Health Emergency and Disaster Risk Management
OVERVIEW

What is health emergency and disaster risk management?

Emergencies and disasters often result in significant impacts on people's health, including the loss of many lives, and serious disruptions of the functioning of communities.[1] Every new threat reveals the challenges for managing health risks and effects of emergencies and disasters. Deaths, injuries, diseases, disabilities, psychosocial problems and other health impacts can be avoided or reduced by emergency risk management measures involving health and other sectors.

Health emergency and disaster risk management (Health-EDRM) is multisectoral and refers to the systematic analysis and management of health risks, posed by hazardous events, including emergencies and disasters, through a combination of:

- hazard, exposure and vulnerability reduction to prevent and mitigate risks,
- preparedness,
- response, and
- recovery.

The traditional focus of the health sector has been on the response to emergencies. The ongoing challenge is to broaden the focus of Health-EDRM from that of response and recovery to a more proactive approach which emphasizes prevention and mitigation, and the development of community and country capacities to provide timely and effective response and recovery. Resilient health systems based on primary health care at the community level can reduce underlying vulnerability, protect health facilities and services, and scale-up the response to meet the wide-ranging health needs in emergencies and disasters.

Health emergency and disaster risk management is
"EVERYBODY'S BUSINESS"

Advocating for health emergency and disaster risk management

These advocacy materials are an introduction for health workers engaged in Health-EDRM and for multisectoral partners to consider how to integrate health into their emergency risk management strategies.

This overview places Health-EDRM in the context of multisectoral action and focuses on the generic elements, including potential hazards, vulnerabilities of a population, and capacities, which apply across the various health domains.

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The accompanying fact sheets identify key points for consideration within a number of essential health domains. Importantly, all health domains are interlinked; each fact sheet should therefore be considered as part of the entire set and in conjunction with the overview.

Why is there a need for health emergency and disaster risk management?

In 2015, from 346 reported disasters linked to natural hazards, an estimated 22,500 deaths, 100 million affected and over $66 billion economic damages were caused.[2] While these data refer to large-scale disasters, there are many more smaller-scale hazardous events, emergencies and disasters that affect communities, their health and livelihoods.

Using an all hazards approach, which includes natural, biological, technological and societal hazards, the health of populations are put at risk. Examples of hazards include:

- Natural: earthquake, landslide, tsunami, cyclones, extreme temperatures, floods or droughts
- Biological: disease outbreaks including human, animal and plant epidemics and pandemics
- Technological: chemical and radiological agent release, explosions, transport and infrastructure failures
- Societal: conflict, stampedes, acts of terrorism, migration and humanitarian emergencies

Emergencies and disasters may cause ill-health directly or through the disruption of health systems, facilities and services, leaving many without access to health care in times of emergency. Such events can affect basic infrastructure such as water, food, power supplies and communication.

International consensus views emergencies as barriers to progress on the health-related Sustainable Development Goals (SDGs), as they often set back hard-earned development gains in health and other sectors.

Building community resilience through primary care, South Sudan (WHO, C. Banluta)

UN 2015 landmark agreements in the emergency and disaster risk management context

The recent synchronous adoption of landmark UN agreements the Sendai Framework for Disaster Risk Reduction, Sustainable Development Goals (SDGs), COP21's Paris Climate Conference, World Humanitarian Summit and Habitat III has created a rare but significant opportunity to build coherence across different but overlapping policy areas. The implementation of the International Health Regulations (2005)[3] is also critical to the delivery of these agreements.

The three key 2015 UN landmark agreements are briefly summarized below and shown in Figure 1:

- The Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030 was endorsed by the UN General Assembly and adopted by 187 countries at the 3rd World Conference for Disaster Risk Reduction in Sendai, Japan. It puts health at the centre of global disaster risk reduction policy and advocates for action to reduce disaster risks for the next 15 years. It is a voluntary, non-binding agreement with seven global targets, aimed at the reduction of disaster risk and losses in lives, livelihoods and health.

- The Sustainable Development Goals represent seventeen aspirational "Global Goals" with 169 targets between them, including: the universal call to action to end poverty, protect the planet from climate change and ensure that all people enjoy peace and prosperity. Target 3.d of the Health Goal is to "strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks".

- The international political response to climate change that began at the Rio Earth Summit in 1992 was complemented with the adoption of the Paris Climate Conference in November 2015. The Paris Climate Change Agreement aims to achieve a legally binding and universal agreement on climate and keeping global warming below 2°C.

