



STAFF REPORT ACTION REQUIRED

Extreme Cold Weather Alerts in Toronto

Date:	April 13, 2015
To:	Board of Health
From:	Medical Officer of Health
Wards:	All
Reference Number:	

SUMMARY

Cold weather can adversely affect the health and wellbeing of many Toronto residents. In particular, exposure to extreme cold weather can harm the health of vulnerable populations including homeless populations, the elderly, those with pre-existing heart conditions, and children.

In February 2015, City Council requested the Medical Officer of Health, in consultation with the General Manager, Shelter, Support and Housing Administration to report to the Board of Health on the discretion built into the current City's Cold Weather Protocols and if there is any need to amend the policy titled, "Comprehensive Cold Weather Protocols and Cold Weather Health Impacts in Toronto," in order to respond effectively to the City's homeless population.

The Medical Officer of Health currently calls Extreme Cold Weather Alerts when the temperature is forecast to reach -15 °C or colder. Alerts may also be issued at temperatures approaching -15 °C when Environment Canada's weather forecast includes other factors that increase the impact of cold weather on health. Such factors include wind chill, precipitation, extended periods of cold weather, and sudden changes to colder weather. A forecast windchill of -20 or colder will normally trigger an Extreme Cold Weather Alert. This approach enables the use of discretion in calling Alerts. It also allows for Toronto Public Health (TPH) to take a precautionary approach to calling Extreme Cold Weather Alerts, recognizing that forecasts may not always be correct and that weather conditions may change quickly.

While no new information is available that would indicate a change is currently warranted in the way Extreme Cold Weather Alerts are called, TPH is aware of several ongoing studies related to health impacts of cold weather. A future report to the Board of

Health will report on new research findings, the experiences of the 2014/2015 cold weather season, and whether any enhancements should be made to the City's Cold Weather Plan.

RECOMMENDATIONS

The Medical Officer of Health recommends that:

1. The Board of Health request the Medical Officer of Health to report to the October 26, 2015 meeting on further analysis and new research related to calling Extreme Cold Weather Alerts in Toronto.

Financial Impact

There are no financial implications arising from the adoption of this report.

DECISION HISTORY

In June 2014, Toronto Public Health conducted a comprehensive review of the health impacts of exposure to cold weather that is available as a technical report called, "Health Impacts of Cold Weather" at www.toronto.ca/health/reports

In July 2014, City Council adopted a report from the Medical Officer of Health and the General Manager, Shelter, Support and Housing Administration entitled, "Comprehensive Review of Cold Weather Protocols and Cold Weather Health Impacts in Toronto". At this meeting, City Council approved the transfer of responsibility for co-ordinating Toronto's cold weather alert and response program from Shelter, Support and Housing Administration to the Medical Officer of Health in time for the 2014-2015 cold weather season (<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2014.HL32.3>).

In February 2015, City Council requested that the Medical Officer of Health, in consultation with the General Manager, Shelter, Support and Housing Administration to report to the Board of Health on the discretion built into the current City's Cold Weather Protocols and if there is any need to amend the policy titled "Comprehensive Cold Weather Protocols and Cold Weather Health Impacts in Toronto" in order to respond effectively to the City's homeless population. (See <http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.CD1.6>).

ISSUE BACKGROUND

Each year, winter weather brings cold temperatures and cold and wet conditions to Toronto. Cold weather can adversely affect the health and wellbeing of many of Toronto's residents.

It is well-known that people experiencing homelessness are particularly vulnerable to the direct health impacts of cold weather. Such impacts include hypothermia, frostbite, and trench foot. People experiencing homelessness are at high risk for cold weather injuries

because they are likely to spend long periods of time outside, resulting in increased exposure. Some factors that contribute to the risk of homelessness, such as alcohol use, psychiatric disorders, and use of certain medications can also increase the risk of cold weather injuries.

