

Health Indicators of **disaster risk management**

in the Context of the Rio+20 UN Conference on Sustainable Development

Initial findings from a WHO Expert Consultation: 17-18 May 2012

Key messages:

Health system resilience and capacity for emergency risk management are critical to effective disaster management supporting sustainability goals.

- **Monitoring and reporting on the human health aspects of disasters** – as part of measures to improve risk assessment, prevention, preparedness, response, and recovery measures – is important for strengthening disaster risk management. This will help reduce health impacts, particularly the loss of human lives.
- **Building health system resilience and capacity for emergency risk management**, particularly at a community level, is critical to effective disaster management, which also supports wider sustainability objectives.
- **Indicators of health system resilience to natural disasters include the proportion of health facilities, new and improved, able to withstand hazards and prepared for emergency response**, including access to reliable clean energy and water supplies, daily and in emergencies.

1. Linkages between disaster risk management policies and public health

Between 2000 and 2009, an average of some 270 million people annually were affected by natural and technological disasters.¹ And over 1.1 million deaths were recorded in large-scale natural disasters – some 4130 events in all - in the past decade.² Accordingly, disasters are one of seven key thematic areas in the Rio+20 UN Conference on Sustainable Development. Health system resilience and capacity for emergency risk management are critical to effective disaster management – regardless of whether the disaster is due to a natural hazard, an environmental incident, disease threat, armed conflict, or some combination of factors. Health impacts of disasters also are typically greater in countries and communities with the least resources. For instance:

- Over 1.5 billion people live in countries affected by violent conflicts.³ Excessive deaths from infectious diseases, malnutrition, and chronic disease are associated with societal disruption.
- Of the 20 countries with the highest childhood mortality rates in the world,⁴ at least 15 have experienced civil conflicts over the past two decades. Similarly, 9 out of the 10 countries with the highest ratios of maternal mortality have recently experienced conflict.³
- In 2012, an estimated 51 million people in 16 countries will require humanitarian assistance.⁵

¹ EM-DAT: The OFDA/CRED International Disaster Database [online database]. Université Catholique de Louvain, Brussels, Centre for Research on the Epidemiology of Disasters, 2009 (www.emdat.be).

² *UN-ISDR search*. Geneva, United Nations International Strategy for Disaster Reduction, 2012 (http://www.unisdr.org/files/25129_towardsapost2015frameworkfordisaste.pdf).

³ *World development report 2011: conflict, security, and development*. Washington, World Bank, 2011.

⁴ *State of the world's children report 2011: children in an urban world*. New York, United Nations Children's Fund, 2011.

⁵ Amos V. *Under-Secretary-General for Humanitarian Affairs and Emergency Relief Coordinator press briefing*. Geneva, United Nations Office for the Coordination of Humanitarian Affairs, 2011.

Unsustainable rural development and urbanization also place more of the world's population at risk:

- In the past 30 years, the proportion of people living in flood-prone river basins has increased by 114% while the proportion of people living on cyclone-exposed coastlines grew by 192%.⁶
- Over half of the world's large cities (2-15 million) are highly vulnerable to seismic activity.

Rio+20 has highlighted the need for a more integrated approach to disaster risk management. In terms of prevention and preparedness, the *Hyogo Framework for Action* places emphasis on more comprehensive risk assessment and more resilient and prepared communities.^{7,8,9} Response and recovery require coordination and early action with particular attention to nutrition, water, sanitation, and shelter for the displaced; and health services including trauma care, injury prevention, communicable and noncommunicable diseases, and mental, reproductive and environmental health.

2. Core health indicators that can monitor progress and identify success

Resilient health services and infrastructure can enhance the effectiveness of disaster management while simultaneously supporting wider sustainability objectives (e.g. low-carbon renewable energy solutions are used to maintain operational capacity of health care facilities in emergencies). Identifying health-relevant "indicators" of successful disaster risk management in the context of sustainable development can help provide a more robust approach to disasters overall. Noted here are some examples of core indicators, considered at the WHO Expert Consultation:

Hazard impacts on human health and wellbeing

- Number and rates of disaster-related deaths, injuries, illness, malnutrition, and disability reported annually at national level;

Reporting of disaster data on health impacts at a national level

- Proportion of countries reporting disaster events on an annual basis in terms of deaths, injuries, diseases, missing persons, and disabilities;

Assessment of emergency and disaster-related risks

- Proportion of countries with annual multi-sector risk assessments that address natural, technological, biological, and societal hazards as well as health vulnerabilities and capacities;

Development planning to reduce health impacts of disasters

- Proportion of land use, building, infrastructure, and economic development plans that incorporate health impact assessment of disaster-related risks into plans and strategies;
- Proportion of residential and commercial buildings in disaster-prone areas that meet building codes (e.g. for earthquakes/flooding) designed to reduce loss of lives;

⁶ UNISDR *global assessment report 2011: revealing risk, redefining development*. Geneva, United Nations international Strategy for Disaster Reduction, 2011 (<http://www.preventionweb.net/english/hyogo/gar/2011/en/home/index.html>).

⁷ The Hyogo Framework for Action 2005-2015: building the resilience of nations and communities to disasters. In: *The World Conference on Disaster Reduction, Kobe, 18-22 January, 2005. Final Report*. Geneva, United Nations Strategy for Disaster Reduction, 2007 (A/CONF.206/6).

⁸ Chair summaries. In: *2nd Session of the Global Platform for Disaster Risk Reduction, Geneva, 16-19 June, 2009*. Geneva, United Nations Strategy for Disaster Reduction, 2009.

⁹ Chair summaries. In: *3rd Session of the Global Platform for Disaster Risk Reduction, Geneva, 8-13 May, 2011*. Geneva, United Nations Strategy for Disaster Reduction, 2011.

