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The province of Ontario (Canada) Case Study: Towards a Harmonized Heat Health Warning System

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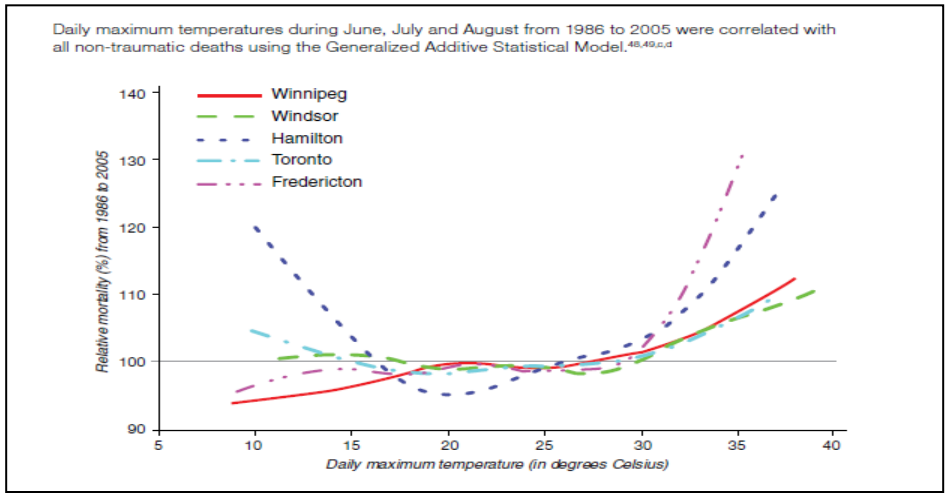
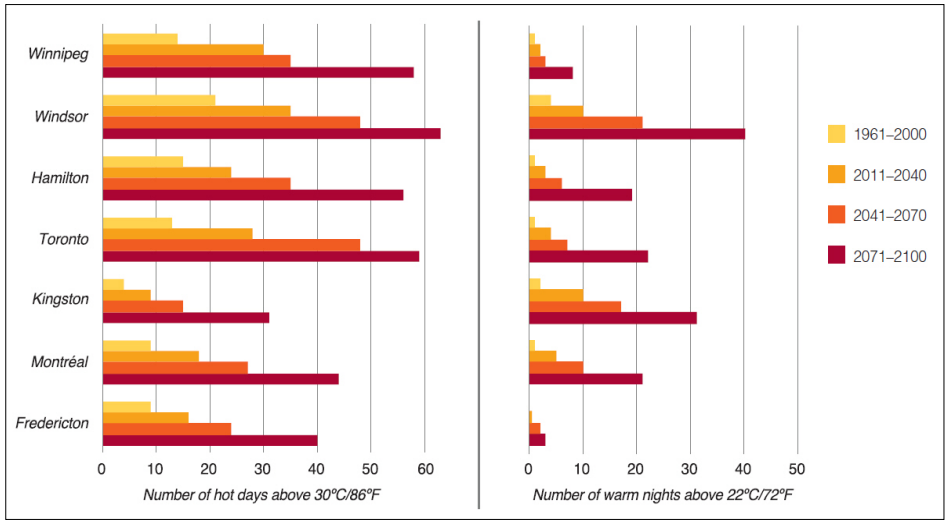
Heat Is a Health Risk in Canada



