SUBJECT: Heat Alerts PH06033 (City Wide)

RECOMMENDATION:

(a) That the Board of Health endorse the process proposed herein to develop options for i) determining when a heat alert be issued and ii) how the City of Hamilton will respond programmatically.

(b) That the Board of Health write to the Chief Medical Officer of Health applauding her undertaking to facilitate provincial standards on the issuance of heat alerts and requesting information as to how this process will unfold.

(c) That Public Health Services (PHS) staff be directed to report back to the Board of Health at its March, 2007 meeting on the results of this work so that plans for summer, 2007 are in place in advance of warmer weather.

EXECUTIVE SUMMARY:

In 2003, PHS started to issue heat alerts. The decision to issue an alert was based on an alert issued for the City of Toronto by Toronto Public Health. In the event of an alert, community partners were notified of the expectation of hot weather.

Based on evidence that weather in Hamilton is different (and generally cooler) from that in Toronto, that people at greatest risk of heat-related adverse health events are the elderly and people living in substandard housing with medical conditions that may limit
their awareness of media announcements of heat alerts, and that a coordinated programmatic response had not been developed to protect persons at risk, the program was reviewed. In July, 2006, letters (Appendix A & B) were sent to community partners who had received faxed notifications of heat alerts in previous years and to operators of residential care facilities informing them that PHS would no longer be issuing heat alerts and asking them to continue in their efforts to prevent heat-related adverse health events. Heat alert notifications were reinstated August 1, 2006, until Board of Health members could be advised of the process for the review.

In light of the limitations of the pre-July status quo, this report outlines a process to develop a more effective approach to i) determining when a heat alert be issued and ii) how the City of Hamilton will respond programatically.

**BACKGROUND:**

Over the last five years, several Ontario public health units have voluntarily issued heat alerts. As most of the province’s Boards of Health are distinct from municipalities, the programmatic response is then left up to individual municipalities and agencies, with the exception of the City of Toronto. The existing Hamilton response is based entirely on voluntary efforts by community partners.

In part, the variation in practice with respect to heat alerts and program response across the province reflects lack of consensus in determining when a heat alert should be issued and what an effective response would be. The evidence tells us that the population at risk from sustained extreme heat is persons living in multiple unit residences with poor air circulation and no air conditioning.

The adverse health effects of heat arise directly through the interplay of physical exertion with ambient temperature and humidity which may undermine the body’s natural cooling processes, and indirectly by contributing significantly to poor air quality which makes respiratory and cardiac conditions worse. The deaths and hospital admissions attributable to poor air quality are estimated to be at least tens of times more than those attributable to direct effects of high temperatures. Evidence from warmer jurisdictions points to the importance of sustained (i.e. over several days and without significant night time cooling) high temperatures in leading to adverse health effects.

By contrast, ambient temperatures alone largely determine the impact of cold temperature on human health. Furthermore, extreme cold primarily affects people who are outdoors, particularly those living on the street and public inebriates. Thus, an effective programmatic response to extreme cold focuses on finding people ill-equipped to be outdoors and offering them transport to shelter, as occurs in Hamilton.

A programmatic response to high temperatures faces a different challenge because even if the people at risk can be located, there is little consensus on effective measures to reduce health risks from high temperatures. Some communities set up ‘cooling centres’ in municipal facilities, but the use and impact of these appears minimal to modest at best. Part of this is likely because of the much stronger influence of poor air quality on health at times of high temperatures – people in cooling centres are still breathing poor
quality air which is far more likely to lead to hospitalization and death than high temperatures alone.

In our discussions with the City of Toronto regarding their cooling centres, they kindly shared their data from last year – the hottest summer on record. In 2005, there were 24 heat alerts (8 heat alerts and 16 extreme heat alerts), and 12000 people attended one of 4 ‘cooling centres’, an average of 500 people per alert. Applying a 20% rule of thumb to reflect the differences in population, that would amount to roughly 100 people spread across Hamilton. Note that this assumes weather in Hamilton as extreme as in Toronto, which was not the case in 2005.

