

## Session 2: Competencies 2

Chairs: Geert Seynaeve; P. Hustinx

### “Bombs, Blasts, and Bullets” (B3)—Using Knowledge to Arm the Innocent

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Australia has little experience in the medical management of multiple casualties from terrorist incidents. Because of strategic alliances in recent years, Australians at home and abroad increasingly have become a target of interest. Therefore, it is important to develop educational programs for medical and paramedical responders to address the lack of local knowledge in this arena.

The authors outline the development of the “Bombs, Blasts and Bullets” (B3) course, an Australian, one-day intensive course to introduce the participants to the considerations required in managing multiple victims of conventional weapons. Little pre-existing knowledge could be assumed, and little budget was available for the course. In addition, significant skepticism regarding the potential threat to Australia had to be addressed. These factors would be shared by many other countries that have never been directly threatened by terrorism.

To date, several courses have been taught at the state level over the last two years, culminating in the first federal B3 course last year. Feedback generally has been excellent, and has guided the formation of the curriculum.

In addition to the course itself, additional benefits have been reaped from the online presence of collaborating experts. This online presence permits access to the faculty, and further opportunity for collaboration via the Delphi Method.

**Keywords:** Australia; Bombs, Blasts and Bullets (B3) course; medical management training; multiple casualties; terrorist incidents

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### Just-in-Time (JIT) Lectures: An Efficient Approach for Increasing of Disaster Risk Awareness

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The Global Health Network (GHN) for Disasters, including scientists mostly from the US, Iran and Russia, developed two “just-in-time” (JIT) lectures following the South Asia Tsunami in December 2004, (<http://www.pitt.edu/~super1/lecture/lec18071/index.htm>) to provide information about the science of Tsunamis, in general, and, specifically, the most recent disaster and to provide information on how the science can help the communities in primary and secondary pre-

vention in the event of a Tsunami. The same approach had been used in the Bam earthquake, Hurricanes Katrina and Rita and the Pakistan earthquake. This article introduces the methodology and applications of the JIT lectures in disasters and its application in the framework of Disaster Risk Reduction.

The crude estimate showed that in a six-month period, over 255,000 people, worldwide, obtained information from the tsunami lectures. Also, the feedbacks showed that they included a wide spectrum of disciplines and education level, including public health scientists, oceanography and meteorology educators, librarians, international aid organizations and also high school teachers. The JIT lecture about the Bam earthquake had been used worldwide by thousands of educators and seen by a multitude of students.

Just-in-time education can be applicable in future disasters throughout the world as an efficient, educational approach for people and educators who seek information. Just-in-time education can provide an educational strategy to promote risk awareness in the context of disaster risk reduction (DRR) framework.

**Keywords:** disaster risk reduction; distance education; “just-in-time” education; e-learning, preparedness

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### Analysis of Interdisciplinary, Simulation-Based Triage Training for Disaster Preparedness and Response

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Mass-casualty triage establishes the priority of care among casualties when the number of injured exceeds the available resources. Current training relies upon didactic sessions prior to live actor drills that require significant planning and coordination. Simulations can enhance the educational experience, effectively train personnel to employ triage methods, and preserve the knowledge associated with this perishable skill.

The Sim-Patient Triage program is based on prior training systems, including trauma, bioterrorism, and chemical agent casualties. Each synthetic character has its own: (1) injuries; (2) physiology; (3) behavioral model; and (4) signs and symptoms, which change dynamically. Animations such as vomiting, tearing, coughing, and convulsions relate to physiological status. The caregiver can assess and converse with each character, monitor data, and perform medical interventions.

This course of instruction was incorporated successfully with an interdisciplinary disaster preparedness program for students at Duke University. In June 2006, a sample of 262 advanced degree, health science students participated in a qualitative evaluation of the simulation platform and accompanying courseware. In July 2006, under a United States Agency for International Development project to enhance the continuing medical education infrastructure in-country, additional scenarios were developed for use in

physician training in Baghdad, Iraq. Thirty-one civilian physicians attended a two-day course to learn how to deliver the triage training program in their own facilities.

