



# Climate Change, Human Health and Trade

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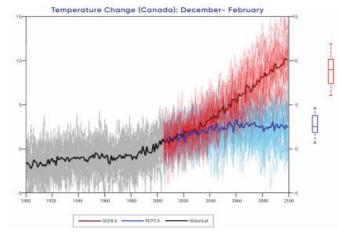
## Canada is Warming Rapidly in Ways that Affect Health

### **Canada's Changing Climate Report 2019**

Many current trends in climate change impacts relevant for health will continue, including:

- More frequent and intense extreme hot temperatures;
- Increased severity of extreme heat events;
- Less extreme cold;
- Increased risk of drought
- Increased risk of wildfires
- Increasing length of the growing season;
- Reduced seasonal lake ice cover across the Arctic;
- Reduced sea ice extent;
- Thinning of glaciers; and
- Warming and melting of permafrost

(Bush & Lemmen, 2019)



https://changingclimate.ca/CCCR2019/

#### 2023 – Record Fire Season in Canada



https://www.ciffc.ca/

## Climate Change, Human Health and Trade

## Health System Resilience Building

- Infrastructures, operations, food and medical supplies
- New technologies
- Mainstreaming

## **Evidence-informed Climate Change Actions**

- New research
- Vulnerability and adaptation assessments
- Surveillance and monitoring

# Cross-sectoral Collaborations to Protect Health

- Network building
- Information sharing
- Institutional coordination



## Trade

#### **Effective Adaptation**

- Proactive and planned
- Future facing anticipate surprises
- Iterative with evaluation
- Inclusive diverse voices





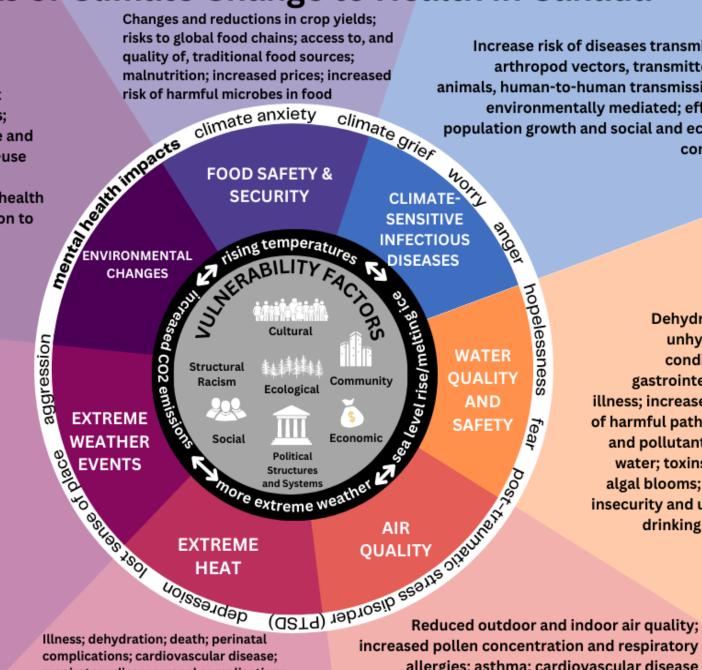
Evidence-based decision making is critical to protect health



## Risks of Climate Change to Health in Canada

Loss of biodiversity; ecological loss; habitat fragmentation and loss; drought; impacts to ice and permafrost thaw; land-use change; pollution; damage to homes and health infrastructure; migration to and within Canada

Flooding (drowning, electrocution, injuries and hypothermia); increased chance of injury and death; extreme heat; damage to physical health infrastructure. displacement including from traditional territories and displacementassociated mental health impacts



Increase risk of diseases transmitted by arthropod vectors, transmitted from animals, human-to-human transmission, and environmentally mediated; effects on population growth and social and economic conditions

> Dehydration; unhygienic conditions; gastrointestinal illness; increased risk of harmful pathogens and pollutants into water; toxins from algal blooms; water insecurity and unsafe drinking water



https://changingclimate.ca/health-in-achanging-climate/

Charness et al., 2023



Health Santé Canada

Illness; dehydration; death; perinatal complications; cardiovascular disease; respiratory disease; renal complications increased pollen concentration and respiratory allergies; asthma; cardiovascular disease

## **Building Capacity to Understand and Address Local Vulnerabilities and Adaptation Needs**

**HealthADAPT Northwest Territories** Department of Health and Social Services Northwestern Institut national de santé publique **First Nations Health** du Québec Authority **New Brunswick** Department of Health Health Centre intégré de Santé et de services sociaux de Chaudière-**Appalaches** York Region Public Centre intégré de Santé et de services sociaux de Dufferin-Guelph

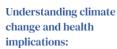
Vulnerability& Adaptation Assessments





https://www.fnha.ca/Documents/FNHA-WATCH-Project-Newsletter-Spring-2021.pdf
https://www.canada.ca/en/health-canada/programs/health-adapt.html
https://www.york.ca/newsroom/campaigns-projects/climate-change-and-health
https://wdgpublichealth.ca/reports/climate-change-and-health-vulnerability-assessment
https://www2.gnb.ca/content/dam/gnb/Departments/h-s/pdf/en/HealthyEnvironments/yourhealthR1.pdf





A background report to New Brunswick's climate change and health vulnerability and adaptation assessment project





Health Canada Santé Canada Health systems must become climate resilient and environmentally sustainable to protect health



## Adaptation and Health System Resilience

 There is currently a health adaptation gap in Canada. Canadian health authorities are undertaking a range of measures to adapt to climate change but are lagging in the development of concrete climate change and health actions in response to growing risks to Canadians.



