



# Health Adaptation to Extreme Heat Events

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# Health Risks in Canada from Climate Change



**Dangerous travelling conditions**

**Changes in drinking water quality and quantity**

**Food security - changing animal distributions**

**Health impacts from more severe storms**

**Expansion of Lyme Disease vector**

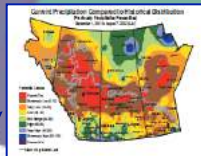
**Respiratory illnesses from forest fires**

**Water-borne diseases from floods**

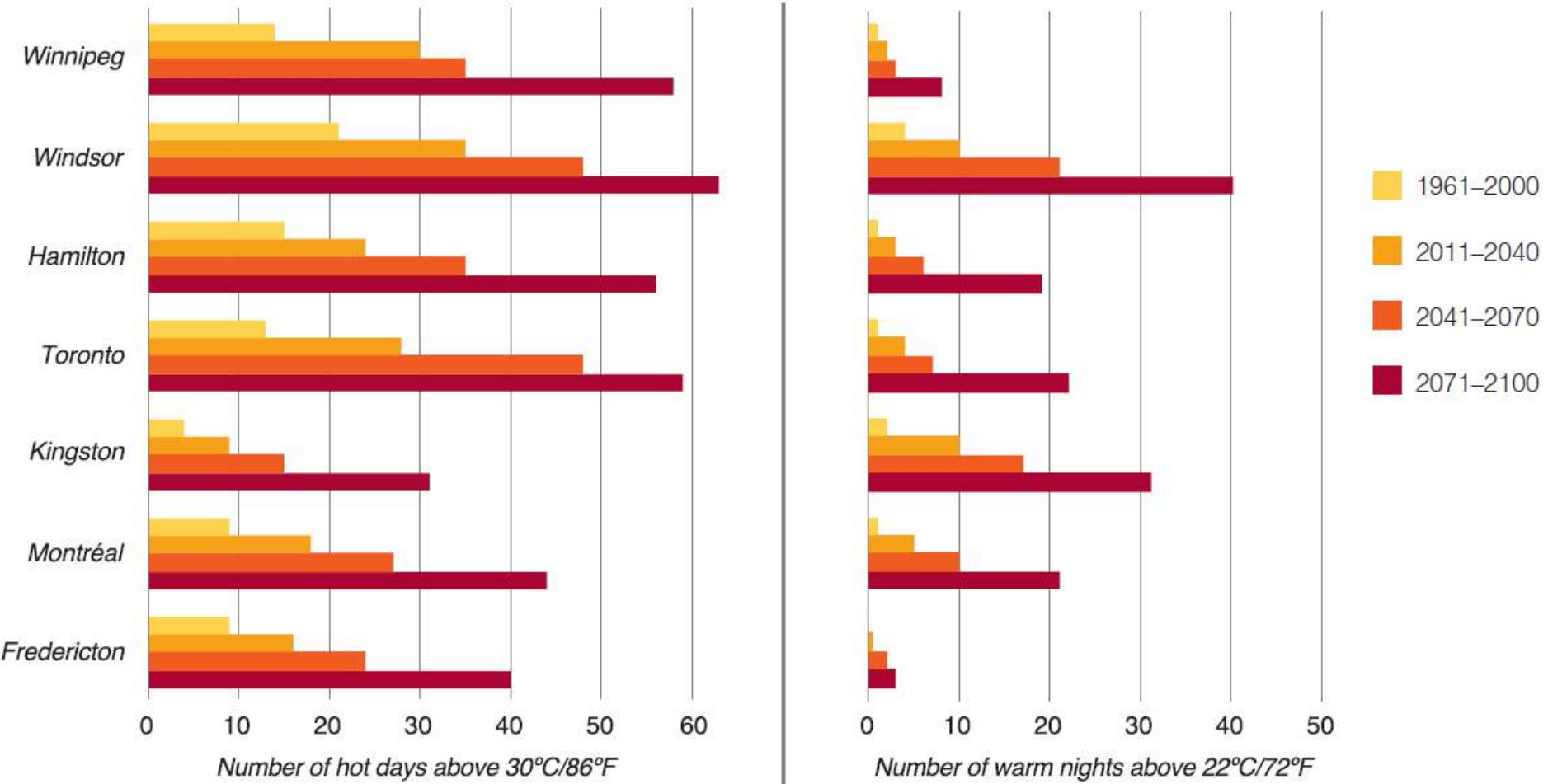
**Psychosocial impacts from droughts**

**Permafrost melt damaging infrastructures**

**Heat-related illnesses and deaths**



# Heat Projections for Select Canadian Cities





# Factors that Increase Vulnerability



# Toward Health Adaptation Action

**Recognition**  
Increased awareness



**Groundwork**  
Assessments  
Adaptation research  
Conceptual tools  
Stakeholder networking  
Policy recommendations



**Adaptation Action**  
Legislation  
