culture clashes, frustrated expectations; and risky behaviours; and (2) Increases in vulnerabilities, including: greater cumulative exposure to all hazards – from storms to trans-species infections; migration; overcrowding in unsafe areas; political/social disenfranchisement; and higher dependency rates. The need for new coping/mitigating strategies is underlined, for instance, by the epidemiological shift from acute to chronic conditions (i.e., an overall increase in poor health.

Economic and geopolitical transition brings: (1) an Increase·in man-made hazards such as violent conflicts, financial meltdowns, and toxic spills; and (2) an increase in vulnerabilities including: higher degrees of dependency on more complex lifelines, lower disaster thresholds, and evolving, unclear or shifting lines of authority and responsibility, both in individual societies and globally. New coping/coping strategies must take into account a range of factors including: changes in global governance; growth in awareness and expectations; the CNN/Katrina effect; stronger public demand for accountability; and tension between economic growth and environmental safety.

In the 19th Century, the birth of Public Health as an applied science helped the transition from Poor Laws to Welfare State. In the 21st Century, can Public Health help the transition from Humanitarian Assistance to Global Human Security?

Indeed, some already postulate that the modalities of response as well as the responders will change significantly over the next decade. Far greater reliance will be placed on insurance-based health and food assistance, on remittance-based support and upon indigenous relief institutions.

THE WAY FORWARD: substantiating the central role of public health in humanitarian work: In general terms, I would call for:

1. A paradigm shift from Disaster to "Crisis" or "Change-management"—ANY change brings risk;
2. Keep (improve) documenting evidence of linkages between crises and human choices, e.g. resource allocation and relations with the natural environment— There is no such a thing as a Natural Disaster. An epidemiological reading of the natural history of disease helped bridging from individual medicine to collective public health—the same model applies to disasters and crisis management;
3. Accept the fact that public health is an applied science and it is legitimized by its results: (1)while consolidating evidence, accept to plan for, and manage in uncertainty and complexity;
4. Stick to the Do no Harm principle: foster professional performance and accountability;
5. Support research in and the application of effective and sustainable technologies: not only in the delivery of care, e.g. triage, chlorination, measles vaccination, ORS, and Plumpynut, but also in programme management: surveys/surveillance, coordination, operational planning, and security.

As far as WADEM is concerned, I would suggest three threads for discussion:

1. *Advocacy*—(a) re-wording of the WADEM mission statement that explicitly acknowledges that "Medicine is Humanitarian"; (b) Identifying ways to expand the constituency among peers and partners; and (c) Collaborate in the International Disaster Response Code;
2. *Knowledge management*—(a) Building science and identifying best public health practices in humanitarian operations and in the delivery of care. (b) encouraging situational awareness: Health Intelligence and the Three Drivers; the worst is the Unknown;
3. *Provision of services*—(a) provide mentors/facilitators to the Health Cluster – for coordination, training, surveys, etc.; (b) Conduct evaluations; and (c) Define competences and set standards for accreditation.

Oral Presentations—Communication and Information

Space-Based Solutions for Disaster and Emergency Medicine

David Stevens; Joerg Szarzynski
United Nations Office for Outer Space Affairs, Vienna, Austria

The global vulnerability to natural disasters, vector-borne diseases, and epidemics of weather- and climate-sensitive infectious diseases is likely to increase as the impact of climate change and land degradation processes continue to rise along with rapidly growing populations.

Early warning systems based on space-based technologies such as remote sensing satellites, communication satellites, and global navigation satellites systems, contribute to the availability and dissemination of information to support the response to such disasters. Space-based solutions also have been used to improve risk-mapping and prediction models of epidemic diseases. However, approaches still are limited due to the complexity of the problem, the knowledge gap between medical experts and space experts, and the fact that no single institution or country has all the needed capacities.

Keywords: climate; disaster medicine; early warning systems; emergency medicine; space-based; vulnerability

Emergency Communication Inter-Operability Planning for Disaster Response

Mohamad H. Alzaghal
Jordan Armed Forces, Amman, Jordan

Recently, the world has been affected by man-made and natural disasters of a level not previously experienced. This demonstrates the importance of communication for the efficient and rapid response of First Responder Community members in the field.

The resilience of the communication infrastructure is vital for the well-being of any country. It is essential to build a robust and interoperable information and communication technology infrastructure before a disaster.