The International Health Regulations (2005) assist the global community in preventing and responding to acute public health risks that have the potential to cross borders and threaten people worldwide (WHO, 2005). The regulations mandate countries to assess their capacities for disease surveillance and response and report whether these are sufficient to meet their obligations.
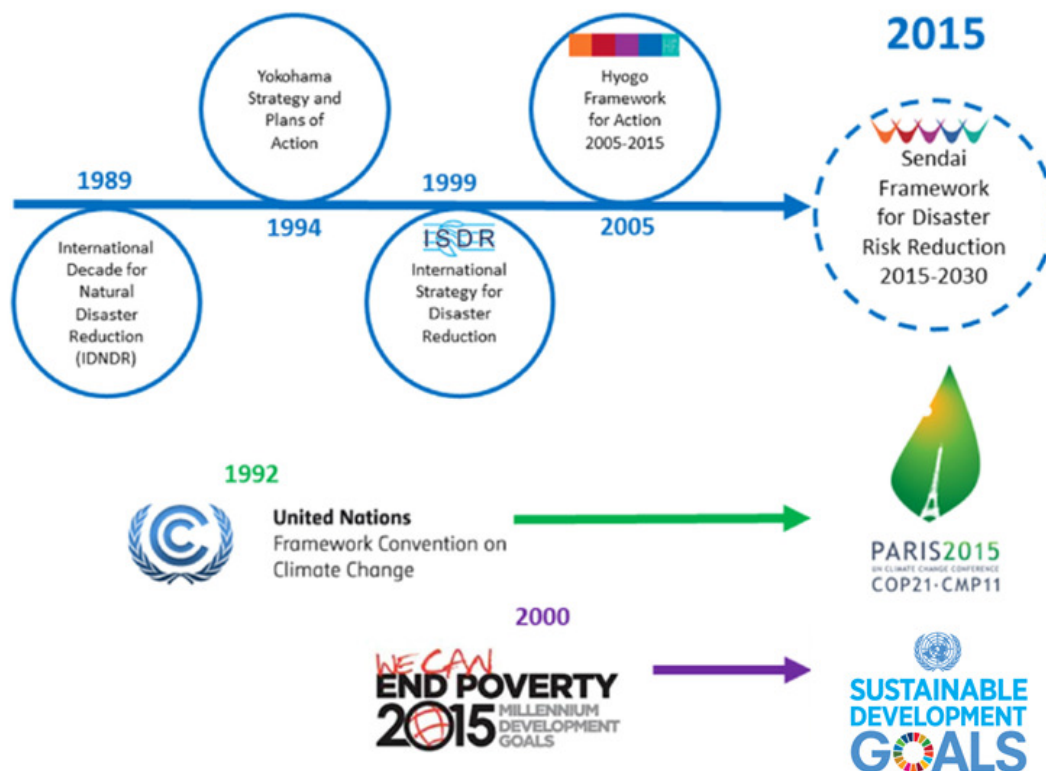

Figure 1: Twenty five years of international commitments to disaster risk reduction. Reproduced from Launch of the 2015 Global Assessment Report on Disaster Risk Reduction by Andrew Maskrey, 2015, Geneva, Switzerland: UNISDR. Reproduced with permission.

Health and the Sendai Framework for Disaster Risk Reduction 2015-2030

Health resilience is strongly promoted throughout the Sendai Framework. The Framework aims to achieve the following outcome over the next 15 years:

> *'The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.'*

Sendai Framework priorities

The Sendai Framework identifies 4 priorities towards strengthening community and country resilience to disasters. Examples of the priority actions referring to health are described below.[4]

Priority 1: Understanding disaster risk

Policies and practices for disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Such knowledge can be leveraged for the purpose of pre-disaster risk assessment, for prevention and mitigation and for the development and implementation of appropriate preparedness and effective response to disasters (Para 23).

Priority actions include:

- *To encourage the use of and strengthening of baselines and periodically assess disaster risks, vulnerability, capacity, exposure, hazard characteristics and their possible sequential effects at the relevant social and spatial scale (Para 24b).*

- *To systematically evaluate, record, share and publicly account for disaster losses and understand the economic, social, health, education, environmental and cultural heritage impacts, as appropriate, in the context of event-specific hazard-exposure and vulnerability information (Para 24d).*

Priority 2: Strengthening disaster risk governance to manage disaster risk

Disaster risk governance at the national, regional and global levels is of great importance for an effective and efficient management of disaster risk. Clear vision, plans, competence, guidance and coordination within and across sectors, as well as participation of relevant stakeholders, are needed. Strengthening disaster risk governance for prevention, mitigation, preparedness, response, recovery and rehabilitation is therefore necessary and fosters collaboration and partnership across mechanisms and institutions for the implementation of instruments relevant to disaster risk reduction and sustainable development (Para 26).