Finally, an effective response to protect people in the City of Hamilton would logically be based on the weather and forecast temperatures in the City of Hamilton, not those in Toronto. Our consultations with Environment Canada and scientific evidence about the health effects of heat do not point to significant, measurable direct health effects of heat in the City of Hamilton. While local weather may include isolated days of extreme heat, nighttime cooling and the presence of the lake as a moderating influence combine to reduce risks to human health significantly. High temperatures act on human health in Hamilton primarily by contributing to worsening air quality.

**ANALYSIS/RATIONALE:**

In light of recent attention to heat alerts and what if any programmatic response would follow, PHS has identified two related issues:

1. How should it be decided that a heat alert be issued for Hamilton?

2. What should be the programmatic response when a heat alert is issued?

These questions are being addressed by reviewing the literature, and developing an evidence-based, made in Hamilton for Hamilton program for consideration by the Board of Health. As stated in the July letter to community partners, PHS “will be developing an inventory of residential premises whose occupants may be at high risk in the event of extreme heat so that relevant responses can be developed that are tailored to the populations at risk”.

To develop evidence-based approaches to both these issues that will reflect community values and ensure participation, PHS will undertake a consultation process with those community partners. In addition, in response to a letter from Mr Tom Cooper (appendix C), an invitation was extended to the groups he represents to participate in that process. (appendix D) To date, no response has been received from either the Solutions for Housing Action Committee or the Roomers and Boarders Committee of Hamilton.

In addition, we are awaiting the outcome of an undertaking by the Chief Medical Officer of Health to facilitate the development of provincial standards that would eliminate variation among health unit practices. PHS intends to develop options for consideration by the Board of Health that would reflect emerging provincial standards, if these are available.
ALTERNATIVES FOR CONSIDERATION:

1. Continue current approach

This option is not recommended as using Toronto weather and alerts as a proxy for Hamilton does not reflect local conditions and the alert system delivers an uncoordinated collection of voluntary actions that provide no assurance of reaching those citizens at greatest risk.

2. Do nothing

This option is not recommended as those vulnerable members of the community at high risk of heat-related adverse effect will remain at risk.

FINANCIAL/STAFFING/LEGAL IMPLICATIONS:

The process of reviewing evidence, gathering input through consultation and developing the March, 2007 report will be managed with existing resources.

Programmatic responses such as cooling centres or intensified home visiting are likely to have significant resource implications. Estimates of these will be included in the March, 2007 report.

POLICIES AFFECTING PROPOSAL:

The authority of the MOH to issue a 'heat alert' stems from customary practice and is not mentioned in either the Health Protection and Promotion Act or its accompanying regulations. Heat alerts and responses to heat alerts do not appear in the current Mandatory Health Programs and Services Guidelines.

RELEVANT CONSULTATION:

All Medical Officers of Health in Ontario were surveyed and discussions were held with Halton, Peel and Toronto Public Health Units.

CITY STRATEGIC COMMITMENT:

By evaluating the “Triple Bottom Line”, (community, environment, economic implications) we can make choices that create value across all three bottom lines, moving us closer to our vision for a sustainable community, and Provincial interests.

Community Well-Being is enhanced. ☑ Yes ☐ No
Public services and programs are delivered in an equitable manner, coordinated, efficient, effective and easily accessible to all citizens.
Through the development of an Alert and Response System derived from evidence based practices, well coordinated with all stakeholders, internal and external.

Environmental Well-Being is enhanced. ☑ Yes ☐ No
Human health and safety are protected.
Through the development of an Alert and Response System designed specifically to meet the needs of Hamilton and its most vulnerable populations.

**Economic Well-Being is enhanced.**  ☑ Yes  ☐ No
Through the development of an Alert and Response System that is coordinated and meets the needs identified through evidence based practice, specific to Hamilton's unique climate and environment.