Overviews for most currently available information and communication technology standards will be introduced in order to define emergency communication interoperability plans.

Training is important so that First Responder Community members will be ready to implement these emergency communications plans. Exercises such as Strong Angel III (SAIII) often are the best approach to explore different information and communication technology systems and their resilience in the context of power, range, and inter-operability in case of disasters.

The Hashemite Kingdom of Jordan may benefit from studying the US experience in emergency communications and may consider modifying its communications inter-operability plans and improve its infrastructure to enhance readiness for disasters. Jordan's current emergency communications inter-operability plans, policies, Emergency Operation Plans (EOPs) were explored and Jordan's High Availability/Disaster Recovery communications readiness level versus the US was explored.

Based on the technological aspects of emergency communications, particularly as they relate to Jordan's communications environment, a requirements analysis of Jordan's emergency communications plan and lessons learned from the US experience, a proposed Jordan Emergency Communications Interoperability Plan (JECIP) would be introduced.

Prehospital Application of Telemedicine during Sudden-Onset Disasters

Matthew Turnock; Negin Mastouri; Alim Jivraj
McMaster University, Hamilton, Ontario Canada

Introduction: The unique conditions and stresses acute-onset disasters place on the traditional healthcare system require the efficient use of healthcare resources outside of the hospital setting. Furthermore, there is a critical need for effective information management and communication in generating coordinated actions between medical response groups in order to treat serious health problems. Telemedicine is a rapidly emerging field with the potential to addresses both concerns.
Methods: A structured review of PubMed, the Cochrane Library, ISI Web of Knowledge, EMBASE, and Inspec was conducted along with searches of identified articles' reference lists. Papers were not included if they involved homecare, if they dealt exclusively with telemedical technology, or if they were in a language other than English or Persian.
Results: Four papers discussed the clinical benefits of telemedicine in simulated mass-casualty incidents, and only one in real disaster situations. Conversely, a wide range of papers that outlined telemedical technology and infrastructure suitable for disaster response, in addition to its use in non-disaster prehospital medical care were identified.
Conclusions: Documented experience of the use of telemedicine during disasters is limited. Telemedicine technologies and methods can be applied to remotely assist medical triage and transportation decision-making in the prehospital setting and increase the capabilities of in-field medical personnel by providing access to primary and specialty medical care expertise.

The Global EMS Forum: Implementation of an International Emergency Medical Services Networking and Information-Sharing Platform

Darren Walter;[1] Nadine Levick;[2] Patrick Bourke;[2] Steve Rapanos;[2] John Chew;[2] Jay Reich;[2] Dave Kingdon;[2] Jerry Overton[2]
1. University Hospital of South Manchester, Manchester, UK
2. Global EMS Forum, New York, New York USA

Introduction: Global forums for sharing current information, practice, policy, and research are established for many healthcare disciplines. There is an unmet need for a global emergency medical services (EMS) platform to share ideas and learning as an adjunct to existing annual conference infrastructure. The implementation of a free-access electronic global forum for EMS information sharing and networking is described.
Methods: Emergency medical services practitioners seeking global collaboration who are involved in international activities were identified. The scope of the forum is intended to embrace all EMS environments, from well-established systems to the more rudimentary, covering a broad spectrum of EMS operations. To facilitate global knowledge transfer, its structure utilizes electronic Voice Over Internet Protocol (VOIP) and "Webinar" technology. Activities are designed to be multidisciplinary, cost- and time-effective with real-time, online "Webinars", and subsequent electronic access to presentation recordings and handouts.
Results: The Global EMS Forum, launched in January 2007, is maintained by a volunteer team of EMS providers and academics with in-kind support on an honorary platform. Webinars are in April/May and September/October, with international speakers and recognized leaders in designated fields. Topics covered have been: (1) EMS and road safety; (2) EMS visibility/conspicuity issues; (3) international ambulance standards; and (4) priority dispatch policies. Respective handout accesses to January 2009 are, 513; 3584; 4214; 651, with a <100 times access increase within six months of each presentation.
Conclusions: Establishment of a sustained, free-access Global EMS Forum through an honorary virtual network has been achieved with increasing interest. Involvement is gratis, and accessible at http://www.globalEMSForum.org.