Climate Change: Turning the Climate Crisis into a Public Health Opportunity

Presentation to the Winnipeg Foundation
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Climate Change is a Public Health Crisis

Climate Change affects health is so many ways:

- Increases the frequency & intensity of extreme weather events (hurricanes, heat waves)
- Affects diseases that are spread by animals (malaria)
- Affects animal populations that we eat (salmon)
- Affects crops used for food, clothing & shelter
- Affects sea levels (housing, transportation)
- Affects rainfall (water supplies & floods)

World Health Organization:

“Climate change is the greatest health challenge of the 21st century and threatens all aspects of the society in which we live.”

References:

Attribution Studies - Impact of Climate Change

Carbon Brief - Mapping Project

- 230 studies & 260 extreme weather events & last 20 years
- 68% of extreme weather events over the last 20 years - more severe because of human induced climate change
- E.g. Wildfires in Western Canada - 1.5 to 6 times more likely

References:
- https://www.carbonbrief.org/category/science/extreme-weather/attribution
Significant Harm Happening at 1 °C Warming

Lancet Countdown Report

- 27 academic institutions & data from 196 countries & 41 indicators
- “Trends in climate change impacts, exposures, and vulnerabilities demonstrate an unacceptably high level of risk for the current and future health of populations across the world...”

Significant Harm Happening at 1 °C Warming

In 2018 - The Lancet Countdown examples:

- 712 extreme weather events occurred in 2017 resulting in US$326 billion in economic losses
- 3.4 billion weeks of work were lost in 2017
- Agricultural yield potential decreasing in 30 countries

Identified under-nutrition as the largest health impact of climate change in the 21st century.

Global Warming of 2.6 to 4.8 °C Predicted

International Commitment: Paris Agreement on Climate Change - 2015

- Current trajectories - 2.6 to 4.8 °C of warming by 2100
- 195 countries agreed to:
  - hold global warming well below 2 °C
  - pursue efforts to limit global warming to 1.5 °C

Catastrophic Harm Predicted - 2.0 °C Warming

The IPCC - 1.5 & 2.0 °C of warming - 800-page report - fall 2018.

- 1.5°C - amplify current impacts
- 2.0°C - so much greater
  - Eg: several hundred million more people at risk each year with 2°C than with 1.5°C

To prevent 2°C, we have to cut climate emissions by:
- 45% by 2030
- to zero by 2050.

Climate Change is Harming Canadians Too!

- Climate change been harming the mental & physical health of Canadians for years BUT the public did not make the connection.
- That started to change last summer!
CC Health Risks for Canadians - Extreme Heat

In 2018, millions were exposed to an extremely high number of hot & humid days.

- **Winnipeg** - 21 days > 30°C

**Heat Waves:** # of Days > 30°C - double or triple over 30 years at current rate of emissions

- **Winnipeg** - > 40 days > 30°C - 2051

Extreme heat is more than annoying:

- Heat stroke & premature deaths
- Aggravate heart & lung conditions

Historical and projected annual mean number of hot days (>=30C) in Canadian cities under high GHG scenarios. Datasource: Climateatlas.ca (accessed March 6, 2019)

References: Module 3, CAPE Climate Change Toolkit for Health Professionals & ClimateAtlas Map
CC will increase air pollution in a few ways:

- **Higher temperatures** amplify smog-forming reactions
- **Warmer weather** increases pollen & spore production which aggravates allergies
- **Forest fires, wind, dust storms**

**Summer 2018:** Millions were exposed to extremely high levels of air pollution

**Air Pollution:** 14,400 premature deaths annually

References: Module 3, CAPE Climate Change Toolkit for Health Professionals
CC Health Risks for Canadians - Extreme Events

CC has been increasing the frequency & intensity of extreme weather events.