Emerging research suggests that the health impacts of cold weather are not limited to the direct impacts of cold on homeless populations. The elderly and those with pre-existing health conditions, especially heart conditions, may be at increased risk from exposure to the cold. Some evidence also suggests that socioeconomic factors such as deprivation may increase the risk of hospitalization or death due to cold.

In 2014, Toronto Public Health (TPH) and Toronto's Shelter, Support, and Housing Administration (SSHA) conducted a review of the City's cold weather protocols, including the threshold used to call Extreme Cold Weather Alerts. As a result, City Council transferred the responsibility for calling Extreme Cold Weather Alerts from SSHA to TPH starting with the 2014/2015 winter season. Additionally, the Board of Health recommended that TPH develop a comprehensive Cold Weather Plan for Toronto, and that Extreme Cold Weather Alerts be issued by the Medical Officer of Health when Environment Canada forecasts a temperature of -15°C or colder, taking into account wind chill and other weather conditions.

SSHA maintains full leadership over Extreme Cold Weather Alert response activities intended to prevent cold-related injury among people experiencing homelessness. These include respite services such as drop-in centres that provide temporary escape from the cold, outreach services to connect with individuals on the street and additional shelter beds.

COMMENTS

Extreme Cold Weather Alerts

Extreme Cold Weather Alerts are declared by the Medical Officer of Health when cold weather conditions are expected to be associated with elevated health risks. The objectives of calling Alerts are:

- To warn people who are vulnerable to cold weather and their service providers and caregivers that such conditions are expected or already exist in the City;
- To urge vulnerable people to take measures to protect their health and to come indoors if they are sleeping outdoors or in precarious situations;
- To trigger response activities by City and community partners to protect vulnerable people within the city (e.g. enhance services).

Between November 15 and April 15 each year, the Medical Officer of Health issues Extreme Cold Weather Alerts when Environment Canada forecasts a temperature of -15°C or colder. The Medical Officer of Health may also issue Extreme Cold Weather Alerts at temperatures approaching -15°C when Environment Canada's forecast includes a combination of other factors that increase the impact of cold weather on health (See Table 1).

Table 1: Other factors to consider when calling Extreme Cold Weather Alerts

Weather Condition	Description
Severe wind chill	A forecast wind chill of -20 or colder will normally trigger an Extreme Cold Weather Alert. This is based on evidence for increasing risk of frostbite and hypothermia with wind chill.
Other weather factors to consider when approaching the threshold of -15°C or -20 windchill.	<ul style="list-style-type: none"> • Significant amounts of precipitation (e.g. when Environment Canada calls a Snowfall Warning or Freezing Rain Warning) • Low temperatures for multiple days/nights • A sudden drop in temperature or windchill (e.g. conditions are suddenly and unusually cold compared with previous weather)