Priority actions include:

- *To adopt and implement national and local disaster risk reduction strategies and plans, across different timescales, with targets, indicators and time frames, aimed at preventing the creation of risk, the reduction of existing risk and the strengthening of economic, social, health and environmental resilience (Para 27b).*

- *To encourage the establishment of necessary mechanisms and incentives to ensure high levels of compliance with the existing safety-enhancing provisions of sectoral laws and regulations, including those addressing land use and urban planning, building codes, environmental and resource management and health and safety standards, and update them, where needed, to ensure an adequate focus on disaster risk management (Para 27d).*

- *To foster collaboration across global and regional mechanisms and institutions for the implementation and coherence of instruments and tools relevant to disaster risk reduction, such as for climate change, biodiversity, sustainable development, poverty eradication, environment, agriculture, health, food and nutrition and others, as appropriate (Para 28b).*

Priority 3: Investing in disaster risk reduction for resilience

Public and private investment in disaster risk prevention and reduction through structural and non-structural measures are essential to enhance the economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment. These can be drivers of innovation, growth and job creation. Such measures are cost-effective and instrumental to save lives, prevent and reduce losses and ensure effective recovery and rehabilitation (Para 29).

Priority actions include:

- *To enhance the resilience of national health systems, including by integrating disaster risk management into primary, secondary and tertiary health care, especially at the local level; developing the capacity of health workers in understanding disaster risk and applying and implementing disaster risk reduction approaches in health work; promoting and enhancing the training capacities in the field of disaster medicine; and supporting and training community health groups in disaster risk reduction approaches in health programmes, in collaboration with other sectors, as well as in the implementation of the International Health Regulations (2005) of the World Health Organization (Para 30i).*

- *To strengthen the design and implementation of inclusive policies and social safety-net mechanisms, including through community involvement, integrated with livelihood enhancement programmes, and access to basic health-care services, including maternal, newborn and child health, sexual and reproductive health, food security and nutrition, housing and education, towards the eradication of poverty, to find durable solutions in the post-disaster*

phase and to empower and assist people disproportionately affected by disasters (Para 30j).

- *To enhance cooperation between health authorities and other relevant stakeholders to strengthen country capacity for disaster risk management for health, the implementation of the International Health Regulations (2005) and the building of resilient health systems (Para 31e).*

Priority 4: Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction

The steady growth of disaster risk, including the increase of people and assets exposure, combined with the lessons learned from past disasters, indicates the need to further strengthen disaster preparedness for response, take action in anticipation of events, integrate disaster risk reduction in response preparedness and ensure that capacities are in place for effective response and recovery at all levels. Empowering women and persons with disabilities to publicly lead and promote gender equitable and universally accessible response, recovery, rehabilitation and reconstruction approaches is key. Disasters have demonstrated that the recovery, rehabilitation and reconstruction phase, which needs to be prepared ahead of a disaster, is a critical opportunity to "Build Back Better", including through integrating disaster risk reduction into development measures, making nations and communities resilient to disasters; (Para 32).

Priority actions include:

- *To promote the resilience of new and existing critical infrastructure, including water, transportation and telecommunications infrastructure, educational facilities, hospitals and other health facilities, to ensure that they remain safe, effective and operational during and after disasters in order to provide live-saving and essential services (Para 33c).*

- *To enhance recovery schemes to provide psychosocial support and mental health services for all people in need (Para 33o).*

Provision of water in refugee camp to reduce diarrhoea, International Red Cross. Reproduced with permission from Evidence Aid.

Sendai Framework targets and indicators

The Sendai Framework for Disaster Risk Reduction identifies 7 Global Targets for assessing national progress in strengthening resilience to disasters.

Target A: Substantially reduce global disaster mortality by 2030, aiming to lower the average per 100,000 global mortality rate in the decade 2020–2030 compared to the period 2005–2015.
Target A indicators includes counts of deaths and missing persons attributed to disasters, and has serious implications for Health-EDRM policies in ensuring resilience and due record of impacts.

Target B: Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 in the decade 2020–2030 compared to the period 2005–2015.
Target B indicators include counts of injured or ill people, as well as persons whose damaged and destroyed dwellings, and disruption or destruction of livelihoods were attributed to disasters. Physical and mental health statuses are risk factors for people's ability to maintain their livelihoods.