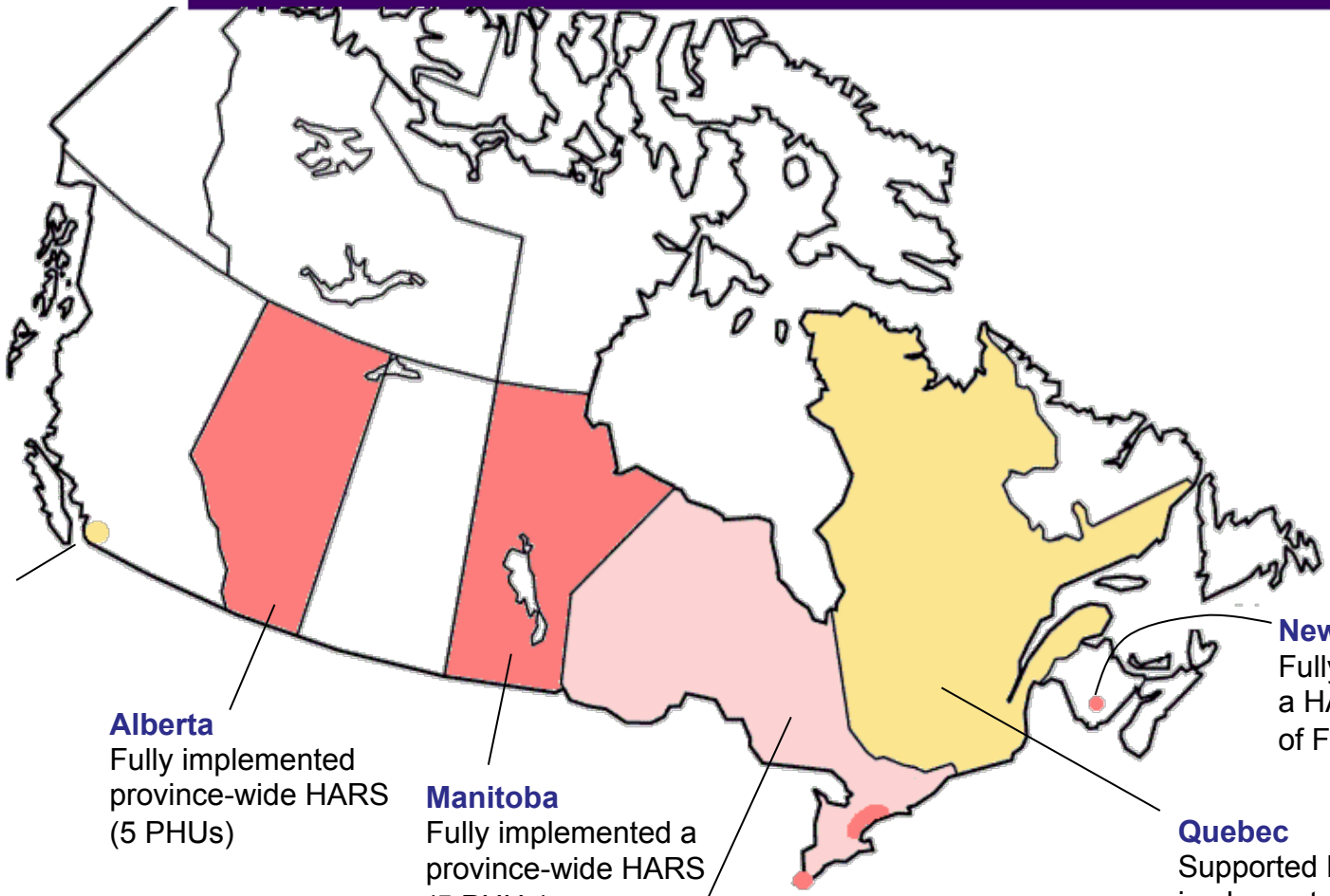


- In 2007, Natural Resources Canada published a comprehensive assessment of climate change impacts and adaptation options in Canada.

- In 2008, Health Canada published an assessment report of human health impacts from a changing climate. The report identified a range of health vulnerabilities and impacts from a changing climate and actions to increase resiliency.

- The two reports identified extreme heat as a significant weather related hazard with important risks to human health. These two reports were drivers for Health Canada's Heat Resiliency Initiative.

Heat Alert and Response Systems: Current Status



British Columbia
Supported implementation of HARS in the Greater Vancouver Area and Surrey (2 PHU)

Alberta
Fully implemented province-wide HARS (5 PHUs)

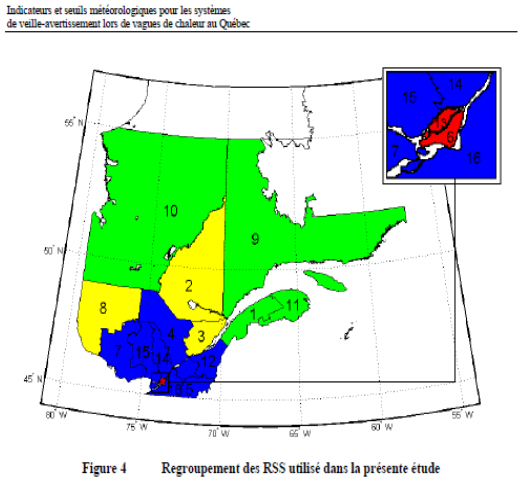
Manitoba
Fully implemented a province-wide HARS (5 PHUs)