- Over 195 disaster-level extreme weather events - Canada - last decade
  - Can require evacuations
  - Can contaminate water & food supplies
  - Can cause power outages
  - Can cut people off from emergency services
- **Floods** - most common & expensive events
- **Wildfires**: Almost half a million Canadians evacuated - last 3 decades

References: Module 3, CAPE Climate Change Toolkit for Health Professionals
CC Health Risks for Canadians - Vector-borne Diseases

Allows emergence & spread of diseases by Ticks & Mosquitoes

- **Lyme disease**
  - severe headaches, facial paralysis, arthritis, heart & neurological disorders
  - Last decade - from 144 to 2025 cases/year

- **West Nile virus**
  - infection of the CNS, can produce muscle weakness, paralysis
  - Over 6000 cases since 2002

- Both in Manitoba

References: Module 3, CAPE Climate Change Toolkit for Health Professionals
CC Health Risks for Canadians - Food & Water Security

Food & water security can be impacted as well.
- **Droughts** - affect water supplies & crops
- **Changing climate** - affect the availability of food from the land
- **Melting permafrost & ice roads** - disrupt transport of foods
- **Food** - less secure & more expensive

Photos: Dan Tobias, Ice Fishing

References: Module 3, CAPE Climate Change Toolkit for Health Professionals
Climate change can harm mental health.

- Extreme weather events - PTSD, anxiety, depression & substance abuse
- Housing loss - particularly stressful
- Threat of future climate-related disasters - emotional distress, heightened anxiety & feelings of hopelessness.
- Climate variability & incremental changes - sea level rise, rising temperatures & drought - anxiety, depression & suicidal thoughts

References: Module 3, CAPE Climate Change Toolkit for Health Professionals
CC Health Risks for Canadians - Health Equity & Vulnerable Populations

Climate Change Amplifies Health Inequities & Vulnerabilities:

- People on low incomes
- Older people & young children
- Indigenous people & people living in the North
- Individuals with Illness or chronic diseases
- People experiencing existing health inequities

References: Module 3, CAPE Climate Change Toolkit for Health Professionals
Need for Urgent Action: Canada Far From its Targets

Canada committed to reducing GHGs by 30% of 2005 levels by 2030

- Cutting by 191 Mt - from 704 Mt in 2016 to 513 MT in 2030
- We are far from our target
- And we need to do much more to limit warming at 1.5°C

Figure: CAPE Toolkit Module 4
Need for Urgent Action: Canada among Top 12 Emitters Globally

Data Source: World Resources Institute, Climate Watch, CAIT Climate Data Explorer.
Need for Urgent Action: Canadians are Top Emitters per Person (2016)

Reference: Ritchie and Roser, 2019
Canadian GHGs by Economic Sector, 1990-2016 with Federal Projections to 2030

Electricity Emissions
red line; 11% today

Transportation Sector
brown line; 25% today

Oil & Gas Sector blue line; 26% today

References: Module 4, CAPE Climate Change Toolkit for Health Professionals
GHG Emission Trends by Sector - Manitoba

- 3% of Canada’s GHG Emissions
- Agriculture - 36%
- Transportation - 33%
- Commercial Buildings - 12%
- Electricity - Mostly renewable

References: Module 4, CAPE Climate Change Toolkit for Health Professionals
Climate Solutions with Health Co-Benefits

The Lancet: Climate action should be seen “as the greatest global health opportunity of the 21st century”.

Many Climate Solutions will:
- Improve health & reduce healthcare costs
- Improve social cohesion & health equity

The Lancet Commission identified 4 climate solutions - produce significant health benefits:
- Renewable Energy
- Sustainable Transportation
- Energy Efficiency
- Sustainable Agriculture

Climate Solutions with Immediate Health Benefits

Reduce Air Pollution

Reduce Air Pollution: Chronic exposure - PM2.5 from fossil fuels - 7,100 premature deaths & $53.5 billion in health-related costs/year.

Climate Solutions that Reduce Air Pollution:

- Public transit & electrified transit system
- Cycling & Walking
- Renewable energy
- Energy Efficiency Standards
- Energy Retrofits for buildings
- Reduced extraction of oil & gas

References: Module 5, CAPE Climate Change Toolkit for Health Professionals
Climate Solutions with Immediate Health Benefits
Increase Physical Activity

**Increase Physical activity:** Physical inactivity - health-related costs estimated at $6.8 billion in 2009 - Canada
- improve mental health & foster healthy child development & aging
- reduce risk of CVD diseases & premature deaths
- reduce risk of obesity, some cancers, diabetes, dementia & osteoporosis

**Climate Solutions that Foster Physical Activity:**
- Increase use of public transit
- Increase cycling & walking

References: Module 5, CAPE Climate Change Toolkit for Health Professionals
Climate Solutions with Immediate Health Benefits: Reduce Meat Consumption

**Reduce Obesity:** Obesity contributes to 18 chronic diseases - health-related costs at $7.1 billion/year in Canada

- Diets rich in plant-based proteins can:
  - reduce global mortality by 6 to 10%
  - Reduce climate emissions by 29 to 70%.

