

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.

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## 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

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### 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.