Target C: Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030.
Target C indicators assess direct economic loss through damage and destruction of agriculture, productive assets, housing, critical infrastructure and cultural heritage. Each of these has implications for people's health and well-being and for the implementation of Health-EDRM policies and practice.

Target D: Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.
Disruption of basic services relates to those in the educational, health and other basic services sector.

Target E: Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020.
It is essential that risks to health from all hazards and the role of the health sector are integrated in national and local strategies in order to implement Health-EDRM strategies at community and country levels.

Target F: Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of the present Framework by 2030.
Target F assesses international support to developing countries, across funds directed to multilateral agencies, via bilateral mechanisms, technological transfers.

Target G: Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030.
Target G assesses access to early warning and risk information by country at a local and national level, and the protection plans and coverage in place for citizens.

Bangkok Principles for the implementation of the health aspects of the Sendai Framework for Disaster Risk Reduction 2015-2030

The International Conference on the Implementation of the Health Aspects of the Sendai Framework for Disaster Risk Reduction 2015-2030, held on 10-11 March 2016, in Bangkok, Thailand, recommended a set of measures that could assist countries in implementing the health aspects of the Sendai Framework for DRR.[4] Key actions included:

1. Promote systematic integration of health into national and sub-national disaster risk reduction policies and plans and the inclusion of emergency and disaster risk management programs in national and sub-national health strategies.

2. Enhance cooperation between health authorities and other relevant stakeholders to strengthen country capacity for disaster risk management for health, the implementation of the International Health Regulations (2005) and building of resilient health systems.

3. Stimulate people-centred public and private investment in emergency and disaster risk reduction, including in health facilities and infrastructure.

4. Integrate disaster risk reduction into health education and training and strengthen capacity building of health workers in disaster risk reduction.

5. Incorporate disaster-related mortality, morbidity and disability data into multi-hazards early warning system, health core indicators and national risk assessments.

6. Advocate for, and support cross-sectoral, transboundary collaboration including information sharing, and science and technology for all hazards, including biological hazards.

7. Promote coherence and further development of local and national policies and strategies, legal frameworks, regulations, and institutional arrangements.

Structurally reinforced hospital, Ecuador (PAHO)

Country capacities and needs

Progress has been made at global, regional, national and community levels, but the capacity of countries for prevention, preparedness, response and recovery remains extremely variable. Factors affecting capacity include:

- Weak health and disaster management systems.
- Lack of access to resources and know-how.
- Continuing insecurity due to conflict.

But a number of high-risk countries have strengthened their disaster prevention, preparedness and response systems; in some countries, the health sector has led initiatives developing multisectoral approaches to EDRM.

Health emergency and disaster risk management in context

Health systems provide core capacities for Health-EDRM. The development of health systems, Health-EDRM and reducing risk is a long-term development process, managed by countries, communities and individuals working together. Some countries affected by emergencies have limited basic health services and infrastructure, which in itself hugely compounds the challenges of disaster response. Countries with well-developed systems are often much more resilient and better prepared for disasters.

Primary health care (PHC) focuses on basic services to improve health status, which in turn builds community resilience and provides the foundation for responding to emergencies. Policies and strategies focusing on PHC can contribute to decreasing vulnerability and preparing households, communities and health systems for emergencies. Following an emergency, focus is often given to acute care needs and specialist interventions; whilst important, it is usually chronic and pre-existing conditions that constitute the largest burden of disease.

Community-based actions are at the front line of protecting health in emergencies because:

- Local knowledge of local risks is used to address the actual needs of the community.

- Local actions prevent risks at the source, by avoiding exposure to local hazards.

- A prepared, active and well-organized community can reduce risks and the impact of emergencies.

- Many lives can be saved in the first hours after an emergency through community response before external help arrives.

Hospitals and health infrastructure

Health systems are composed of public, private and nongovernmental facilities which work together to serve the community; these include hospitals, primary health care centres, laboratories, pharmacies and blood banks. Safe hospitals programmes ensure health facilities are safely built to withstand hazards, remaining operational in emergencies (refer to WHO Safe Hospitals Initiative for more information).[5]

Developing adaptable and resilient health care systems

Surge capacity: Health care systems need to prepare to cope with large numbers of patients. This may require mobilizing staff around the country to aid affected areas.

Flexibility in health care systems: Flexibility to deliver different functions is an essential component of health care delivery. This may mean reducing some services in order to increase others.