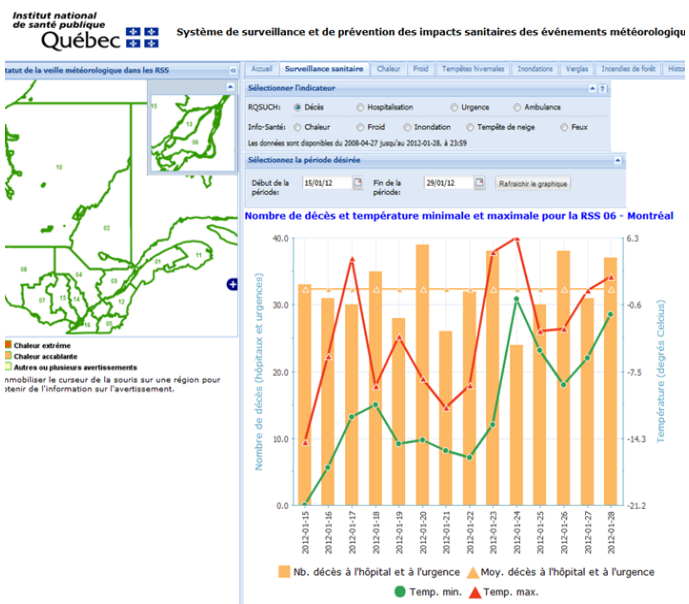
Ontario
- Fully implemented HARS in Windsor Essex
- Supported functional HARS in 10 PHUs (PanAm Games) for summer 2015
- Supporting harmonized HARS in 36 PHUs for summer 2016

New Brunswick
Fully implemented a HARS in the city of Fredericton

Quebec
Supported HARS implementation across the Province (18 PHUs)

A Fully Implemented HARS in Quebec





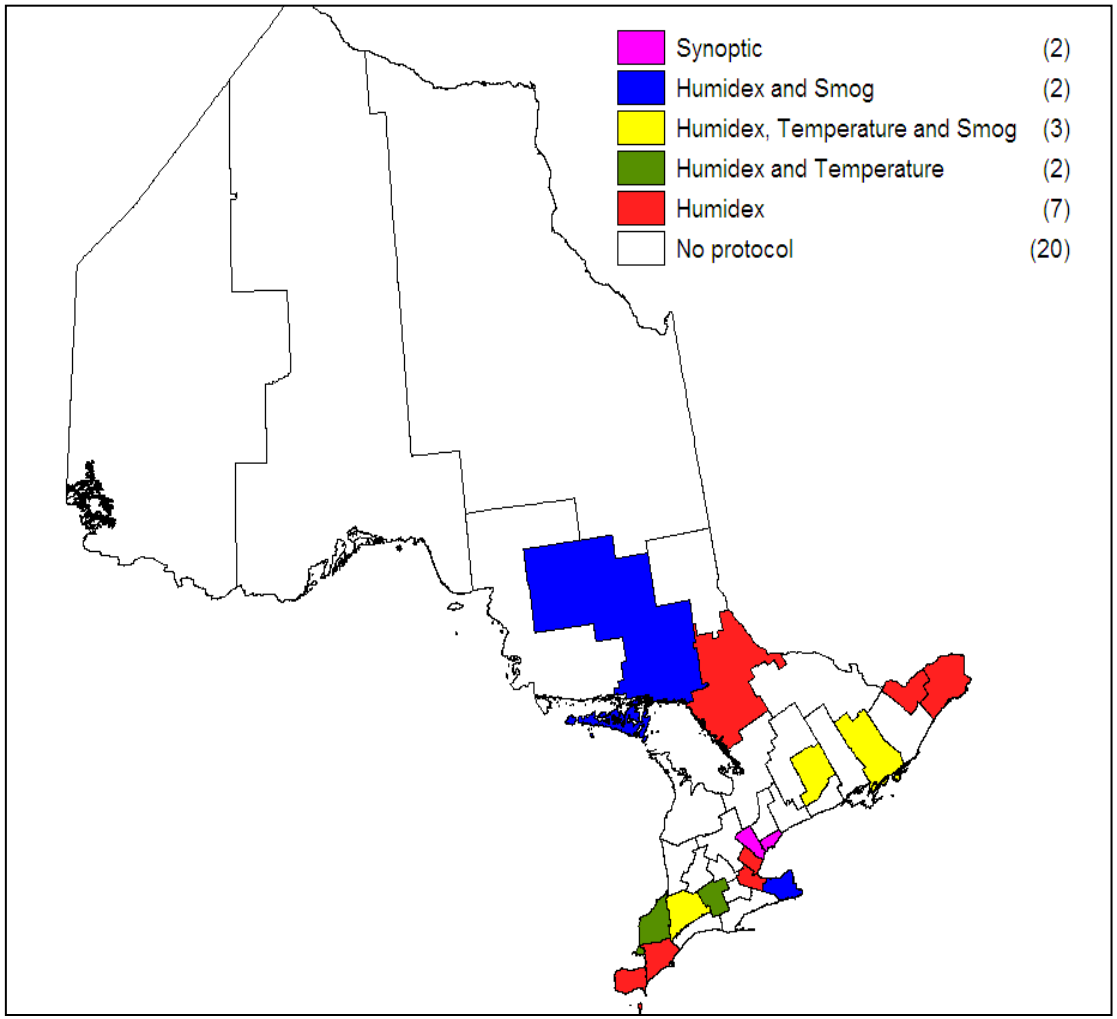
Research to establish community-based heat health triggers (4 regions and one alert level: Tmax/Tmin over 3 days)

