

Health Emergency and Disaster Risk Management

CLIMATE RISK MANAGEMENT

Key Points

Climate risks have significant effects on public health including: injury, death, communicable diseases such as vector-borne and water-borne diseases, and non-communicable impacts such as malnutrition, heat stress and health effects of air pollution.

A combination of increasing vulnerability and risk of weather-related hazards are expected to result in more extreme events and disasters.

Measures to reduce the health impacts from climate risks, and associated climate change, include:

- enhancing capacity of health systems to reduce risks and respond to emergencies
- including climate-sensitive health risks in disaster risk reduction plans across all sectors
- protecting hospitals and other health infrastructure from climate risks and effects of climate change
- strengthening surveillance and control of infectious disease against climate risk
- improving the use of climate-informed early warning systems by the health sector
- building public health interventions at local level to increase community resilience

Examples

European heat waves (2003 and 2006): *The hot summers of 2003 and 2006 in Europe produced sustained record high temperatures which resulted in markedly higher death rates than normal, particularly amongst the elderly population. In total, 35,000 more deaths occurred in Western Europe during the 2003 summer than expected, and in 2006 an additional 2000 deaths occurred than expected in France alone.*¹

Storms and flooding: *Conservative estimates suggest that around 2.8 billion people were affected by floods between 1980 and 2009, causing more than 500,000 deaths. If no adaptation measures are taken, health losses associated with storms and floods are very likely to increase as extreme rainfall events, floods and tropical cyclones increase.*²

Why is this important?

Globally, the number of reported weather-related natural hazards is increasing^{1,2}:

- Reports of extreme weather events and natural disasters have more than tripled since the 1960s and are expected to continue to become more frequent and severe in many parts of the world.²
- Globally, the frequency of flood events has been increasing; the mortality risk of flooding is expected to increase with economic development before declining.²

The last few decades have seen rapid growth in populations living in flood plains and cyclone-exposed coastal areas, particularly in cities in developing countries.³

Climate change has driven extreme high temperatures and has contributed to more frequent and extreme precipitation events, and altered the intensity of tropical cyclones. Together, these trends will increase the risk of weather-related hazards to human health.^{1,2,3}

What are the health risks?

Climate change is happening now and it inevitably affects the basic requirements for health: clean air and water, sufficient food and adequate shelter. Compared with a future without climate change, the following additional deaths are projected annually from the 2030s: 38,000 due to heat exposure in elderly people, 48,000 due to diarrhoea, 60,000 due to malaria, and 95,000 due to childhood undernutrition.⁴

Climate change brings new challenges and costs to the control of infectious diseases as some are highly sensitive to temperature and rainfall, including cholera and the diarrhoeal diseases, as well as vector-borne diseases including malaria, dengue and schistosomiasis.³ Environmental changes are key risk factors for population displacement and health.

Climate change threatens to reverse the progress that the global public health community has been making against many diseases, and increase the challenges for the disaster risk management community to respond to natural, biological and social emergencies.²

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Risk management considerations

Governments and communities can protect public health from climate-related risks, including climate change, by:

Strengthening health system resilience to manage climate risks^{4,5}

- Strengthening partnerships between emergency management actors, NGOs, private sector, and national health systems to address health risks in climate risk management plans and disaster risk reduction plans.
- Enhancing capacity of health systems for managing short- and long-term climate-related risks, including health risk assessment, early warning and enhanced emergency preparedness for rapid response and recovery from extreme weather events.
- Protecting critical health infrastructure from extreme weather events, ensuring functioning of core public health services during emergencies and making facilities climate-smart with access to sustainable energy (e.g. solar energy, low carbon, low waste)
- Building evidence of impacts and monitoring changes in risk trends over time.

Strengthening surveillance and control of infectious disease against climate risks⁵

- Effective disease surveillance and control become even more important under conditions of rapid environmental change and movement of people, disease vectors and infections.
- Rapid and accurate disease notification at local, national and international levels, in compliance with the International Health Regulations (2005), is the essential basis for planning disease control.
- Approaches such as Integrated Vector Management, which make the best use of proven interventions, such as bed nets, insecticide spraying and environmental management, to control malaria, dengue and other vector-borne tropical diseases, protect against climate risks.



Risk of sea-level rise, Caribbean Sea (B. Carby)

Developing forecasting for extreme weather and public health tailored early warning systems⁵

Developing heat-health action plans which use meteorological information to enhance early warning and effective response over a range of time scales⁶:

- from hours or days (for flood or heat wave warnings),
- to weeks (for seasonal epidemics of vector-borne disease),
- to months (seasonal forecasts of precipitation anomalies allowing planning for flooding or drought),
- to years (for drought and associated food insecurity).

Implementing local public health interventions to build community resilience^{5,7}

- Action on environmental and social determinants of health (e.g. air, water and food quality, housing safety) is critical to protecting populations from broader ranges of expected climate conditions.
- Improving social welfare in emergency situations, particularly educating and empowering women in developing countries, is a fundamental requirement for improving health. It is also essential to strengthening community resilience to disasters and to climate change.
- Screening for and managing cases of malnutrition is needed along with strengthening food security.
- Strategies need to be flexible enough to take into account the diverse composition of modern communities, and include migrants and people from different ethnic and cultural groups, and with different health-seeking behaviours.

References

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