Safer, prepared and resilient health facilities

- Proportion of existing health facilities in hazard-prone areas that have been assessed and improved in terms of safety, security, and preparedness as well as for access to clean energy and water supplies, daily and in emergencies;
- Proportion of new health facilities built in compliance with building codes and standards to withstand hazards, and with access to clean energy and water supplies, daily and in emergencies.

3. Expanded indicators

National health emergency risk management programmes

- Number of countries with a national programme for all-hazards health emergency risk management that give emphasis to vulnerable populations and include a multi-disciplinary coordination body and regular budget;^{10,11}

Health services for disasters (health coverage indicator)

- Average population per health unit (primary health care facilities offering general health services) by administrative unit or country (*benchmark for this indicator is <10 000 people per unit*);^{12,13}

International health regulations

- Proportion of countries complying with International Health Regulations (2005).¹⁴

Community resilience

Members of the population are connected to one another and work together so they are able to:

- function and sustain critical systems, even under stress;
- adapt to changes in the physical, social, or economic environment;
- be self-reliant if external resources are limited or cut off; and
- learn from experience to improve over time.¹⁵

4. Added value of these health indicators

These indicators explicitly recognize human health as a priority of disaster risk management, including as part of prevention, preparedness, and response for disasters. These indicators highlight the health sector role which can be strengthened through incorporation of disaster-related health programmes in national health and multisectoral strategies, in performance measures, and among

¹⁰ Resolution 64.10. Strengthening national health emergency and disaster management capacities and resilience of health systems. In: *Sixty-fourth World Health Assembly, Geneva, 16-24 May 2011*. Geneva, World Health Organization, 2011.

¹¹ *Risk reduction and emergency preparedness: WHO six-year strategy for the health sector and community capacity development*. Geneva, World Health Organization, 2007
(http://www.who.int/hac/techguidance/preparedness/emergency_preparedness_eng.pdf).

¹² *Health Resources Availability Mapping System (HeRAMS): approach & roles and responsibilities of the cluster*. Geneva, World Health Organization, 2009.

¹³ *The SPHERE Handbook: humanitarian charter and minimum standards in humanitarian response*. Geneva, The Sphere Project, 2011.

¹⁴ Note: While the implementation of IHR is not a comprehensive indicator for disasters, implementation of IHR and the development of associated core capacities are a strong health sector contribution to disaster management and sustainable development. *International health regulations (2005), 2nd Edition*. Geneva, World Health Organization, 2005.

¹⁵ Arbon P. *Building resilient communities*. Torrens Resilience Institute, April 2012
(http://www.flinders.edu.au/for_business_and_community_files/Documents/anglicare/Arbon%20ANZDEMC%202012%20Resilience.pdf).

resource allocation priorities. Disaster risk management strategies should incorporate indicators that reflect the overall availability of health services and health coverage during emergencies.

5. Feasibility of data reporting

Risk assessments and disaster-related data on deaths, disease, and disabilities

- To accurately track impacts and trends, data on disaster impacts needs to be collected using more robust systematic methodologies.
- Global health statistics for mortality/morbidity impacts from disasters needs strengthening.¹⁶
- Analysis of health vulnerabilities and needs for capacity-development should be strengthened in risk assessments (including the UNISDR *Global Assessment Report*) and economic analyses.¹⁷
- A global research strategy for disaster health would help address the deficiencies in data and evidence on disaster risks and interventions.

WHO collects data and provides reports on national health emergency risk management programmes, implementation of safer hospitals programmes,¹⁸ and implementation of the International Health Regulations.¹⁹ In terms of availability of health services during disasters, data sources are the Ministries of Health and the international health clusters in humanitarian emergencies.

6. Cross-cutting issues for further consideration

Capacity-building

While some countries such as Bangladesh, Cuba, Indonesia, Mozambique, Oman, Philippines, and Turkey have strengthened their capacity for disaster risk management, other countries have weak health and disaster management systems, lack access to resources and know-how, and are experiencing continued insecurity due to conflict.

Linkages with other sector policies and themes in Rio+20

A focus on disaster risk management and health is needed by all thematic areas addressed at Rio+20 to show the linkages between health, disaster management and other aspects of sustainable development. For instance, development policies need to adopt strategies and codes for land use, buildings, and infrastructure that are resilient to disasters and reduce health risks to the occupants.

Equity

Extremely limited funding is available from national and international sources for building capacities for emergency risk management programmes in countries that are most at risk of disaster. Hazards affect different groups of people in different ways. For instance, in many types of disasters and conflicts, women and girls face risks related to sexual assault and other forms of violence while traditions and conditions may hamper their ability to protect themselves (e.g. type of clothing, an inability to swim, pregnancy, etc.). Thus, reporting on the health indicators for disaster management

¹⁶ E.g. WHO World Health Statistics and WHO Global Burden of Disease reporting data.

¹⁷ *UNISDR Global Assessment Report 2011: revealing risk, redefining development*. Geneva, United Nations Strategy for Disaster Reduction, 2011 (<http://www.preventionweb.net/english/hyogo/gar/2011/en/home/index.html>).

¹⁸ Proceedings. In: *3rd Session of the Global Platform for Disaster Risk Reduction and World Reconstruction Conference, Geneva, 8-13 May, 2011*. Geneva, United Nations Strategy for Disaster Reduction, 2011 (<http://www.preventionweb.net/globalplatform/2011/documents/GP2011-Proceedings.pdf>).

¹⁹ *Checklist and indicators for monitoring progress in the development of IHR core capacities in States Parties*. Geneva, World Health Organization, 2010.

programmes needs to be differentiated to take account of variance in vulnerabilities, resilience, and response capacities related to not only gender but also socio-economic factors, age, disability, mobility, social isolation, and ethnicity.

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