



THE UNIVERSITY OF IOWA COLLEGE OF PUBLIC HEALTH

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# **Health Consequences of Global Warming**

**Introducing Public Health Concerns  
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# **Climate change and human health**

## **RISKS AND RESPONSES**

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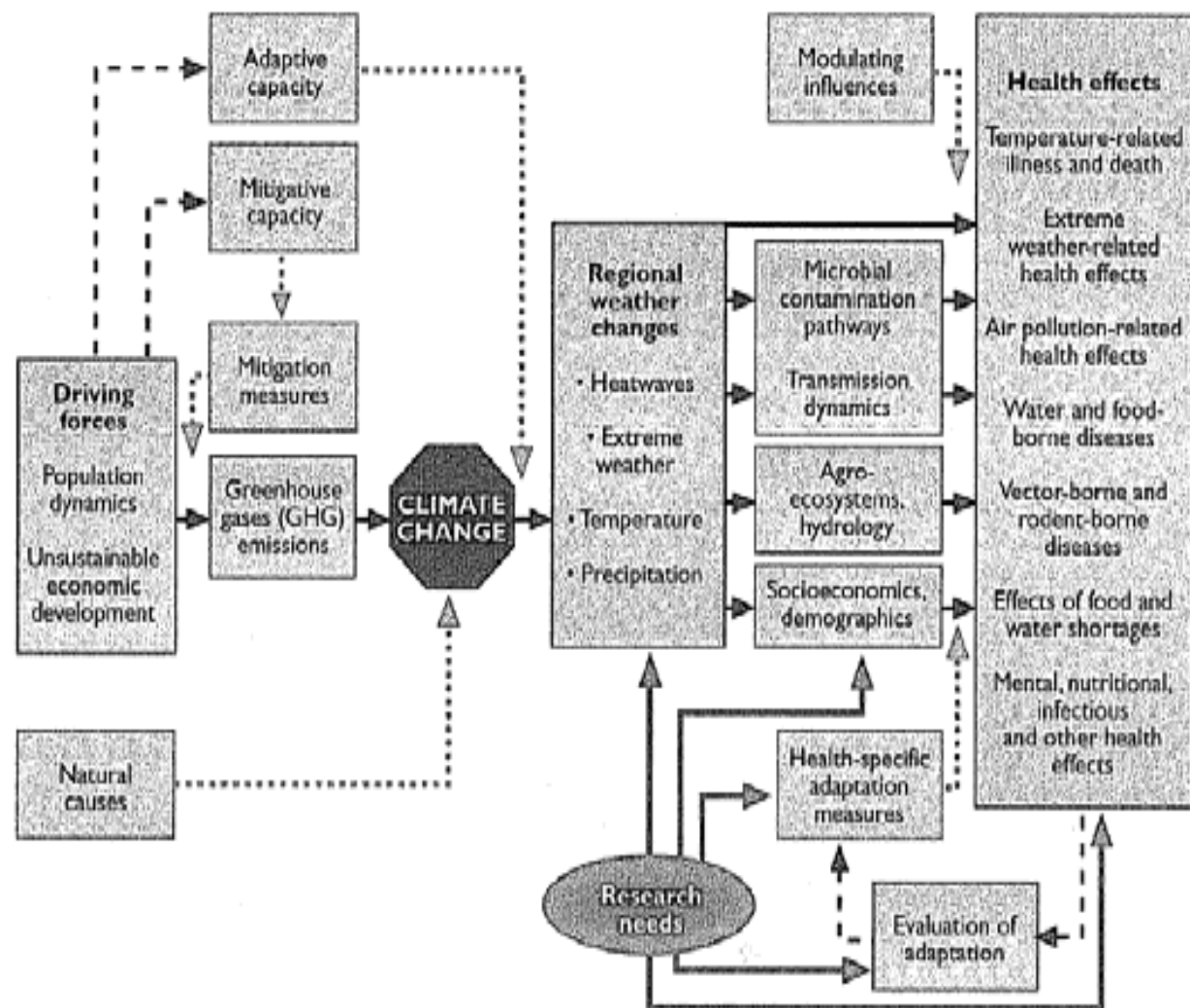
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WORLD HEALTH ORGANIZATION  
**GENEVA**  
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**FIGURE 13.1 Climate change and health: pathway from driving forces, through exposures to potential health impacts.** Lines under research needs represent input required by the health sector. Source: adapted from reference (12).



**TABLE 13.1 Priority health research areas for different risk factors resulting from climate change.**

Risk Factors	Health effects	Priority research areas
Extreme heat or cold; Stagnant air masses	Temperature related illness and death	Improved prediction, warning and response
Strong precipitation variability	Extreme weather related health effects	Assessment of past impacts and effectiveness of warnings
Local air pollution; Stagnant air masses	Air pollution related health effects	Combined effects of climate factors and air pollution; Weather related allergens
Precipitation; Water temperature	Water-borne and food- borne diseases	Climate and marine-related diseases; Climate, land-use impacts on water quality and health
Temperature, humidity, precipitation	Vector-borne and rodent- borne diseases	Climate related disease transmission dynamics; Improved surveillance
Temperature, water scarcity, land use	Nutritional deficiencies	Health and agricultural sector adaptation strategies
Extreme events, population displacement	Mental health	Assessment of past interventions related to emergencies and population displacement

Source: adapted from reference 12.

# The Precautionary Principle and Health Policy

The **precautionary principle** assumes importance because of these uncertainties in forecasting the consequences (health and otherwise) of climate change. Where scientific knowledge is uncertain and the situation complex, and where there is a finite (though perhaps small) risk of serious (possibly irreversible) damage to population health, then preventive action should be taken. That is, in such potentially serious situations, scientific uncertainty does not justify policy inaction.

# Public Health Infrastructure

In order to adapt for health impacts there is a critical general need for a sound and **broadly-based public health infrastructure (including environmental management, public education, food safety regimes, vaccination programs, nutritional support, emergency services and health status monitoring)**. This must be supplemented by health-directed policies in other sectors, including transport, urban planning, industry, agriculture, fisheries, energy, water management and so on.

# From Science to Policy

A successful policy-focused assessment of the potential health impacts of climate change should have several key characteristics:

- Multidisciplinary assessment team;
- Each assessment to answer in a timely fashion questions asked by stakeholders in the public health community;
- Evaluation of risk management of adaptation options;
- Identification and prioritization of key research gaps;
- Characterization and explanation of uncertainties and their implications for decision-making;
- Development of tools in support of decision-making processes.