• Efforts to adapt to climate change impacts on health can significantly reduce impacts from current climate hazards and from future climate change on individual Canadians, communities and health systems.

Health infrastructure, operations, health financing, health care, public health programming, supply chains, and the health workforce can be impacted by extreme weather events and by chronic stresses from longer term warming, reducing access to and quality of care to Canadians.

### Climate variability and change impacts on Canadian health facilities

Alberta Health Services, Alberta, 2013 Unprecedented precipitation led to evacuations from, and damage to, a number of hospitals, emergency

medical services, facilities, physician offices and urgent, continuing, and long term care sites.

Slave Lake Healthcare Centre, Slave Lake, Alberta, 2011 29 patients evacuated from the hospital due to wildfire.

Interior Health, British Columbia, 2017 Wildfires resulted in facility closures, patient transfers and Very High Health Risk air quality warnings from the smoke.

St. Joseph's General Hospital, Comox, British Columbia, 2014 Heavy rainfall resulted in boil water advisory lasting 47 days. Hospital purchased water, required additional labour, and enhanced communication with staff and patients.

Northern Warming Rising temperatures are melting permafrost, requiring additional structural support for healthcare facility buildings.

Royal Victoria Hospital, Barrie, Ontario, 2019 Breakdown of air conditioning during period of high heat and humidity resulted in cancellation of 130 surgeries, patient transfers and re-sterilization of medical equipment and linens.

> Eight health regions in Quebec, 2010 July heat wave resulted in 4% increase in emergency department admissions and 33% increase in crude death rate for regions affected.

Hotel-Dieu of St. Joseph Hospital,

Perth-Andover, New Brunswick, 2012 Flooding resulted in temporary closure of hospital; 21 patients transferred to other hospitals.

Nova Scotia Health Authority,

cancellation of appointments.

Regina General Hospital, Regina, Saskatchewan, 2007 Operating theatre closed for 8 days due to high heat and humidity levels.

Sunnybrook Health Sciences, Toronto, Ontario, 2013 Power grid failure from the ice storm lasted 39 hours. Six infants in Neonatal Intensive Care Unit were relocated.

Nova Scotia, 2019 Hurricane Dorian caused power outages at hospitals and service locations, which had to operate on an emergency generator. Sites experienced water damage, temporary closures, and

## Health System Operations, Products and Services are at Increasing Risk

 The health system relies on a wide-range of interconnected services – many of these are vulnerable to climate-related impacts.



 Supply chain disruptions for food, drugs, and essential medical supplies could result from transportation disruptions, international events, or increases in global demand.



• Climate change may increase the need for new, or greater quantities of pharmaceuticals to deal with new illnesses in Canada (e.g., new infectious diseases). Impacts of heat on pharmaceuticals.



Cross-sectoral collaboration is required to protect health



## Opportunities for Enhance Intersectoral Collaboration

- Communication and engagement
- Institutional coordination and collaboration
- Science and research

## ACTIONS CAN BE TAKEN ACROSS MULTIPLE SECTORS TO ADDRESS CLIMATE CHANGE AND ACHIEVE VERY LARGE MULTIPLE HEALTH CO-BENEFITS



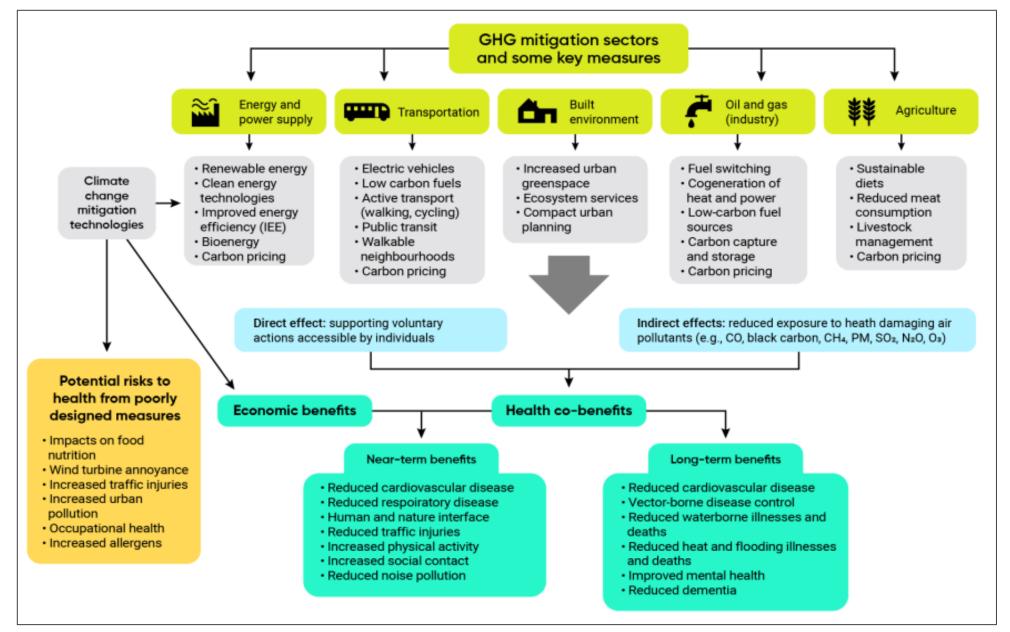
The potential health co-benefits of climate action are so significant that the Lancet Commission on Climate and Health has called climate change the "greatest global health opportunity of the 21st Century"