Business continuity planning: Plans to maintain the continuity of health sector operations includes identifying priority services, mechanisms for response coordination and communicating with staff and partner organizations.

Risk assessment

There are three broad elements, which are usually considered in risk assessment:

1. Hazard analysis: Identification of the hazards and assessment of the magnitude and probability of their occurrence.

2. Vulnerability analysis: Analysis of vulnerability of individuals, populations, infrastructure and other community elements to the hazards.

3. Capacity analysis: Capacity of the system to manage the health risks, by reducing hazards or vulnerability, or responding to, and recovering from a disaster

Surveillance

Surveillance and monitoring of potential threats to health, particularly from biological, natural and technological (such as chemical and radiological hazards) sources enables early detection and warning to prompt action by the public, health workers and other sectors.

Evidence base

Development of a robust evidence base is necessary to provide support for establishing or strengthening of multisectoral and multidisciplinary emergency risk management programs in at-risk countries; and for the development and roll-out of evidence-based technical guidance and training programs for advancement of Health-EDRM including priority technical areas.

Safe drinking water distribution, Haiti, 2010 (WHO/PAHO)

Reducing vulnerability to health emergencies and disasters: a public health priority[6]

Health risks can be understood in terms of hazards, people's exposure and vulnerability to that hazard and the capacity to manage the risk.[7] Human vulnerability to emergencies is a complex mix of issues that includes social, economic, health and cultural factors. In many situations it is not the hazard itself that necessarily leads to an emergency, but the vulnerability and inability of the population to anticipate, cope with, respond to and recover from its effects.

The burden of emergencies falls disproportionately on vulnerable populations, namely the poor, ethnic minorities, old people, and people with disabilities. Worldwide, the loss of life from climate related emergencies is far higher among the less-developed nations than it is in developed nations. Within each nation, including developed nations, poor people are the most affected.[8] Poverty reduction is an essential component of reducing vulnerability to emergencies. High-risk populations must be prioritized in targeted efforts to mitigate human vulnerability. Various risk factors for human vulnerability to emergency- and disaster-related health outcomes, such as death, injury, illness and disability, include the following:[9]

- Low income
- Low socioeconomic status
- Lack of home ownership
- Single-parent family
- Age: older than 65 years
- Age: younger than 5 years
- Female sex
- Chronic illness
- Disability
- Social isolation or exclusion

In the context of emergency risk management, public health programs build capacities and resilience of individuals and communities to risks, to reduce the impact, cope with and to recover from the effects of adversity.[10] They address issues related to health disparities that arise between the general population and the most vulnerable groups.

Multisectoral action

Strengthening of partnerships, institutional capacities and coordination mechanisms among health and related sectors for global, regional, national and community is essential for effective Health-EDRM.

In order for the health of the population to be protected during and after a disaster, wider determinants of health such as water, sanitation, nutrition, shelter and security also need to be adequately addressed through multisectoral working.

Essential infrastructure such as communications, logistics, energy and water supplies, and emergency services and banking facilities need to be protected through multisectoral working to ensure the continuity of health services.

Development of capacities for Health-EDRM

The health sector requires capacities and relationships with other sectors spanning across the spectrum of emergency risk management measures at community, sub-national, national and international levels. Health risks can be mitigated by decreasing exposures and the human susceptibility to the hazard, and building resilience of individuals, communities and the country to protect health, and respond and recover effectively from a hazard.

An all-hazards Health-EDRM program could be expected to have capacities derived from the health system building blocks, emergency management principles and practices, and IHR (2005) including at national, sub-national and local levels.[11] These capacities include:

1. Policies, strategies, and legislation

A national policy on Health-EDRM should outline the roles and responsibilities of all public, private and civil society stakeholders, for Health-EDRM, and including those responsible for initiatives such as IHR (2005), surveillance and early warning, emergency preparedness, and safe hospitals. Multisectoral EDRM policies and legislation should refer to the protection of people's health and the minimization of health consequences as specific aims.

2. Planning and coordination

Health-EDRM, including specific integration of IHR (2005), should be addressed within the National Health Plan, informed by the risk and capacity assessments. Relevant health considerations should also be fully integrated into multisectoral plans, such as national disaster risk reduction plans, preparedness and response plans, recovery plans and incident management systems. Response plans need to be regularly tested. Health-EDRM coordination mechanisms and/or dedicated units should be established to ensure appropriate coordination across the health sector and with other sectors at each level. They should also have procedures to issue requests for, receive and coordinate international health partners during large scale emergencies exceeding national capacities.