Departmental development  
Public outreach  
Surveillance/monitoring  
Infrastructure/technology  
Program evaluations  
Financial support  
Medical interventions



# EM Action With and Without “Adaptation”

## EM Action

Hazard Risk  
Vulnerability Assessment

Disaster mitigation

Disaster planning

Table top exercises

Surveillance

Response and recovery

Increasing planning capacity



## EM + Adaptation

HRVA integrating climate  
change + CC assessments

Disaster mitigation informed by  
CC drivers (e.g, UHI)

Disaster plans – informed by  
CC (eg., simultaneous events)

TTX with CC scenario

Monitoring new health risks

Activate surge capacity

Partners with CC knowledge,  
staff aware of CC risks

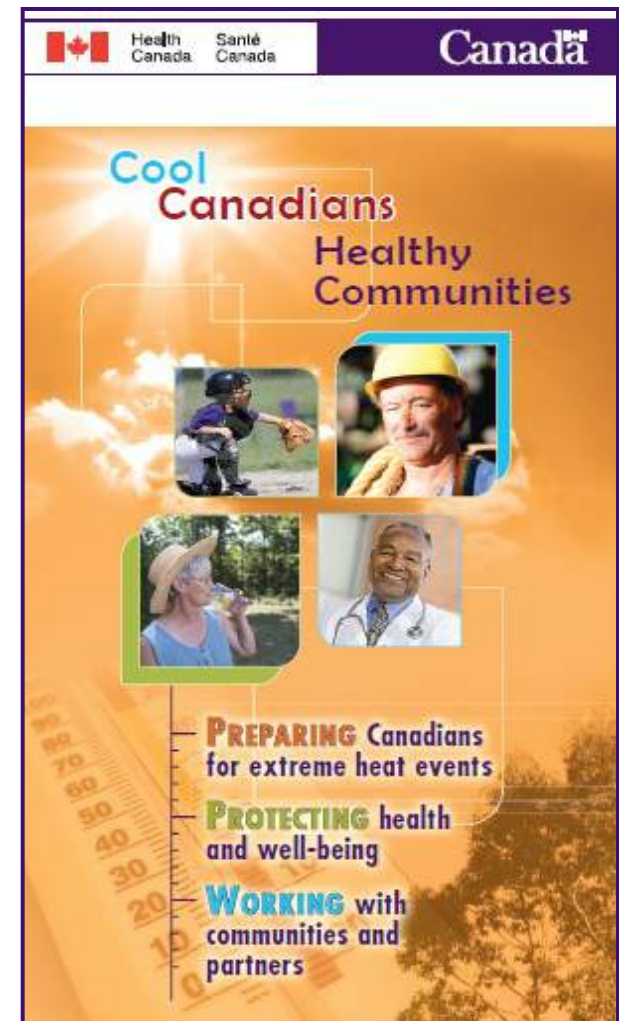


# Developing Heat Resilient Communities and Individuals

**Goal:** In partnership with provinces and communities, expand HARS to increase the resilience of Canadians to the health risks of extreme heat events