Surveillance to support response and intervention with real-time health data (SUPREME: ED visits, Ambulance Call, Telehealth, mortality + Weather alerts, forest fires, Smog, floods, etc.+ vulnerable populations)

Outreach to raise awareness and reach out the most vulnerable people (Automated alerts –SMS/Emails, etc.)

Evaluation to improve the alert system (SUPREME useful tool for emergency preparedness AND preventive actions, training prior to heat events is crucial, full intervention mode is a difficult decision to take locally)

HARS Status in Ontario: Summer 2014



- Among the 36 Ontario Public Health Units (PHU), 55% have no formal heat alert protocol in place.
- Only one PHU (Toronto) has established evidence-based triggers.
- 10 PHUs has no or little information on heat health risks on their website
- Only 20% of local municipalities, under the jurisdiction of Ontario PHUs, release heat alerts.
- Some municipalities have different criteria to issue heat alerts.

Ontario Harmonized Heat Health Warning System

Federal Leads:	Environment Canada & Health Canada
Provincial Leads:	Ministry of Health and Long-Term Care & Public Health Ontario
Local Authorities:	36 Public Health Units

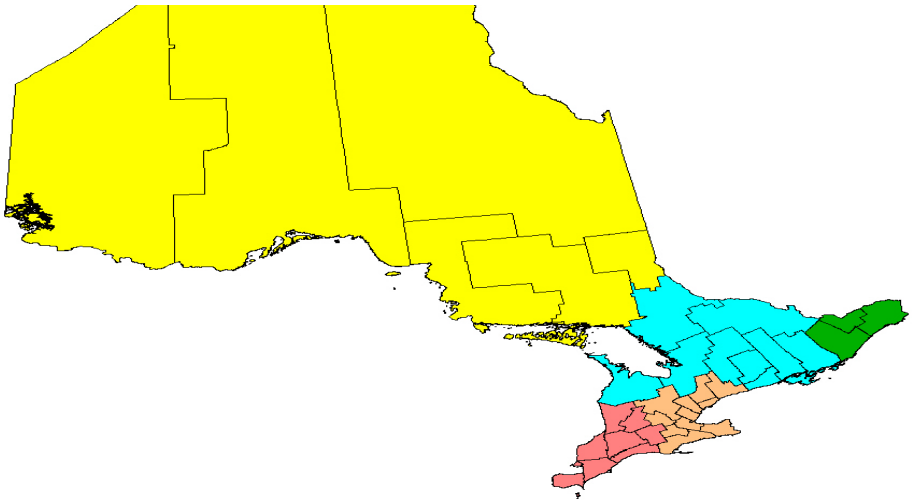
In 2012, HC established a collaborative with the Ontario Ministry of Health and Long-Term Care, Public Health Ontario, the Meteorological Service of Canada and public health units.

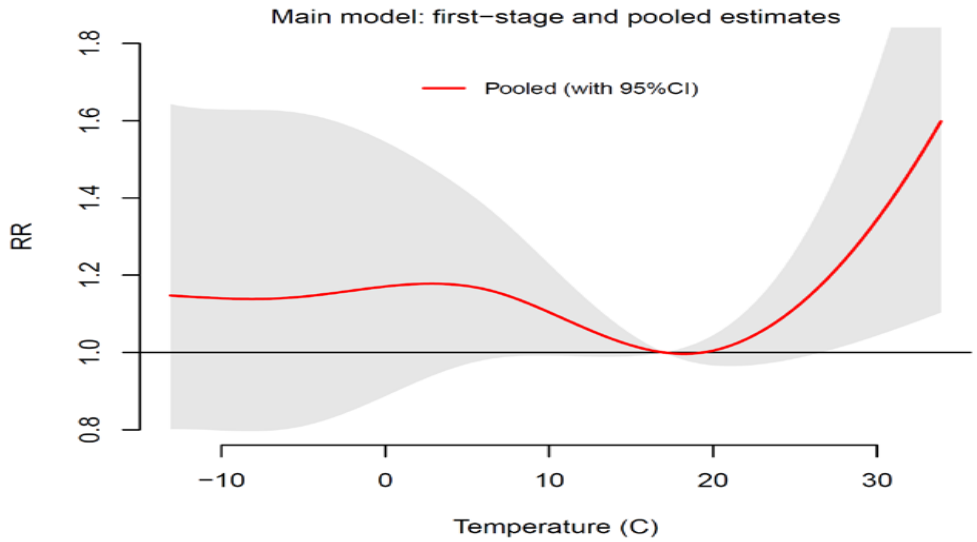
The project's objective is to, **by 2016**:

•Establish consistent communications around extreme heat and health to reduce public confusion and improve taking action to protect health;

•Develop a consistent and evidence-based approach to calling heat alerts, while taking into consideration community differences and resources to independently develop a HARS or related information.

Science Component





- Quantify and understand the burden of heat illness in Ontario
- A state-of-the-art approach to estimate the nonlinear and distributed-lag effects of ambient temperature for selected PHUs (case-crossover analysis and daily time-series analysis).
- Meteorological and air pollution databases have been considered.
- Non-accidental death and cause-specific death (CVD, respiratory)+ vulnerable populations.
- Heat alert protocol (three levels) is developed based on exposure to both intensity and duration of a heat event.

Communication Component

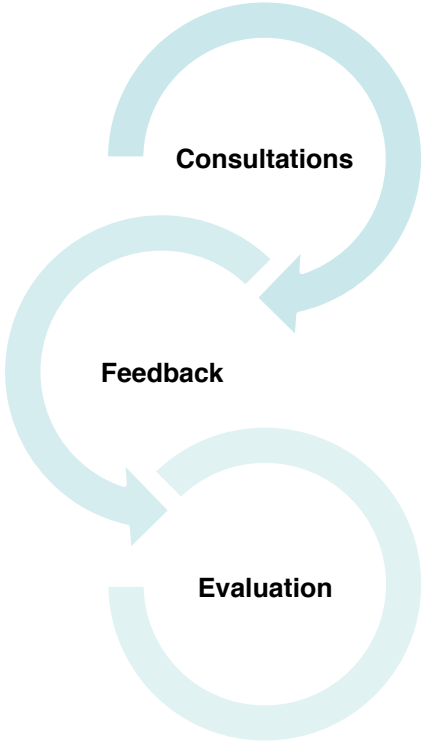
- The need for standardized heat health messaging has been identified as a key component of a harmonized HARS.
- Consistent terminology (e.g. warning vs alert or alert vs. extreme alert)
- PHUs are encouraged to use Environment Canada's terminology
- Dissemination of heat-health messages may also be improved by raising pre-season and pre-event awareness across the province. Post-event communications are also considered
- Use of HC's scientifically sound heat-health messages for public communication

Governance Component

- The Province (Ministry of Health and Long-Term Care) sets standards for public health units and provides provincial emergency management leadership in the areas of human health, disease and epidemics, and health services during an emergency
- Provincial Standard Operating Practice (SOP) developed for public health units on harmonisation of heat alerting (2015)
- Covers: Governance, alert triggers, alert levels, suggested activities, communications messaging, planning guidance, evaluation.
- 2015 Pilot: 10 public health units hosting the Pan American and Para-Pan American Games.

Lessons learned and Challenges

Collaborative efforts



- Involving not only researchers but also end users and meteorologists in the development of alert triggers
- Harmonisation working with health units with (sophisticated) existing systems and others with no system at all
- Catalyst events as opportunities (e.g. Pan Am Games 2015)
- Evaluation indicators being developed, however PHUs have limited capacity and need support from provincial and federal levels
- Perception of heat (North vs. South) and more communication on the establishment of health-based triggers.
- More work needed to engage municipalities and initiate the discussion

Federal Support: Feedback from Partners

"This is a brilliant report and will be extremely useful."
Vidya Anderson, Ministry of Health and Long-Term Care

"Your skills have been instrumental with providing Health Units a strong foundation with solid evidence for PHU to build a robust HARS."
Anthony Di Pietro, Durham Region Health Department

"Just writing to let you know that your publications arrived yesterday. What phenomenal resources!!!!! Great job you and your team did."
Maxine R. Marz, Emergency Management Ontario

"Our team here has really appreciated all of your help and guidance on our HARS project. It has been awesome!"
Office of the Chief Medical Officer of Health, Alberta Health

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