although expensive, are mandatory to test a hospital's emergency department (ED) response to a disaster. Power Exercise Creator and Evaluator (ECE) is software capable of integrating all the information needed to simulate the ED response to a mass-casualty incident (MCI) (patient data, bed occupancy, laboratory and imaging facilities, and manpower availability) without stopping routine hospital activities. **Methods:** This platform software is composed of a database containing casualty 'storyboards' (clinical findings according to timings and treatments performed) based on the expected injuries for any kind of event; virtual laboratory and radiology departments with pre-planned exam data sheets. Power ECE includes a multiple windows view that allows the caregiver to perform treatments on victims, request certain tests and exams, and admit or discharge patients. The software is fully equipped with a statistical tool, capable of analyzing the virtual drill according to pre-selected performance indicators and to perform evaluations at once.

**Results:** This platform was tested during a drill simulating a road traffic accident in a tunnel involving sham-victims. Fifty victims arrived at the ED where on-duty physicians used Power ECE for simulating technical lab and imaging procedures, and to dispatch and manage patient movements inside the simulated hospital. Notwithstanding the scenario complexity, there have been no technical problems running the simulation. Quantitative evaluation of the performance was provided by the participants at the end of the exercise.

**Conclusions:** This software is an inexpensive and user-friendly tool to organize and evaluate hospital ED disaster drills.

**Keywords:** drills; emergency department (ED); mass-casualty incident (MCI); Power Exercise Creator and Evaluator (ECE); simulation

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