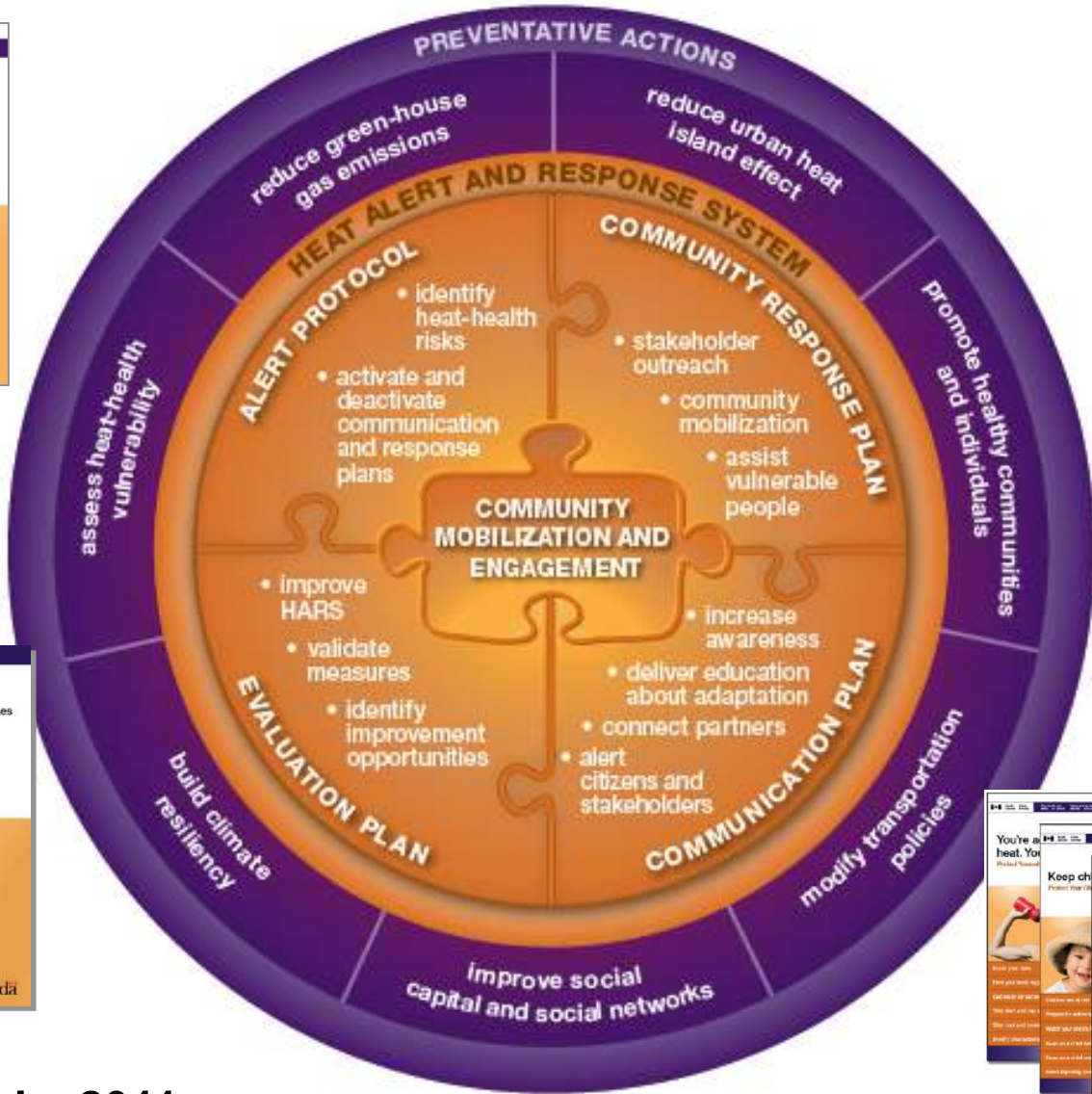
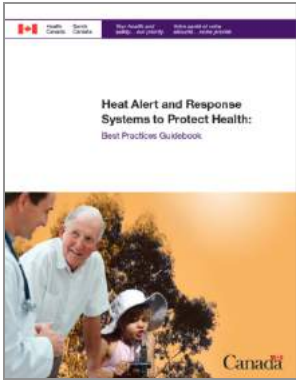
## Four areas of activity:

- i) Heat health messaging to support personal adaptation
- ii) Heat-Health Science: Address critical knowledge gaps
- iii) Clinical training: Enable health professionals to better advise, diagnose and treat their clients
- iv) Expansion of HARS to communities across Canada