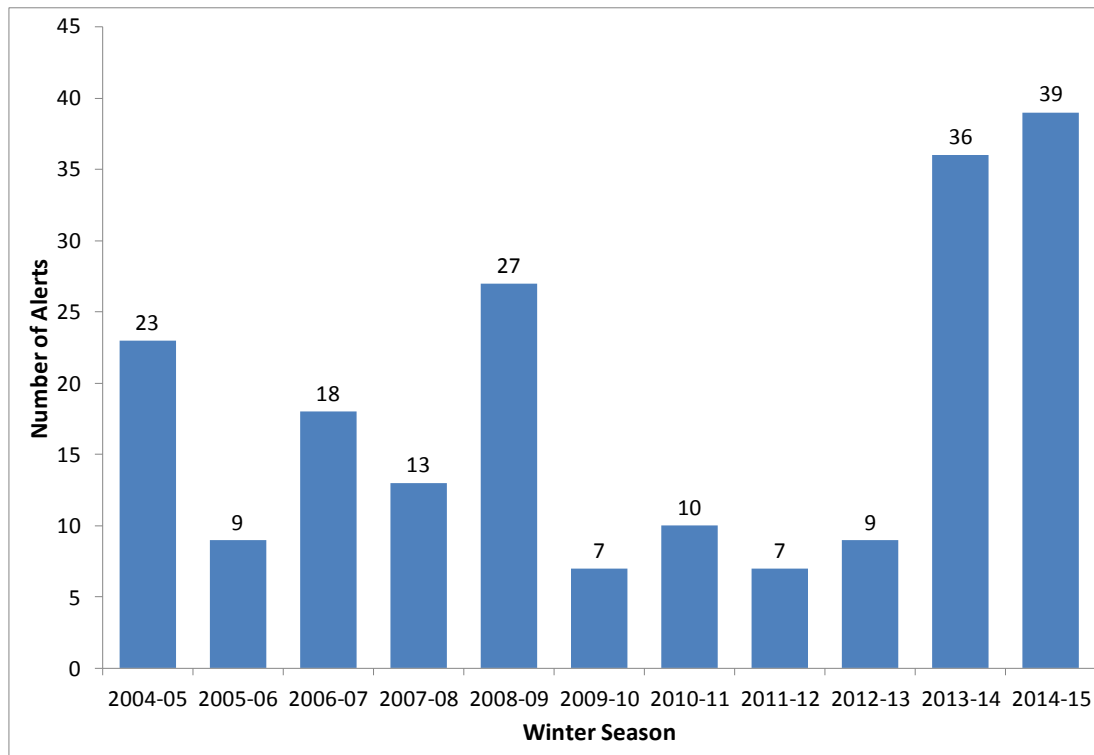
This approach enables TPH to take a precautionary approach to calling Extreme Cold Weather Alerts, recognizing that forecasts may not always be correct and that conditions may change quickly.

On every morning of the cold weather season, TPH staff, in collaboration with the Medical Officer of Health, carefully review Environment Canada's 24 hour weather forecast. A decision is made to call an alert, leave alert in place or terminate an alert based on temperature and other considerations such as wind chill forecast for the next 24 hour period.

Shelter, Support and Housing Administration retains the ability to extend additional services to clients at any time, regardless of whether an Extreme Cold Weather Alert is declared. Decisions to extend cold weather services in the absence of an alert are based on an assessment of the service needs of the most vulnerable street-involved individuals.

The number of Extreme Cold Weather Alerts has been higher in recent years (See Figure 1). For the 2014/2015 winter season there were 39 Extreme Cold Weather Alerts issued by the Medical Officer of Health. Of these, 13 alerts were on days that did not meet the -15°C temperature threshold, however, they were called due to consideration of other factors that increase the impact of cold weather on health. For 11 of those 13 days, the primary factor for calling these alerts was a forecast of severe wind chill, despite a forecast low temperature warmer than -15°C.

Figure 1: Number of Extreme Cold Weather Alerts Called in Toronto, Winter 2004/05 to Winter 2014/15



Emerging Information and Next Steps

An active community of researchers continues to investigate the health effects of cold weather, including efforts to examine thresholds for intervention. This includes a collaborative study by St. Michael's Hospital and TPH into the health impacts of cold weather on homeless populations in Toronto and an analysis by Public Health Ontario on the relationships between temperature and morbidity and mortality for Toronto. As well, TPH will examine historical Environment Canada weather data together with mortality from cold weather injuries in Toronto, and will continue to monitor new research about health impacts of cold weather that is published by other experts around the world.

During the 2014/2015 cold weather season, TPH also initiated consultations with key stakeholders about the City's Cold Weather Plan to identify opportunities for enhancement of the response plan. Toronto Public Health (TPH) will report back to the Board of Health on these initiatives in October 2015. The report is expected to identify opportunities to enhance the Cold Weather Plan, including any improvements to communication with stakeholders, as well as identifying whether additional evidence is available to support changes to the way Extreme Cold Weather Alerts are called.

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