Qualitative and quantitative measurements from all of the students who encountered the simulation platform were collated and analyzed. The results are significant, and demonstrate that simulation can enhance the learning experience and improve application of the concepts learned.

**Keywords:** disaster; education; preparedness; response; simulation; simulation-based triage training; training; triage

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### **An Information Center in a Mass-Casualty Incident (MCI) in a Level-One Trauma Center: Lessons to be Learned from the First Israeli Nation-Wide Drill**

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A mass-casualty incident (MCI) requires a medical response to referred casualties and attention to non-medical services, including assisting casualties in contacting their families and providing reliable information and psychosocial support to casualties and families. These services are provided by the hospital's Social Work Department.

Although the frequency of terrorist attacks has allowed the hospitals to become extremely experienced in care of MCI's, they are not experienced in reacting to a Mega MCI. During the first nation-wide Mega MCI drill practiced last year, the hospital admitted 200 simulated casualties within an extremely brief time span and operated an Information Center for the public. Casualties were moderately and mildly injured with approximately 20% critically injured. The information center was deluged by phone calls and visits by distressed "family members" seeking information. The presented report describes the special requirements and necessary organizational procedures to handle a mega MCI.

Characteristics of the events included: absorbing casualties beyond the hospital's capacity in a short period, necessitating additional treatment sites, brief hospital stays, referrals to other treatment centers, and discharge. Many people presented with stress related symptoms and there was an increased demand for information from the public. Due to the secondary evacuation of casualties, information changed rapidly and there was a high level of uncertainty.

Organization of the Information Center included: expanding teams to include paramedical and organizational personnel in addition to social workers; use of semi-autonomous information and treatment sites; group work with families in the acute stage; and application of techniques for providing partial information during an event characterized by continuous uncertainty.

**Keywords:** capacity; drills; information; Israel; mega mass-casualty incident (MCI)

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### **Measuring Competencies as Indicators for Trauma Care**

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**Introduction:** With care of the trauma victim provided along a continuum, there is a growing need for knowledge of the performance of care providers at various stages. This study was performed to determine whether certain competencies of prehospital professionals are applicable.

**Methods:** Through the use of a Delphi process, consensus was achieved regarding the competencies of prehospital professionals. These included: (1) professional education; (2) participation in trauma courses for adults and children; (3) working experience of  $\geq 18$  months; and (4) annual experience with  $\geq 10$  multi-trauma patients. A structured literature search was performed on these competencies and data on the competencies were collected from ambulance services and the Mobile Medical Team (MMT) in Amsterdam over a 12-month period.

**Results:** Literature on the selected competency is scarce and supports the applicability of at least two out of five competencies as indicators: trauma courses for adults and experience with at least 10 multi-trauma patients each year. Data of competencies were collected from 14 MMT doctors, 8 MMT nurses, and 145 ambulance nurses. The median number of competencies of MMT doctors is 4, MMT nurses 5, and ambulance nurses 3. The average length of working experience and yearly experience with 10 or more multi-trauma patients each year was: 40 months, 7.6 patients/year for MMT doctors; 96 months, 13.4 patients/year for MMT nurses; and 110 months, 3.2 patients/year for ambulance nurses. Except for one doctor, all MMT members finished their professional education, and all MMT members finished a trauma course for adults and children. Most ambulance nurses finished their professional education (98.6%), and the trauma course for adults (89.0%); only 6.2% completed the trauma course for children.

**Conclusions:** Literature shows limited evidential support for the competency indicators described in this study. The indicators are available and distinctive. Although these competencies are distinctive and can be determined readily, they must be assessed further to demonstrate the robustness of competencies as indicators of the practice of trauma care.

**Keywords:** competencies; indicators; multi-trauma experience; prehospital personnel; trauma care

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