Does the option you are recommending create value across all three bottom lines?  
☑ Yes  ☐ No

Do the options you are recommending make Hamilton a City of choice for high performance public servants?  
☑ Yes  ☐ No
The creation of a respectful, desirable and supportive workplace through the development of a process that values input from staff utilizing skills developed by adhering to evidence based recommendations and decision making.
June 27, 2006

Dear RCF Operator/Administrator,

I am writing to you to update you on the matter of heat alerts issued by City of Hamilton Public Health Services (PHS). As you may know, some local public health units in Southern Ontario have issued or continue to issue heat alerts when temperatures are expected to be high for some number of consecutive days.

After a careful review of the evidence, City of Hamilton PHS will not be issuing heat alerts. Local weather patterns are such that alerts may be so frequent as to lack credibility and the population at risk from sustained extreme heat is persons living in multiple unit residences with poor air circulation and no air conditioning. Hamilton is fortunate in that evening cooling provides relief from extreme temperatures for people who can open the windows of the spaces where they live.

Many of you provide services to people who may be at risk from the adverse health effects of extreme heat. Ensuring that all persons in your care have access to water to drink, windows that can be opened in sleeping quarters, and CSA-approved electric fans for cooling should prevent many of these adverse effects. Some medications, particularly those prescribed for psychiatric conditions can affect the body’s ability to respond to heat or cold and advice should be sought from the prescribing professional if you have any questions about these situations.

Although heat alerts will no longer be provided by PHS, we are focusing our efforts on effective communication about air quality. Poor air quality is a significant public health issue in our community and air quality typically deteriorates with increasing temperature, meaning that a combined approach to poor air quality and extreme temperature is likely more effective. Should you have any questions about the effects of heat or air quality and measures you or your organization can take to reduce these health risks, please do not hesitate to contact me.

Sincerely,

Matthew Hodge MDCM, PhD, FRCPC
Associate Medical Officer of Health
City of Hamilton
mahodge@hamilton.ca
July 7, 2006

Dear Community Partner,

I am writing to you to update you on the matter of heat alerts issued by City of Hamilton Public Health Services (PHS). As you may know, some local public health units in Southern Ontario have issued or continue to issue heat alerts when temperatures are expected to be high for some number of consecutive days. In Hamilton, we have reviewed our heat alert program to determine whether or not we are providing a service that effectively protects the health and well-being of our residents.

Based on this review, we have confirmed that local weather patterns are such that alerts may be so frequent as to lack credibility. The evidence also tells us that the population at risk from sustained extreme heat is persons living in multiple unit residences with poor air circulation and no air conditioning. Hamilton is fortunate in that evening cooling provides relief from extreme temperatures for people who can open the windows of the spaces where they live.

By contrast, extreme cold primarily affects people who are outdoors, particularly those living on the street and public inebriates. The important outreach activities provided during periods of extreme cold remain vital to the health of Hamilton’s population. Going forward, we will be developing an inventory of residential premises whose occupants may be at high risk in the event of extreme heat so that relevant responses can be developed that are tailored to the populations at risk.

Many of your organizations have provided drinking water to program participants or residents and we would encourage you to continue this work. Open windows in sleeping quarters and CSA-approved electric fans for cooling places where clients sleep or wait indoors may also be valuable in reducing discomfort and health risks of extreme heat.

Although heat alerts will no longer be provided by PHS, we are focusing our efforts on effective communication about air quality. Poor air quality is a significant public health issue in our community and air quality typically deteriorates with increasing temperature, meaning that a combined approach to poor air quality and extreme temperature is likely more effective. Should you have any questions about the effects of heat or air quality and measures you or your organization can take to reduce these health risks, please do not hesitate to contact me.

Sincerely,

Matthew Hodge MDCM, PhD, FRCPC
Associate Medical Officer of Health
City of Hamilton
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