**Climate Solution that Reduces Obesity:**
- Reducing red meat consumption

References:
- CAPE, Prescribing Active Travel for Healthy People and a Healthy Planet: A Toolkit for Health Professionals, Produced by March 2017
- Module 5, CAPE Climate Change Toolkit for Health Professionals, 2019.
Reasons for Hope - Health Moves the Debate

Opinion Polls:
- Health Professionals are influential messengers
- Trusted by the public, decision-makers & the media
- Health messaging motivates behavioural change among members of the public

Health Co-Benefits:
- More local & more immediate
- More concrete

References: Module 8, CAPE Climate Change Toolkit for Health Professionals
Reasons for Hope - Health Organizations Engaging

- Climate-change-toolkit-for-health-professionals
- Active Travel Toolkit
- Call to Action on Climate Change and Health - English
Reasons for Hope - Actions Won

Alberta
- 2015 - commitment - phase out coal by 2030 - 6 plants
- $300 million/year in health benefits (eg 100 PD/year)
- 17% of GHG in AB & 6% of GHGs in Canada

Ontario
- 2005 - committed to phase out coal by 2015 - 6 plants
- $3 billion/year in health benefits (e.g. 700 PD/year)
- 20% of GHG in Ontario in 2002

References:
- DSS Management & RWDI. Cost-Benefit Analysis: Replacing Ontario’s Coal-Fired Electricity Generation. MOE. 2005
- Pembina Institute, CAPE, Asthma, Lung Association of AB & NWT. A Costly Diagnosis: Subsidizing coal power with Albertan’s health. 2013.
Reasons for Hope - New Technologies

Electric Buses:
- B.C. Transit switching entire fleet to electric buses.
- Plan to replace > 1,200 existing buses & add 350 over next 10 years

Hybrid and Electric Ships:
- BC Ferries - powered by hybrid engines
- Electric ferries - Scandinavia

References:
- CBC News: July 29, 2019
- CBC News: July 3, 2019
Reasons for Hope: Carbon Free Electricity

Wind Turbines
- Wind Turbines in Scotland generated 9.8 million MW-hours of electricity - 6 months
- Enough for 4.47 million homes - nearly twice as much as needed for its homes

Solar Energy
- 344 Chinese cities - solar systems producing energy at lower prices than the grid without any subsidies
- Cheaper than coal plants

References:
- Science Alert, July 17, 2019
- CNN Business, Aug 15, 2019
Reasons for Hope - Climate Solutions are Feasible & Affordable

Renewable technologies are coming BUT would come faster with proper policies.

- Coal, oil & gas - still get $370 billion/year in subsidies - globally
- Renewables - $100 billion/year
- New report: 10-30% of fossil fuel subsidies would pay for a global transition to clean energy

Photo: CTV News, Feb 18, 2018, Demolishing Nanticoke Coal Fired Power Plant in Ontario (Once the largest coal plant in North America)

Reasons for Hope - Climate Change is a Political Challenge

Need public support to make the changes needed
New Abacus Date Poll - Aug 12, 2019 - found:

- 62% of Canadians believe climate change is or will be an emergency
- 81% believe it represents a “major threat to the future of their children and grandchildren”
- 67 to 81% would support bold actions such as:
  - Banning the use of gas-powered vehicles by 2030
  - Banning the use of coal and gas-powered electricity by 2030
Canadian Association of Physicians for the Environment (CAPE)

- 25 years - Charitable Non-Profit - Donor Based
- Mission: Working to better human health by protecting the planet
- Board composed primarily of Physicians
- 5 Staff
- Five Regional Volunteer Committees
Website: cape.ca
Twitter: @CAPE_Doctors
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