Public Health in a Changing Climate: Leveraging Connections and Knowledge for Action

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October 4, 2017
Brampton, ON
CIPHI Ontario 78th Annual Educational Conference
Established by the Public Health Agency of Canada in 2005 to promote the use of knowledge and evidence by public health practitioners and policy-makers in Canada.
The NCCEH Mandate: Knowledge Translation

Synthesize & exchange knowledge
- Incorporate evidence from research and experience to improve or develop policy/practice

Identify gaps in knowledge
- Catalyst for new research or application of research

Build capacity
- Provide tools, establish networks, foster partnerships

TARGET AUDIENCE: Medical health officers, environmental health officers and other public health practitioners and policy-makers.
There is no plan(et) B.

“Blue Marble” image of the Earth taken on January 4, 2012 aboard NASA’s earth-observing satellite, Suomi NPP.

Image Credit: NASA/NOAA/GSFC/Suomi NPP/VIIRS/Norman Kuring
August 2017: Second warmest on record

August 2017 was the second warmest August in 137 years of modern record-keeping, according to a monthly analysis of global temperatures by NASA scientists.
Paths and possibilities

**Mitigation**

Reduce and stabilize levels of heat-trapping greenhouse gases in the atmosphere:
- Reduce sources of GHGs – burning of fossil fuels
- Enhance “sinks” that remove/store these gases - oceans, forests, soil

**Adaptation**

Reduce our vulnerability to effects of climate change:
- sea-level encroachment; intense, extreme weather events; food insecurity

Capture potential beneficial opportunities associated with climate change
- longer growing seasons, increased crop yields in certain regions; less cold-related mortality

**Delicate balance between human, ecosystem adaptability, and pace/ intensity of climate changes!**

Source: https://climate.nasa.gov/solutions/adaptation-mitigation/
Pan-Canadian Framework on Clean Growth & Climate Change

• Developed with provinces and territories, in consultation with Indigenous peoples

• To meet Canada’s emissions reduction target; economic growth

• Provincial and territorial key actions and collaborations opportunities with the Government of Canada

Government of Canada

- Hosted 46th session of the Intergovernmental Panel on Climate Change in Montreal, Sept 6-10, 2017; 195 countries

- Climate change impacts, future risks, adaptation & mitigation measures


Reports available at http://www.ipcc.ch/
Canada’s Climate Change, Impacts and Adaptation Programs

Climate Change Adaptation Platform (2012)
Natural Resources Canada

- National forum – reps from federal, provincial, territorial governments, industry, communities, academics, Indigenous, professional and not-for-profit organizations

- Collaborate on climate change adaptation priorities

- Working Groups: agriculture, coastal management, economics, energy, forestry, infrastructure and buildings, measuring progress, mining, Northern, RAC & tools, science assessment, water and climate information, enhancing uptake

- Health?

Source: http://www.nrcan.gc.ca/environment/impacts-adaptation/adaptation-platform/17176
Lots of resources
Climate Change: Global issues - local challenges

• Cities and local communities have to determine and implement local adaptation measures; various frameworks for action

• Examples:
  • build flood defenses
  • plan for heatwaves and high temps
  • considerations for urban vs rural vs coastal vs Northern Canada
  • emergency preparedness and evacuation protocols

• A need for multi- and cross-agency and cross-ministry collaboration, and to coordinate, share information and implement strategies bearing in mind regional-local adaptive capacities.
2017: A wild, wild summer … and it continues
Fires, Floods, and Bugs: How Climate Change Impacts Drinking Water Source Quality

Dr. Angela Eykelbosh, NCCEH

In collaboration with:
Dr. Monica Emelko, University of Waterloo; Dr. Ulidis Stiilins, University of Alberta; Dr. Mike Stone, University of Waterloo

September 28, 2016 | Edmonton, AB

NCCEH: what we do

• Synthesize knowledge on climate change and health that is relevant to public health practice

• Translate, disseminate knowledge – useful, accessible

• Identify critical knowledge gaps and stimulate research in what we don’t know about climate change & health on practice and decision making

• Link researchers and public health practitioners, building networks
NCCEH collaborations with researchers


• Research on impacts of different forest management strategies on drinking water source quality and treatability to assess suitability as source water protection technologies across major ecological/forest regions of Canada

• Principal Investigators: Dr. Monica Emelko, University of Waterloo; Dr. Uldis Silins, University of Alberta

• Team members (n>75): multidisciplinary institutes and organizations – universities, industry, government; Canadian Water Network; NCCEH
NCCEH collaborations with researchers

CIHR Team Grant: Environments and Health


• Research on fostering Indigenous leadership in renewable energy development has the potential to deliver positive community benefits and reach potential for reconciliation (Indigenous and settler communities, and with the environment.)

• Team Lead: Dr. Heather Castleden, Queen’s University

• Team members (n>60): universities, governments, industry, communities, non-governmental organizations from across Canada including NCCEH, international advisory committee
NCCEH/BCCDC collaboration:  
Building Greater Public Health Capacity to Address Forest Fire Smoke in Theory and Practice  

• Funded by Health Canada  
• Focus is on public health (PH) response to wildfires  
• Consult with PH practitioners across Canada re: perceptions, challenges with role during wildfire events  
• Conduct in-depth needs assessment involving multiple PH jurisdictions in Canada to assess decision-making and implementation by PH practitioners.

➢ Synthesis of findings from literature review, document reviews of recent wildfire events and interviews
NCCEH collaborations in “CanDR2”

- CanDR2 (Disaster Research Response [DR2] Program)
- Gaps recognized during Feb 2016 Best Brains Exchange meeting - Canadian Institute of Health Research (CIHR), Health Canada, US National Institute of Environmental Health Science (NIEHS)
- Discussed integration of research and expertise in public health management of chemical emergencies/disasters in Canada
- Steering Committee Co-chaired by NCCEH Scientific Director and Health Canada Director General, Environmental and Radiation Health Science Directorate; Members include representatives of:
Public Health: Points for Action

Research

• Ground policy and actions in evidence-based research on climate change health impacts
• Identify the most vulnerable populations; consider and account for social determinants of health in adaptive actions
• Determine interaction of climate-change related hazards and other factors that impact health
• Investigate effectiveness of controls (protocols)
Public Health: Points for Action

Surveillance and Monitoring

• Determine health risks by subpopulations, location, and changes over time
• Enhance environmental monitoring
• Assess existing surveillance systems
• Utilize surveillance data to develop prevention programs and/or adaptation plans and strategies
Public Health: Points for Action

Risk Assessment
- Collect and track crucial information (need data)
- “Risk multiplier”
- A challenge and involves other disciplines
  - Can be simple or can be very complex

Risk Management
- Improve baseline health status
- Cross-sectoral partnerships; put health on “table”
- Enhance risk communication and public education/awareness
- Assure environmental health services and workforce are prepared
- Enhance capabilities to prepare for and respond to threats
CRISIS

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Danger  Opportunity
Acknowledgements

Drs. Angela Eykelbosh, Helen Ward, Michele Wiens, NCCEH

www.ncceh.ca || www.ccnse.ca

Production of this presentation has been made possible through a financial contribution from the Public Health Agency of Canada.