3. Human Resources

Dedicated and skilled personnel to manage Health-EDRM programs and implement activities are required at national, sub-national and local levels. Key human resource management considerations include planning for staffing requirements (including surge capacity for emergency response), education and training for competency development, and occupational health and safety.

4. Financing

Adequate financial allocations are required from Governments, including the Ministry of Health and other sources for developing capacities and implementing programs and activities. Financial mechanisms should also include contingency funding for response and recovery.

5. Information management

Information management capacities will need to be strengthened to support risk/needs assessments, disease surveillance and other early warning systems, monitoring and evaluation, and public communications. It is important that information collection, analysis and dissemination be harmonized across relevant sectors and mechanisms put in place to ensure that "the right information gets to the right people at the right time".

6. Risk Communications

Communicating effectively, including risk communication, is critical to emergency management, especially when relating to other sectors, government authorities, the media, and the general public. The real-time exchange of information, advice and opinions is vital so that everyone at risk is able to take informed decisions to mitigate the effects of the threat (hazard) such as a disease outbreak and take protective and preventive action.

7. Monitoring and evaluation

Processes to monitor progress towards meeting Health-EDRM objectives and core capacities should be integrated into existing health sector monitoring systems. Standardized indicators to monitor risks, capacities, and program implementation are necessary. Sources of relevant indicators include the IHR (2005) monitoring and evaluation framework, the WHO global survey on country capacities for Health-EDRM, and the WHO Southeast Asia Region's Benchmarks for Emergency Preparedness and Response.

8. Health infrastructure and logistics

Making hospitals, health facilities and related infrastructure safe and prepared for emergencies protects the lives of their occupants, enables effective health response and recovery, and protects public and private investments. Supporting logistics will include stockpiling and prepositioning of medicines and supplies, effective supply chains, and reliable transportation and telecommunications.

9. Health and related services

Public health, pre-hospital and facility-based clinical services must be well prepared to respond effectively in the event of an emergency with health consequences. They should have the capacity to scale up service delivery to meet increased health needs and to take specific measures related to certain hazards (e.g. isolation of infectious cases). Representatives from these various disciplines should contribute to risk/capacity assessments, planning, implementation, and monitoring and evaluation.

10. Community capacities for Health-EDRM

For example, many lives can be saved in the first hours after an emergency through effective local response, before external help arrives. The local population will play the lead role in recovery and reconstruction efforts. Participation of communities in risk assessments can reduce risks prior to an emergency occurring. Civil society can contribute to community-level surveillance, household preparedness, local stockpiling, first aid training, and emergency response. The private sector may be responsible for managing critical infrastructure (e.g. water supply, electricity, transport, telecommunications) and contribute to civic activities.

The way forward: converting the Sendai Framework commitments into action

No country - regardless of economic and social development level - is immune from the potentially devastating impacts of emergencies and disasters on people's health. The commitments made by Member States to put health at the centre of the Sendai Framework provide not only a tremendous opportunity for improving health outcomes for people at risk of emergencies, but also challenge the health sector and partners to convert commitments into action.

Multisectoral and health sector regional strategies have been agreed in 2016 which focus on health centred action, such as the IHR, Safe Hospitals and climate change adaptation.
The way forward must be collaborative through partnerships and networks from community to national to global levels within and across all sectors to implement the actions described in this Overview. One such partnership is the WHO Thematic Platform on Health-EDRM which draws upon a range of stakeholders in Member States, the international community and academia to build a multi-disciplinary and multisectoral community to advocate, share information and catalyse action on Health-EDRM and to implement the Sendai Framework for Disaster Risk Reduction through the health sector. The Thematic Platform has helped to formulate the key elements of health advocacy for the Sendai Framework and has facilitated and supported a number of affiliated projects. A Research Group was recently established under the leadership of the Chinese University of Hong Kong and Public Health England to strengthen the evidence base for Health-EDRM.

The WHO Thematic Platform for Health-EDRM and the Research Group welcome expressions of interest to join efforts to strengthen the many different dimensions of country and community capacities for Health-EDRM and to protect every societies' most precious asset – our people. Further contact information about the Thematic Platform can be found on these fact sheets.

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Further reading

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Fact sheet development & partners

This set of advocacy materials for Health-EDRM has been developed by Public Health England and many departments within WHO in Geneva and Regional Offices with the support of the United Nations Office for International Strategy for Disaster Reduction.

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