Climate Change: Preparing for the Health Impacts

With its widespread environmental and human health impacts, climate change has become a global policy issue. Sectors at all levels are being challenged to find collective solutions that safeguard the planet’s integrity and the health of its inhabitants, while enhancing the prosperity and quality of life for communities and individuals.

Countries around the world are responding through the United Nations Framework Convention on Climate Change and the Kyoto Protocol by working to better understand the future climate and to reduce the release of greenhouse gases into the atmosphere. Although crucial, mitigation measures cannot halt climate change, only slow it down or reduce its severity. Therefore, Health Canada and its partners are investigating the impacts of climate change on human health and well-being — and how Canadians can prepare for and adapt to them. This issue of the Health Policy Research Bulletin highlights this work and the important results that are beginning to emerge. In particular, the Bulletin:

• examines the relationship between climate and health, and explores the various pathways by which climate change affects human health and well-being
• explores the type of evidence needed to assess the impacts of climate change on health, and presents the findings from some recent Canadian surveillance and research activities
• highlights the scope and magnitude of current and anticipated health impacts of climate change in Canada and around the world, and examines trends in a number of climate-related health risks
• illustrates how individuals and communities can adapt to the health impacts of climate change, and how governments, organizations and individual Canadians are working together to avoid the most severe impacts and cope with the unavoidable consequences

Certainly, questions remain about the vulnerability of Canadians and their communities to the health impacts of climate change. However, a growing body of research and the recent examples of extreme weather events around the world underscore the health and economic costs of inaction, and the importance of establishing adaptation strategies.
**Major Milestones and Health Initiatives on Climate Change**

**1979**
- 1st World Climate Conference, convened by World Meteorological Organization, calls on government to “foresee and prevent potential man-made changes in climate.”

**1987**

**1990**
- First report by IPCC indicates that the planet has warmed by 0.5°C in past century.
- Canada launches National Action Strategy on Global Warming.

**1992**
- UN Framework Convention on Climate Change (UNFCCC) signed by Canada and 145 other nations, setting initial target to reduce GHG emissions from industrialized countries to 1990 levels by 2000.

**1994**
- Alliance of Small Island States, wary of increases in sea levels, demands 20% cut in emissions by 2005.
- Canada releases First National Report on Climate Change required under UNFCCC.

**1995**
- Berlin Mandate signed at first full meeting of Climate Change Convention.
- IPCC releases Second Assessment Report, stating that “the balance of evidence suggests a discernible human influence on global climate” and predicting that, under a “business as usual” scenario, global temperatures will rise between 1°C and 3.5°C by 2100.

**1997**
- Kyoto Protocol agrees to legally binding emissions cuts for industrialized nations (averaging 5%) to be met by 2012; adopts flexibility measures allowing countries to meet their targets partly by trading emissions permits, establishing carbon sinks such as forests to soak up emissions, and by investing in other countries.
- Canada releases Second National Report on Climate Change required under UNFCCC.
- Environment Canada publishes Canada Country Study: Climate Impacts and Adaptation, a national assessment of potential impacts of climate change and variability.
1996
World Health Organization (WHO) publishes *Climate Change and Human Health.*
Canada introduces Federal Action Program on Climate Change, committing government to reduce its GHG emissions by at least 20% from 1990 levels by 2005.

1998
Hottest year in hottest decade of hottest century of millennium. Canada signs Kyoto Protocol and establishes Climate Change Secretariat to help F/P/T governments develop National Strategy on Climate Change to meet emissions reductions set out in Kyoto Protocol and to manage Climate Change Action Fund. Climate Change and Health Office (CCHO) established at Health Canada.

2000
IPCC scientists reassess likely future emissions and warn that world could warm by as much as 6°C within a century. Series of major floods around world reinforce public concerns that global warming is increasing risk of extreme weather events. Canada releases Action Plan 2000 — 45 measures that target sectors accounting for 90% of country’s GHG emissions. Canadian Climate Impacts and Adaptation Research Network (C-CIARN) established.

2003
Globally, third hottest year on record, but Europe experiences hottest summer for at least 500 years, resulting in over 30,000 fatalities. Extreme weather costs a record $60 billion.
Health Canada launches National Climate Change and Health Vulnerability Assessment, to be completed in 2007.

2004
Russian parliament ratifies Kyoto Protocol, which has now been ratified by nations responsible for over 55% of industrialized country emissions, as required in its regulations.
The Arctic Council releases *Impacts of a Warming Arctic: Arctic Climate Impact Assessment,* reporting on rapid changes occurring in the Arctic.
Canada releases *Climate Change Impacts and Adaptations: A Canadian Perspective,* providing overview of research on climate change impacts and adaptation since 1999.
Health Canada publishes two comprehensive newsletters and holds workshops to develop national research agenda on social impacts of climate change.
Some Terms Related to Climate Change and Health

**Adaptive capacity:** The ability of natural systems, communities, populations or individuals to adapt successfully to climate change so that the negative impacts are lessened or avoided and the potential benefits are maximized.

**Climate:** The average pattern of weather for a particular region.

**Climate change:** A sustained departure from the normal weather patterns in a particular region.

**Climate change adaptation:** Policies, strategies and measures that offset or reduce the effects of climate change and climate variability.

**Climate change vulnerability:** The degree to which a natural system, region, population, community or individual is unable to cope with the negative impacts of climate change.

**Global warming:** A worldwide increase in the Earth’s average surface temperature.

**Greenhouse effect:** The warming of the Earth caused by the heat-capturing ability of certain gases in its atmosphere.

**Greenhouse gas (GHG):** Any of the gases, such as water vapour, carbon dioxide and methane, which absorb the Earth’s radiated heat and warm the atmosphere, thereby contributing to the greenhouse effect. GHGs are released from natural sources or from human activities such as the burning of fossil fuels for electricity generation, industrial processes or transportation.

**Greenhouse gas mitigation:** Actions that reduce greenhouse gas emissions from human activities.

**Smog:** A mixture of solid and liquid fog and smoke particles formed in air under conditions of high heat and humidity.

**Vector:** Organisms that carry disease-causing microorganisms from one host to another.

**Weather:** The condition of the atmosphere at a particular time and place, as characterized by temperature, precipitation, air pressure, wind, humidity, cloudiness and other meteorological variables.

**Zoonosis:** A disease of animals, such as rabies, which can be transmitted to human beings.

About the Health Policy Research Bulletin

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We welcome your feedback, suggestions and requests to be added to our mailing list. Please forward your comments and any address changes to: <bulletininfo@hc-sc.gc.ca>.


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