



GATINEAU

The importance of region-specific triggers

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THE SCIENCE

Longer and more severe extreme heat events will impact the health of Canadians unless more adaptation efforts are made. It is important that health authorities across the country establish alert protocols to prepare for these events as there is a correlation between elevated temperatures, increases in mortality, and the incidence of disease. This correlation is region-specific and can vary depending on the duration and severity of the event. Other factors such as a population's vulnerability and its capacity to adapt to extreme heat can influence how a population will react under high temperatures. Implementing region or community specific triggers contributes to better response to the specific needs of a community during extreme heat events.

Heat-alert triggers should take into account how changes in intensity and duration of an extreme heat event can impact mortality and morbidity within a specific community. Triggers are usually community-specific measures derived from one or more meteorological parameters (e.g. temperature, humidity) that are forecasted to last for one or more days.

THE TRIGGER

Gatineau implemented a plan to address and mitigate health risks in response to the increased likelihood of severe extreme heat events in Canada. The plan was based on lessons learned from Montreal and guidance from the Province of Quebec. It was developed through a partnership between the Province of Quebec and the southern region's Health Agencies, which identified region-specific thresholds when higher mortality and morbidity rates were observed. The Health Agencies then used these thresholds to set local triggers for the regions of Quebec most likely to be affected by a heat wave.

THE APPROACH

The temperature and humidity thresholds associated with different levels of heat alert are slightly different from one location to another as flexibility is given to regional authorities to adapt their thresholds to the circumstances of their local context. The thresholds adopted in Gatineau were determined by *Santé Publique du Québec*.

To ensure timely and accurate identification of local weather patterns that reach set triggers, seasonal surveillance is in effect from May 1 to September 30. During this period, local authorities (with *Santé Publique du Québec* as the lead) work closely with Environment and Climate Change Canada. This partnership allows access to timely weather forecasts that are critical to supporting decisions to issue an Alert and initiating response measures. In addition, in an effort to provide inter-jurisdictional consistency, *Santé Publique du Québec* worked with Ottawa Public Health and other municipalities in the region to ensure timely and consistent communication with the public and partners.

Figure 4: Alert protocol and examples of corresponding actions for the City of Gatineau

| Phase | Indicators | Examples of Response Measures |
|------------------------------|--|---|
| Seasonal Surveillance | May 1 st to September 30 th | <ul style="list-style-type: none"> • Prepare heat-health risk prevention messaging • Develop a list of facilities that could be made available to the public during extreme heat events |
| Active Surveillance | Extreme heat warning by Environment Canada. Air temperature forecast Tmax $\geq 30^{\circ}\text{C}$ and humidex ≥ 40 | <ul style="list-style-type: none"> • Disseminate heat-health risk prevention messages • Inform municipal workers of preventive measures and behaviours that should be adopted |
| Alert | Forecast of 2 consecutive days where Tmax $\geq 31^{\circ}\text{C}$, humidex ≥ 40 and Tmin $\geq 18^{\circ}\text{C}$ | <ul style="list-style-type: none"> • Inform the public of the location of cooling centres • Remind municipal workers of preventive measures and behaviours that should be adopted |
| Intervention | Alert indicators proven, watch data shows increases in hospital admissions or excess deaths | <ul style="list-style-type: none"> • Open the Municipal Coordination Centre • Prepare the cooling centres that could host vulnerable populations • Keep public pools and splash pads open in the evening if necessary. • Transport vulnerable populations that do not have access to other modes of transportation to cooling centres • Establish a media and communication centre |
| Recovery | When the threat is removed | <ul style="list-style-type: none"> • Close temporary cooling centres • Inform the population, the operation centre, governmental entities and the media about the end of operations |

When an Extreme Heat Warning is issued by Environment and Climate Change Canada or temperatures are forecast to reach $\geq 30^{\circ}\text{C}$ and humidex ≥ 40 , Active Surveillance is activated and the team is put on standby. During this stage, the Emergency Operation Centre members are informed of the change in status and must be ready to mobilize at a moment's notice. If extreme temperatures and humidity are forecast to be sustained for at least two consecutive days - with maximum temperatures of $\geq 31^{\circ}\text{C}$, humidex ≥ 40 , and minimum temperatures of $\geq 18^{\circ}\text{C}$ - an Alert is issued and response measures are implemented on the third day to assist the public, particularly for populations at risk. For example, Public Health Gatineau disseminates heat-health information to the public and at-risk groups in locations such as day cares and seniors' homes. The Intervention phase of the protocol is activated when alert indicators are proven, when the watch data shows increased transportation and admission to local hospitals or when excess deaths are observed. When the temperature no longer represents a risk to peoples' health, a Recovery phase is activated and lessons learned are used to improve the system (figure 4).

THE OUTCOME

The collaboration between *Santé publique du Québec*, the southern region's Health Agencies and the City of Gatineau led to the identification of triggers that are locally focused, based on heat-health relationships, and harmonized across the province and inter-jurisdictionally. The alert protocol now takes into consideration factors such as the duration of the heat event, maximum and minimum temperatures and humidex. The protocol is implemented in multiple stages which are linked to specific response measures.

When an alert is issued, Gatineau works in partnership with the *Centre intégré de santé et de services sociaux* and the *Direction de santé publique* to provide services to at-risk groups, issues alerts, and delivers relevant health-protection information to people who are at an elevated risk (e.g. older adults). Communicating heat-protection information helps to improve awareness about the risks and builds knowledge of actions that should be taken to protect health.

A WORD FROM GATINEAU

According to Jacques Rathwell, Emergency Measures Manager for the City of Gatineau, "communicating heat-health risks to the elderly and other vulnerable individuals represents one of the most challenging tasks that the city had to undertake when implementing its alert protocol." To achieve greater communication, Mr. Rathwell recommends "partnering with local health organizations that tend to be involved with more vulnerable groups of the population. In Gatineau, the local health groups have also proven to be helpful outside of heat alert periods, as they disseminate information related to heat-health throughout the year."