HEALTH OF CANADIANS IN A CHANGING CLIMATE

CLIMATE CHANGE AND HEALTH LINKAGES CHAPTER



### Potential Health Co-benefits and Risks of GHG Mitigation Measures



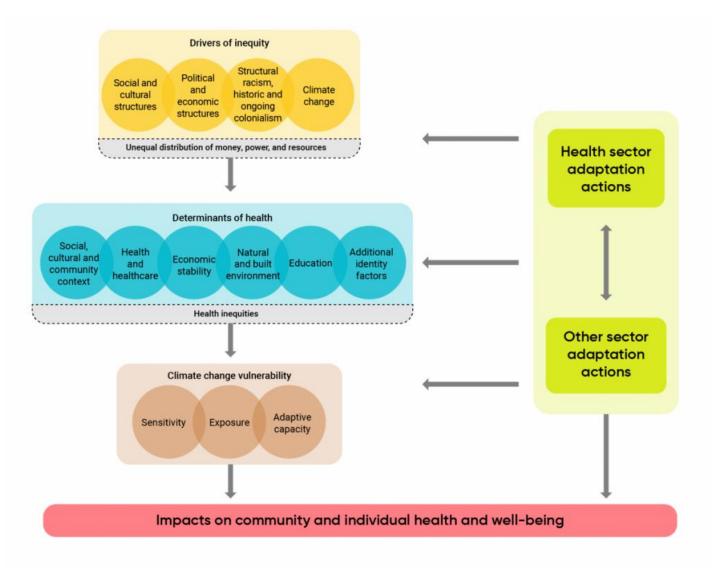
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Canada

Some Canadians are affected more severely by climate change, as exposure and sensitivity to hazards and the ability to take protective measures varies across and within populations and communities

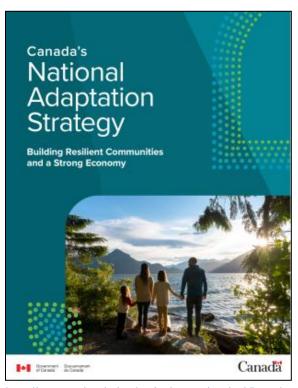
Climate change can exacerbate existing health inequities among Canadians, which can increase vulnerability to the health risks from climate change for some individuals and populations.

Adaptation and GHG mitigation reduction measures within and outside the health sector – and the need to be developed with health equity considerations in mind



### **Canada's NATIONAL ADAPTATION STRATEGY**

#### **Health and Well-being**



https://www.canada.ca/en/services/environment/weather/climatect

#### **Guiding Principles**



Respect jurisdictions and uphold Indigenous rights



Advance equity and climate and environmental justice



Take proactive, risk-based measures to reduce climate impacts before they occur



Maximize benefits and avoid maladaptation

#### Goal

The health of all people in Canada is safeguarded and supported by a climate-resilient and adaptive health sector that has robust and agile systems and services that account for and support the diverse components of well-being.



#### **Objectives**

Objectives in this system aim to reflect the breadth of action to protect health and well-being in the face of various climate change impacts. This includes both minimizing climate change risks to health, collaborating with the diverse actors who improve health in Canada, and better preparing the health system to manage the increased demand for health services and the added burden of new climate risks.



- 1 Health systems have the expertise, knowledge, and resources needed to identify climate change-related risks and take equitable, evidence-based action to protect health.
- 2 Health authorities have identified the extent to which climate change is impacting health and have established methods for tracking future health impacts and evaluating progress towards protecting health and reducing risks.
- 3 People are protected from urgent climate-related health risks such as extreme heat, infectious diseases, wildfire smoke, foodborne hazards and impacts to traditional foods, poor mental health outcomes, and others.
- 4 Climate action across all sectors promotes good health and prioritizes measures that have multiple benefits (e.g., protecting health and improving environmental sustainability).

https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/national-adaptation-strategy.html

## **Contact Information**

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