

designers and manufacturers to reap the benefit of such things as intelligent vehicle technology and driver auto-feed-back. These are well-established initiatives in the automotive literature and future EMS vehicle design must take advantage of them to improve the safety of our environment.

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## Resuscitation

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An overview of the dangers inherent in urban search-and-rescue operations was provided and highlighted the danger of rescuers putting themselves at significant risk of injury in an attempt to save lives—the so called “red mist” effect. It is recognized that there is a “chain of survival” in an event such as a building collapse; it includes self-rescue followed by first responder assistance, local emergency service rescue, and finally, the arrival of specialist urban search-and-rescue teams. In addition, team-working, systematic, operating procedures and a sufficient supporting medical infrastructure must be designed into a response to provide the best chance of a successful outcome. These top-line specialist assets are in short supply, and must be able to collaborate and work effectively together for an optimal response. There is a need for standardized training and concepts of operations across the urban search and rescue field.

Broadening the scope, an outline of a broader system development in Canada involved the design of a series of specialist teams to cover a wider range of risk areas, beginning with the urban search-and-rescue function, but also creating teams ready and prepared to work in a hazardous CBRN environment or in a tactical firearms situation. The benefits of multi-agency training with other key responding agencies and regular exercising of their function have maintained the interest and enthusiasm of a highly motivated group of personnel. The presenters believe that this approach has limited the inevitable risk in such specialist situations and created an efficient and professional EMS response.

Finally, a major incident case study was presented from Poland. In January 2006, a disaster occurred at an exhibition where the hall roof collapsed under the weight of heavy snow and ice, trapping >350 participants within the structure and its debris. Rescue by urban search-and-rescue teams ensured that the last surviving casualty was extricated within five and one-half hours. Sixty-five persons died, and a further 173 were injured. The significant medical issue was the change in ambient temperature at the point of building collapse where the inside hall temperature of 20°C fell to the outside -19°C. This complicated the medical care of the injured with 15 suffering from severe hypothermia and 90 suffering from mild hypothermia. Treatment strategies were described, including heating equipment in the casualty tents and the provision of warm fluids and gel packs. Post-mortem review showed that none of those who died succumbed from hypothermia. A phenomenal job was done in extreme weather circumstances!

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## Public Health

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Four oral presentations were made during the first of three public health sessions. The papers presented were focused toward emergency public health preparedness and emergency medical care. The session was well attended with >30 participants representing communities throughout the world.

The initial presentation of the session described outsourcing public health emergency drills and exercises. This presentation and the discussions examined outside contracting for exercise development and evaluation by local health departments. A number of solid points were made concerning the contracting process. First was a discussion of when should a local agency consider contracting such services. It was mentioned that the development and evaluation of performance for all types of exercises to test response plans and preparedness have become a science in itself; a process that often is labor-intensive and beyond the resources available within over-extended local health departments. Discussion centered on the need for exercises to be based on long-term improvement with measurable goals. Outside contracts should be comprehensive and include references for previous work and expertise in the development and evaluation of exercises. A local health agency should be ready to monitor deliverables and modify contracts as needed to accomplish the goal of effective, measurable exercises that can develop and improve performance.

Another session presentation described the importance of coordinated emergency medical services (EMS) and public health response in community preparedness and responses to emergencies. In many communities, public health and EMS is a natural partnership because the EMS is administered by health departments. The discussion focused on the ability of EMS personnel to help in public health emergencies with surveillance and disease recognition in a community. This seldom explored area for coordination of EMS and public health has great potential for impact in the setting of large-scale disease outbreaks and public health emergencies. It also was noted that EMS can provide critical functions in times of public health emergencies, such as vaccine administration and mass evacuation.

An innovative approach to emergency preparedness in small islands and archipelagos using Delphi techniques was described for developing consensus on minimum standards. Using local experience and experts in relatively isolated communities is an effective method for identify public health emergency priorities and resource utilization. Participants discussed and explored expanded use of the Delphi technique to further public health emergency research.

Self-presenting patients to an emergency department in the United Kingdom were discussed. Of interest was that 24% of persons presenting to the emergency department had been referred there after contact with another health provider. Only 64% of the persons presenting received medical interventions and 34% could have had primary care treatment. The problems illustrated seem to be univer-