



Workshop Summary

Natural Disaster Health Research Network

March 2003

Workshop - Dealing with Disasters: Impacts on Human Health 27-28 September, 2002, London, Ontario

Workshop Summary – Natural Disaster Health Research Network

On 27-28 September, 2002, the Institute for Catastrophic Loss Reduction of the University of Western Ontario hosted a Workshop entitled “Dealing with Disasters: Impacts on Human Health”. It was attended by about 60 participants from the fields of emergency management, weather and climate sciences, health sciences and public health, engineering sciences, and other areas of expertise. The participants discussed the relationships between weather-related natural hazards and human health, and agreed to develop a Natural Disaster Health Research Network. The discussions and recommendations resulting from the Workshop are summarized below.

Objectives and Activities of a Natural Disaster Health Research Network

A multi-disciplinary approach is needed to understand the connections between weather, climate, climate change and variability, and particularly climate extremes and human health. At the same time, the pursuit of excellence often requires a narrow focus. The Network should therefore foster the development and pursuit of collaborative, cross-disciplinary research covering the 3 perspectives of weather or climate, disasters, and health and well-being, ideally leading to jointly-authored papers. The Network needs to encourage practitioners in non-research oriented positions to contribute to research as authors, contributors or reviewers. Funding for disaster research studies is often in response to the most recent disaster, and hence tends to be reactive in nature. The Network therefore needs to encourage the Canadian research funding agencies to adopt forward looking funding strategies for research into the causes and effects of natural disasters.

The Network should focus on best research practices and policies, directed towards practical projects that are designed and implemented with an evaluation component. It should emphasize practice - research partnerships that would draw on a wide range of disciplines and experience, especially in developing best practices for disaster response and mitigation.

Recommendation 1: A Canadian Research Network is needed to better understand the causes and the health, social, and economic consequences of natural disasters

The growing body of published knowledge needs to be better organized and better communicated across the community of people who deal with disasters. The knowledge needs to be timely, easily accessible, easily understood, and relevant. There is a need to better identify the expertise available in Canada and internationally. Active involvement in the Network is needed from researchers, information users, service providers, and other interested persons and organizations at the local, regional, and national levels.

The Network should foster innovative thinking, the active exchange of ideas, collaborative interdisciplinary research, and better communication and use of research results.

Recommendation 2 : A research agenda should be developed, based on the themes for research that emerged from the Workshop.

As a first task, the Network should prepare a well-defined research agenda, identifying:

- Statements of principle;
- Disaster Impacts to be addressed;
- A range of priority research projects.

The Network should include a Secretariat to provide organizational services. It needs to create a forward-looking planning document and research agenda that highlights both short and long-term goals. The workshop discussions provided many ideas and approaches for a research agenda, as indicated below.

A. Social sciences research on natural hazards to provide to better understanding of:

- Vulnerability
- Social resilience
- Adaptive capacity and
- Behavioural change.

Care should be taken to avoid the usual generalizations about health and population sub-groups, and to try to understand “social resilience” i.e., why some communities are better equipped than others to cope with natural disasters. The research should focus on social and health impacts of weather in general, not just extreme events, including temperature conditions and dry spells or droughts.

B. Our Health Services System and natural hazards

- The health care system is becoming less resilient and more vulnerable due to the convergence of heavy workloads and external stressors, such as natural disasters.
- The “just in time” management of hospital services, and the amalgamation of hospitals through regional boards are also increasing the vulnerability of health care services. Some of the essential hospital supplies and services are now delivered from a variety of locations within a region and may not be available on site during emergencies.
- Research needs to focus more on the long-term rather than the acute health effects. Disaster-related health problems may require help from non-medical agencies because people cannot cope unaided with the consequences of disasters.
- A unified disaster reporting structure is needed to better understand the scope of weather-related health effects, and the necessary responses to climate and weather-related extremes.

C. Public Health

- The public health infrastructure encompasses more than just the public health unit, and is a key factor in emergency preparedness and response. However, the public health infrastructure is often neglected because there is little advocacy for its study and strengthening. Therefore information sessions should be held to explain how the public health system plans and responds to disasters, and to identify the best tools and practices currently in place.
- Within Canada, the opportunities for training in disaster public health are very limited. Therefore the Network should research the implications of this weakness, and should stimulate the development of appropriate training programs and capacities to deal with future disasters.
- There is a need to better understand our capacity to cope with infectious diseases and to deliver mass vaccinations in response to natural disasters, bio-terrorism threats, etc.

D. Physical Injuries

- Research and action are needed to develop a culture of injury prevention during and after natural disasters through greater public awareness and public education. The Network should encourage education policies and legislation to address natural hazards in communities, and to promote a better understanding of the risks and responsibilities of individuals and organizations when making choices.
- Research should focus on enhancing building codes and warning systems and also other systems to prevent physical injury.

E. Mental Health Damage

- Broad research is needed to better recognize and deal with the mental health, social, and psychosocial impacts of disasters. A shift in research focus is needed to address these profound and insidious community-wide effects of disasters in addition to addressing physical injury and trauma. Empirically informed guidelines are required for adequate planning of immediate and long-term community psychosocial responses to disaster.. \

F. Population Displacement

- Population displacements before or following a disaster can both save lives and create problems. There is need to study such events, including the roles and responsibilities of individuals and organizations, including:
 - a) Current volunteer capacity, support for volunteers, benefits or limitations of volunteers in hazard response, volunteer coordination and retention, volunteer infrastructure to cope with large-scale or multiple events.
 - b) Detailed accounts of true disaster volunteers and current capacity to cope with these events, professional responsibilities of volunteers, and crossovers between functions ; necessary volunteer training, and the co-benefits of training and involvement.
 - c) An assessment of the infrastructure needed to support large-scale disaster responses and people's generosity during an event and multiple events,

including transportation system shut downs during emergency evacuations of populations. An examination of the legislation needed to protect volunteers and researchers during all phases of disaster preparation and response.

