

Schizophrenia and Extreme Heat

This short document has been prepared by Environmental Health Services at the BC Centre for Disease Control to provide high-level information on the risks of extreme heat events for people with schizophrenia. The document is intended to inform extreme heat planning within agencies and organizations that serve people with mental illnesses and their support networks. Any questions about the information provided here should be directed to:

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Background

Schizophrenia is a clear risk factor for mortality during extreme heat events. During the 2021 heat dome in British Columbia, the death rate among people with schizophrenia was much higher than would be expected based on the prevalence of the condition within the population. The hottest week of the 2021 heat dome was June 25 – July 1. During this period there were 1513 deaths in total, and 8.3% (N=126) of those decedents had schizophrenia according to the provincial chronic disease registry. When compared with the same periods in 2012 – 2020, the average proportion of weekly decedents with schizophrenia was 3.1%. The BC Coroners Service reviewed all deaths reported between June 25 – July 12 and found that 619 were directly attributable to the hot weather. Of these decedents, 12.9% (N=80) had schizophrenia.

The chronic disease registry for schizophrenia is based on administrative health records. Someone is included in the registry if they have one hospital admission or two outpatient physician visits for schizophrenia within a 2-year period. This definition may not capture all people who have schizophrenia, so we have also looked at individuals who had at least one outpatient physician visit for certain psychoses in the year prior to their death. During the hottest week of 2021 there were 1513 deaths in total, and 8.6% (N=130) of those decedents had at least one visit for psychoses. When compared with the same periods in 2012 – 2020, the average proportion of decedents with psychoses was 6.8%.

There is evidence that medications such as antipsychotics can affect thermoregulation and may therefore increase risk among users during extreme heat events. Such medications may also have other negative side effects. For all people with schizophrenia who died during the heat dome (N=126), we have assessed all medications dispensed within 90 days of the start of the heat dome. The average number of medications dispensed was 11.5, and 89% had been prescribed an antipsychotic. When the same analysis was repeated for all people in the province with schizophrenia prior to the heat dome (N=41044), the average number of medications dispensed in the past 90 days was 6.8, and 74% had been prescribed an

antipsychotic. These differences may suggest that those who died during the heat dome had more severe disease or more comorbid health conditions than the average population of individuals with schizophrenia. Further work is needed on this topic.

Explanation of increased risk

It is clear that individuals with schizophrenia were at high risk of mortality during the 2021 heat dome. There are multiple interrelated factors that likely contribute to this elevated risk. First, many people who have schizophrenia lack insight into their own health and may demonstrate *anosognosia*, meaning that they are unable to recognize when they are unwell. Therefore, people with schizophrenia may not perceive the existential threat of extreme heat exposure. Second, some people with schizophrenia have disorganized thinking or delusions that put them at higher risk during extreme heat events. For example, people with schizophrenia may not perceive high temperatures and recognize the need to remove extra clothing or open windows. Third, schizophrenia often co-occurs with substance use disorders, which also puts people at higher risk during extreme heat. Long-term substance use can lead to chronic conditions that increase risk (e.g., alcoholic cardiomyopathy), and acute intoxication can lead to hyperthermia (e.g., use of cocaine or amphetamines) or reduced perception of the thermal environment. Fourth, having schizophrenia is associated with lower socioeconomic status, meaning that people may not have the means to access protective technologies such as air conditioning. Similarly, the negative symptoms of schizophrenia can cause withdrawal and isolation, meaning that people may remain indoors and alone, without social support, during extreme heat events. Finally, as previously mentioned, medications used to treat schizophrenia can affect the physiological response to high temperatures.

Supporting people with schizophrenia during extreme heat events

It is critical that friends, family, caregivers, and others who support people with schizophrenia understand that the condition puts them at high risk of severe heat-related illness and possible death during extreme heat events. Increased risk among people with schizophrenia is often not recognized in public health communications about extreme heat, nor in media coverage. There is an opportunity for many supportive agencies and organizations to disseminate such information to those who need it most.

Two of the biggest risk factors for people with schizophrenia are likely disorganized thinking and behaviour, including lack of insight into their own health, and social isolation. Both of these risk factors can be addressed with regular and frequent health checks during periods of extreme heat. Such checks can be done in-person or remotely, and they allow an objective observer to evaluate how susceptible people are coping with high temperatures. For those who do not have an air-conditioned environment, most guidance recommends at least two health

checks per day, with one during the evening hours when it is hottest indoors. Health checks should focus on assessing symptoms of heat-related illness and responding as required. They should also be used to encourage people to take protective measures to cool themselves and their home environment. Plain-language guidance for conducting health checks can be found [here](#).

Although the medications used to treat schizophrenia can affect thermoregulation, there is no evidence to support interruption of medication use during extreme heat events. As described above, medication use is only one of many risk factors for people with schizophrenia. Stopping medication use is unlikely to significantly reduce heat-related risks, and likely to lead to other complications. In the absence of contrary clinical evidence, people with schizophrenia should be encouraged to maintain their therapeutic regime during extreme heat events and protective interventions should focus on addressing other risk factors.