gion and socio-cultural interactions. It was not surprising that poverty (lower socio-economic groups) is a "trap" when disaster strikes.

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Mass-Gatherings

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Professor Arbon provided an overview of the current state of knowledge in this field and addressed some of the challenges in researching how health status may be challenged during mass gatherings. Issues discussed included definition of the purposes of health care at such events, the need to learn lessons and to develop evidence-based practices, and issues concerned with developing research methods. Some notable contributions to the literature that raise new questions or perspectives also were canvassed. In summary, there had been a progressive development of knowledge to underpin practice. There was now a need for more robust research applicable across events and for developing "higher" levels of evidence.[1]

An overview of experience in providing services for the Pope's visit to Krakow and the organization of health services was provided, as was the range and timing of presentations for care. The dominant form of treatment was on-site and only 22% of casualties required transportation. There was a wide profile of patient presentations and some issues were raised about the possible causative factors. The paper provided a useful reconnection and reminder for participants of the demands of organizing care at major events.[2]

Some of the issues raised were re-referenced noting that the medical support for the International Monetary Fund/World Bank Group Boards of Governors Annual Meetings presented specific challenges because of the security and safety issues that had to be considered by the planners. Mobile medical teams worked well and considerable training and orientation was provided. The audience was greatly interested in the expenditure on medical support facilities for the event, which subsequently have been turned over to commercial use.[3]

The University Games in Turkey are one of the largest gatherings of this type in the world and it was argued that this mass gathering presents some unique challenges. Another case study of the experiences of healthcare practitioners in providing effective services at such events was provided. In this case, a key feature appeared to be the coordination of many hospitals and other agencies (including polyclinics) across a wide geographical area.[4]

The Ratha Jagra Festival runs over seven days and attracts pilgrims from all over India. The religious elements of the festival and the challenges in providing services to the events that make up the festival were discussed. In particular, the use of volunteers and the differing roles of nurses and paramedics as a component of the service were highlighted.[5]

The Maurer's Formula provided a basis for determining or predicting the healthcare service resources required in supporting different mass gatherings. The formula was described and related to the experiences in providing health care at three air show events. The effects of various factors on the resources needed including alcohol consumption, weather, mobility of the crowd, and language barriers were discussed.[6]

An annual, four-day walking event highlighted the potential extreme impact of warm weather conditions on participants' health. An emergency situation progressively developed during these events that resulted in producing 300 heat casualties. The negative effect of well-meaning fire service intervention—spraying the walkers to cool them and subsequently raising the relative humidity for that section of the crowd—endangered the others. The main problems experienced included: (1) overload of the emergency services; (2) lack of transportation; (3) rumors of multiple deaths among the crowd; and (4) a section of the track in full sun without respite. There was insufficient planning for this event across agencies and future preparation must address these issues and strengthen the power to cancel the event when conditions dictate.[7]

A number of mass-gathering events within a large city, including the funeral of Pope John Paul II, were described. Some issues in this scenario included the diplomatic and practical issues of working alongside the Vatican state border and with Vatican State officials. Other major events, such as the celebration of the World Football Cup 2006, within the city also were described. The role of collaboration across services and the interchange ability of equipment and skills were discussed.[8]

The planning and establishment of a subway accident exercise designed to test the mass-casualty response of emergency services in Rome also was described. Themes included the importance of communication, collaboration, and effective tracking of casualties. The simulation demonstrated weak points in the established plan and facilitated improvement.[9]

Finally, it was argued that greater focus must be paid to principles and relatively less focus on protocols in the management of mass casualty events in the field. Practitioners must respond to a complex and changing emergency environment and their decision-making should be flexible. Prescribed approaches could be less effective and discussion by the leaders of the response must be supported. Differences in time, location, number of casualties, type of casualties, staff experience and qualification of the responses, available resources and distance to tertiary care affect decisions made at each scene.[10]

The point was made that mass-gathering medical care is provided to crowds who gather for a wide variety of reasons and present different issues of motivation and different profiles to healthcare agencies. These must be factored into the planning process and use knowledge drawn from the research in order to customize event medical services.

This addressing the key issue raised by earlier speakers: planning and resources required for mass gathering events.

Presentations

1. Arbon P: Understanding mass gatherings: A framework for research and practice improvement. (Australia).
2. Starowicz M: Medical planning for a major event: The Pope's visit to Krakow on 26–28 May 2006. (Poland).
3. Pokkan G: Medical support for the International Monetary Fund (IMF)/World Bank (WB) Group Boards of Governors Annual Meetings: Issues, Challenges and Lessons Learned. (Singapore).