# Heat Alert and Response Systems





# Best Communication Practices



**Audience**



**Message**



**Message delivery**

<b>Perceptions</b> <b>Challenges</b> <b>Heat-vulnerabilities</b> <b>Needs</b>	<b>Clear</b> <b>Tailored</b> <b>Address barriers to action</b>	<b>Media</b> <b>Interpersonal networks</b> <b>Community &amp; group events</b> <b>Collaborative</b> <b>Timing</b>
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**Adaptation**



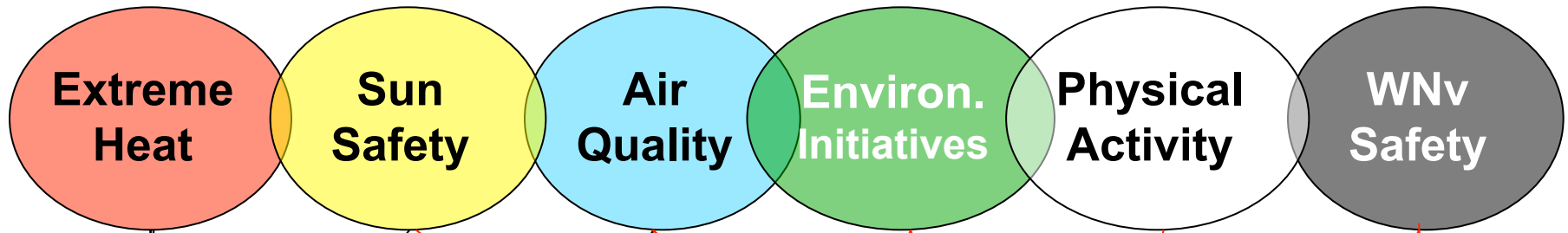
# Challenges - Addressing Barriers to Adaptation

## Examples of Challenges Seniors Face in Adapting to Extreme Heat Events

Heat-Vulnerable Groups	Examples of Challenges
Older adults <sup>11</sup>	<ul style="list-style-type: none"><li>• Physiological characteristics that may contribute to increased vulnerability to heat:<ul style="list-style-type: none"><li>› reduced thirst sensation<sup>127</sup></li><li>› reduced fitness level</li><li>› reduced sweating ability<sup>128</sup></li><li>› increased susceptibility to chronic dehydration<sup>127</sup></li></ul></li><li>• Visual, cognitive, and hearing impairments</li><li>• Agility and mobility challenges</li><li>• Differing perceptions of risks and vulnerabilities based on life experiences</li><li>• Reduced literacy</li><li>• Social isolation</li></ul>



# Challenges - Contradictory Messages



use air conditioners & fans   vs.   **don't use air conditioners**

visit tree-shaded areas   vs.   **stay indoors/ out of shaded areas**

wear breathable, loose clothing   vs.   **wear tightly woven clothing**

reduce outdoor physical activity   vs.   **commute by cycling/**

**be active**  
open windows   vs.   **close windows**



# Challenges – Met Data to Protect Health

Potential  
UHI effect in  
Edmonton,  
Alberta

August 18,  
2008



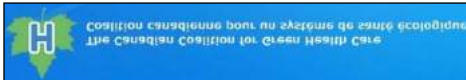
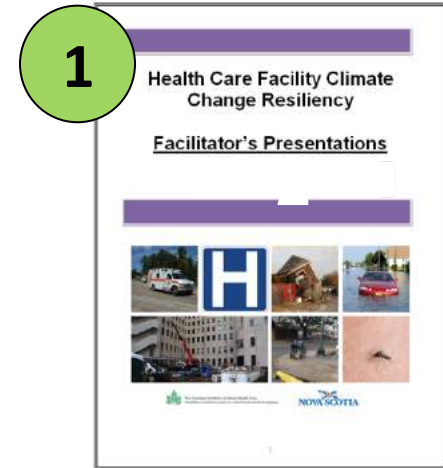


# Health Care Facility Resiliency Toolkit

## 1) Facilitator Presentation

## 2) Health Care Facility Resiliency Checklist

## 3) Best Practices and Resources



# THANK-YOU

**For more information, please contact:**

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