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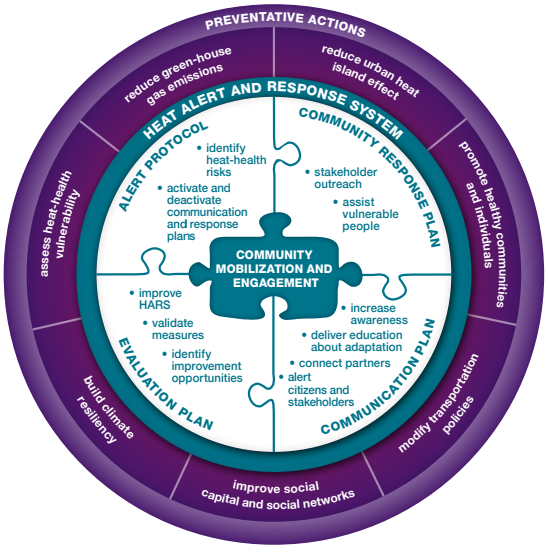
Developing Heat Alert and Response Systems in Urban and Rural Communities

Extreme heat as a health risk

Extreme heat events, also known as heat waves, pose a growing public health risk in Canada as a result of a changing climate. Heat-related deaths are preventable and Heat Alert and Response Systems (HARS) can help protect individuals and communities from the health impacts of extreme heat.[1]

Health Canada has developed a best practices guidebook for developing a HARS. The Guidebook helps users take into consideration community-specific vulnerabilities and identify appropriate outreach and response activities (Figure 1). Coupled with a heat-health vulnerability assessment, decision-makers are able to identify populations requiring assistance during extreme heat events.[2]

FIGURE1: Community HARS and preventative actions to reduce heat-health risks



Challenges and opportunities in urban and rural communities in protecting health from extreme heat

Differences in urban and rural communities based upon demographic make-up, access to public services and the built environment may affect their resilience to extreme heat events. Between 2008 and 2011, the rural community of Melita in Manitoba's Assiniboine Regional Health Authority (ARHA)[3] and the urban community of Windsor, Ontario established HARS with support from Health Canada. Comparison of HARS development in Windsor and Melita revealed important differences between these communities including:

- Exposure to heat stress
- Identification of vulnerable populations
- Cooling options for high risk populations
- Efforts to raise awareness to promote protective behaviours

Knowledge of how urban and rural communities differ in respect to heat-health vulnerability can provide public health and emergency management officials in Canada with information to help reduce health risks. Examples of adaptation options available to these types of communities to help protect vulnerable populations are presented in Table 1.

Canada

TABLE 1: Examples of heat-health adaptation options for urban and rural communities[4]

	Urban Communities	Rural Communities
Reducing exposure to heat stress	■ Mitigate the urban heat island ■ Optimize thermal comfort in key areas (e.g., playgrounds, schools, parks, downtown cores)	■ Promote alternative work hours to reduce heat exposure for some occupational groups ■ Collaborate with emergency services and regional public health authorities to increase support and coordination
Identification of vulnerable populations	■ Analyse the local relationship between temperature and mortality and morbidity (data permitting)	■ Estimate heat-health risk using data from nearby communities and historical records (e.g., health, environmental data)
Cooling options for high risk populations	■ Provide free public transit for vulnerable populations during extreme heat events ■ Designate cooling rooms in high rise apartment buildings ■ Distribute fans to rooming house residents ■ Extend the hours of city wading pools, splash pads, swimming pools, libraries, community centres	■ Optimize the use of air conditioned vehicles (school buses, Handi-vans, Para Transpo) during heat emergencies to transport vulnerable people to cooling locations ■ Employ social networks (e.g., care givers, community groups) for preparedness and response actions
Promoting protective behaviours	■ Create a communication and information sharing "hub" with stakeholders ■ Utilize local media (e.g., newspapers, radio, web, TV) for heat alerts ■ Provide information on heat-health and places to cool down in multiple languages ■ Communicate heat alerts through automated email blasts open to the public	■ Utilize social networks (e.g., care givers, community groups) to raise awareness of health risks and adaptations ■ Raise awareness of farmers and agricultural workers of health risks

Health Canada is working with partners at all levels of government to increase the resiliency of Canadians to the health impacts of extreme heat events (www.hc-sc.gc.ca/ewh-semt/climat/index-eng.php).

Additional Resources:

- *Heat Alert and Response Systems to Protect Health: Best Practices Guidebook*

www.hc-sc.gc.ca/ewh-semt/pubs/climat/response-intervention/index-eng.php

- *Adapting to Extreme Heat Events: Guidelines for Assessing Health Vulnerability* www.hc-sc.gc.ca/ewh-semt/pubs/climat/adapt/index-eng.php
- Online Course: *Health Care Workers Guide to Extreme Heat Events* www.extremeheat.ca
- Learn more on *Climate Change and Health* www.hc-sc.gc.ca/ewh-semt/climat/index-eng.php
- For further information please contact: Climatinfo@hc-sc.gc.ca

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[1] WHO, 2008

[2] Health Canada, 2012

[3] In 2012, the province of Manitoba reduced the number of Health Regions from 11 to 5. At this time, the ARHA and two other regional health authorities merged to form the Prairie Mountain Health Authority.

[4] See Health Canada's publication "Heat Alert and Response Systems to Protect Health: Best Practices Guidebook" for additional options that are applicable to both urban and rural communities.