4. Sofuoglu MT: A sample for mass-gathering planning: Universiade 2005 Summer Olympic Games, in Turkey. (Turkey).
5. Alshinkity IS: Jamarat Ritual: Emerging critical cornerstone of Hajj. (Saudi Arabia).
6. Potin M: Validation of Maurer's Formula to type and size the rescue resources and healthcare needs in case of mass gatherings: The case of three consecutive major air shows in western Switzerland. (Switzerland).
7. Coumans GGH: Three hundred heat casualties during a walking trip. (Netherlands).
8. Mosiello G: Prehospital management of mass-gathering events in Rome—A review from John Paul II Pope funeral to celebration of the Word Football Cup 2006. (Italy).
9. Salazar V. De: Subway accident in Rome October 2006. (Italy).
10. Peleg KP: Managing mass-casualty events: Protocols or principles? (Israel).

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Pediatrics

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At the 15WCDEM in Amsterdam, including the WADEM pre-Congress retreat, the topic "Children in Disasters" was given special attention. As a result of these deliberations and discussions, two important documents (discussed below) have been elaborated.

During the Congress, there were two pediatric sections at which there were 15 oral presentations and five posters made by top disaster medicine specialists from different countries of the world (US, Russia, Belgium, Iraq, Denmark, Netherlands, Israel, Georgia, Iran, the Czech Republic and others). Some discussed preparedness and organization of medical aid to children at disaster sites during disasters, wars, and terrorist acts. Additional topics discussed included the presentation of J. Hom's paper, Hospital-based Pediatric Disaster Triage Algorithm, that is a collaborative effort from New York City's Pediatric Disaster Advisory Group, transportation of critically ill neonates, and reviews on the problems in their respective countries like Iraqi children and trauma, the development of a pediatric trauma register in Flanders (Belgium), authors' experience-based medical materials like Neurotrauma structure, its diagnostic peculiarities, medical aid to children in various earthquakes, and surgical treatment of soft tissues and bones complicated with surgical infection in children in case of mass casualties.

After analyzing the abstracts as well as oral and poster presentations on pediatric disaster care, the WADEM Pediatric Committee and Board of Directors developed two important documents; "Report of the Pediatric Committee to the Board of Directors" and "Recommended Core Competencies for Pediatric Disaster Care". These documents describe the situation with pediatric disaster care and state that in disasters, children suffer and die disproportionately more than adults, their physiological needs are much greater than adults, and their outcomes are decidedly worse that adults. The two reasons responsible for this include:

1. No appropriate harmonious, world-wide system of coordination for pediatric disaster care; and
2. A lack of widespread "local" pediatric specialty and sub-specialty care in rural (and even urban) areas.

As a result of these extant deficiencies, children suffer significant mortality and morbidity/ disability in disasters.

It is the strong feeling that quick access to pediatricians and sub-specialty pediatric care (pediatric trauma surgeons and others) is the best way to mitigate adverse pediatric outcomes in disasters. This cannot be tolerated by the 21st Century society, and the authors of these documents believe that it is incumbent upon WADEM to take the lead in ameliorating this lamentable situation. The Congress delineated five recommendations to be considered as priorities for pediatric disaster care:

Recommendations

1. The WADEM recommends to the World Health Organization (WHO) that it create a full-time position specifically tasked with improving the medical care and well-being of children in disasters and humanitarian crises including war zones;
2. The WADEM encourages and coordinate an international commitment to improved education of healthcare professionals for medical care of children in disasters. They recommend that this be a two-pronged approach: (1) prehospital (field and austere) care of children in disasters; and (2) in-hospital and critical care of sick children in disasters. The prehospital education would be geared toward non-pediatric specialty healthcare professionals. The guiding principle would be "to recognize, stabilize, and appropriately transport a "sick child". The in-hospital /critical care education would be aimed at pediatricians and pediatric sub-specialists who either will work locally or as a part of regional, national, or international pediatric disaster response teams;
3. The WADEM should foster the development of a pediatric disaster database and partner with a university or NGO to house and maintain the worldwide resource. There is a significant amount of data published in disparate journals on pediatric disaster care, and this research must be collated and rendered into a common format that would allow meta-analysis of the data;
4. The WADEM should develop evidence-based clinical protocols for the treatment of children in disasters and for these to be published in *Prehospital and Disaster Medicine*; and
5. The WADEM (in partnership with WHO) foster the development of national and international pediatric disaster response teams that would be available to respond when needed.

To fulfill these recommendations, core knowledge competencies and core performance capabilities must be developed and evaluated to develop appropriate pediatric disaster medicine benchmarks.

Recommended Core Competencies for Pediatric Disaster Care

1. *Incident Command System (ICS)*—participates as a member of the disaster team under ICS structure;
2. *Preparation and Mitigation*—participates in planning and mitigation for disasters;