- d) Thresholds beyond which the current professionals could cope.
- e) Immediate and long-term psychosocial effects of the disruption of community social support networks and development of measures to prevent such disruption and to restore community functioning following disaster.

G. Climate Change effects on weather and human health and well-being

- Weather-related events which affect human health
 - Warming and its effects on illnesses and infectious diseases, including new diseases in Canada transmitted by or from animals.
 - The causes and consequences of the Ice storm and other recent natural disasters need to be further examined.
- The role of disaster forecasting systems to reduce disaster impacts, including those on transportation systems
- The importance of climate trends in planning infrastructure and buildings
- Flooding and health problems due to mold
- Local power generation
- Climate, weather and health data and related policies need to be improved to help facilitate research and analysis.

H. Quick Response Disaster Research Team(s)

- Funding is needed for rapid-response research on disaster impacts to capture time sensitive information. Creation of a dedicated funding source, possibly funneled through ICLR, would allow researchers to immediately gather “perishable” information at disaster sites.

Recommendation 3 : The Network should have a strong communications function.

These functions would include:

- Formal partnerships as a key function of a long-term successful Network.
- Network goals covering research and changes in approach, with realistic measures of success.
- Relevant and strategic Network research objectives.
- Creative mechanisms to make effective linkages within the Network for a broad range of participants, such as :
 - “Translators” able to make the scientific literature and other documents easily understandable and useful for practitioners;
 - Training opportunities for capacity building (funding to place practitioners in a research environment for a year and vice versa).
- An active Network membership recruitment process.
- A document outlining the issues facing the various societal groups (individual, community, nation, global).

Recommendation 4: The Network should form partnerships for communication and public education on natural hazards, climate change, and health.

The Network's Role in Providing Information

Canadian communities have an uneven capacity and expertise in preparing and implementing emergency response plans. However, Ontario, Quebec, and other provinces now require that municipalities have emergency preparedness plans.

Public education is needed to create a safety-conscious culture, shifting from reactive to a proactive approach. Public education materials need to have a firm scientific basis, and should be presented in a balanced manner. Research made public through the Network should be scientifically rigorous, thorough, innovative, and up-to-date. Citizens need to understand both the benefits and limitations of awareness, advocacy, communication, and research.

The Network needs to create linkages with the news media, as they are important in informing people, and in altering their behaviour.

There is a need to develop better information on a wide range of issues, including:

- health effects information, including mental health impacts, with specifics: what, who, when and how;
- climatic extremes and their effects on health and well-being;
- environmental indicators for extreme weather events and their links to climate change and health;
- health information relating to population health and disaster vulnerability;
- public and organizational awareness of natural hazards, and the state of preparedness of their disaster management system (including level of action taken).

Overall, there is a need for a better data and information storage and retrieval system, with standardized methods for data collection and data organization. The system presently largely relies on voluntary information. In the field of health care, there are general problems with access to information, partly due to privacy concerns, proprietary data bases, and a mix of cost-free and fee-based data, which impede data sharing. The information needs to be available not only to the medical community, but also to Network researchers and others. STATScan is now sharing some data with universities. The proposed Canadian Information System for the Environment (CISE) is a possible model. The information base should include a catalog of "stories" or case studies that help build the case for policy development and funding.

Research Funding and other issues

The Network will need to improve the recognition of the importance of disaster management research. It can do so by sharing and publicizing the results of good research work on the

relationships between climate, natural disasters, and health and well-being. This can attract and keep the interest of government, funding agencies, public health and disaster management practitioners, and the public. Funding for research needs to be at a sustainable level and not dependent on the most recent major disaster. Many health professionals work on fee-for-service bases, which means that in many cases volunteer work is not encouraged or practiced. Grants and training opportunities to enable health and disaster practitioners to become involved in research, would help in developing multi-disciplinary teams. The Determinants of Health are an excellent framework to use, and Network operating principles could be shaped around this model. The Network needs to form a wide range of partnerships by connecting to organizations with common goals, such as:

- Canadian Institutes for Health Research
- Canadian Health Services Research Foundation
- Centre for Health and Well-Being at UWO

Summary and Actions

There was a strong consensus among meeting participants that there was a need for a Natural Disaster Health Research Network and that they wished to be part of it. The preceding sections of this summarized the participants' guidance regarding the nature, functions, and development of the Network. The Network can bring people and organizations together, and can facilitate access to available data beyond mortality and morbidity data. ICLR was requested to be the National Disaster and Health Research Network (NDHRN) developer, and to be an advocate for research funding. It was agreed that the following initial actions by ICLR were appropriate:

1. Creation of **Quick Response Disaster Research Teams** in Canada to investigate disasters while they are impending and immediately after they happen. Research proposals and teams would be considered and tentatively approved beforehand, and activated when a disaster happens.
2. Creation of a **Pilot Project on (Extreme) Weather Events and Health** to create an initial substantive report, and recommendations for future projects.
3. Preparation of a set of regional **scenarios of plausible futures**, for changing **weather**, including extremes, with the changing **climate**, and their impacts on **human health**.
4. The NDHRN begin work on:
 - a. the creation of research teams in priority areas.
 - b. an advocacy role for better funding support for these projects.
