# Review of Cooling Devices as Medical Equipment for Vulnerable Populations during an Extreme Heat Event

**B.C. MINISTRY OF HEALTH**
**JUNE 28, 2023**

## Acknowledgement

The Ministry of Health acknowledges that we deliver our services across the ancestral, traditional, and homelands of hundreds of First Nations, each with their own unique histories, cultures, and traditions. We offer our commitment to working in good relations and to implementing the province's Declaration on the Rights of Indigenous Peoples Act (DRIPA).

In 2021, 619 people died from heat-related illnesses during an unprecedented heat dome. The expert panel's report to the Chief Coroner (Extreme Heat and Human Mortality: A Review of Heat-Related Deaths in B.C. in Summer 2021) outlined recommendations and priority actions to protect British Columbians from the effects of future extreme heat events. This report provides an overview of the Ministry of Health's responses to those recommendations and priority actions, as well as other steps taken by the Province.

The Ministry of Health acknowledges the support and collaboration provided by numerous provincial ministries (Health, EMCR, Housing, SDPR), as well as B.C.'s regional health authorities, First Nations Health Authority, BC Emergency Health Services, Indigenous communities, BC Centre for Disease Control, Emergency Management BC (EMCR), Health Emergency Management BC, and key stakeholders such as BC Hydro, BC Housing, the Government of Canada, the BC Coroners Service, and organizations that work with heat susceptible or equity-denied populations.

The Ministry of Health offers its sincere and heartfelt condolences to all those who lost loved ones or were injured during the heat dome of 2021.

## Introduction

In 2021, from June 25 to July 1, many areas of British Columbia (B.C.) experienced an unprecedented heat dome, an extreme heat event during which temperatures significantly exceeded annual averages and overnight temperatures also remained uncharacteristically high. Whereas 200 deaths are typically recorded each year in B.C. during that week, during the week of the heat dome, more than 800 British Columbians passed away.

During the same week, B.C. hospitals also experienced a significant spike in emergency department visits and admissions related to heat-sensitive conditions, with B.C. health authorities recording 1,090 more heat-sensitive emergency department visits and 728 more heat-sensitive admissions than would typically be expected during that period. After the BC Coroners Service concluded that 619 of the deaths were from heat-related illnesses, in April 2022, the Chief Coroner of B.C. convened a review panel to review the circumstances around the excess deaths. The panel's report, *Extreme Heat and Human Mortality: A Review of Heat-Related Deaths in B.C. in Summer 2021*[1], (Report to the Chief Coroner) was released two months later.

Among the notable findings in the BC Coroners Report were that:

- 98% of deaths occurred indoors in a residence; and
- most deceased were in homes without adequate cooling systems such as air conditioners (93%) or fans (76%).

With the goal of improving public safety and preventing future deaths in case of another extreme heat event, the review panel identified three overarching recommendations:

1. Implement a coordinated provincial heat alert and response system (HARS);
2. Identify and support populations most at risk of dying during extreme heat emergencies; and,
3. Implement extreme heat prevention and long-term risk mitigation strategies.

To support these recommendations, the Report to the Chief Coroner identified 14 priority actions. Ten priority actions were recommended for the Ministry of Health to respond to, with four other recommendations identified for the Ministry of Emergency Management and Climate Readiness (EMCR), the Ministry of Environment and Climate Change Strategy, the Ministry of Attorney General and Responsible for Housing, and the Union of BC Municipalities. An update on the priority actions recommended for the Ministry of Health can be found in Appendix A.

To support these recommendations, several priority actions were identified, including the following action item in support of recommendation No. 2:

> "... the Ministry of Health, in collaboration with the Ministry of Social Development and Poverty Reduction, and in consultation with vulnerable populations, will conduct a review into issuing cooling devices as medical equipment accessible to persons most at risk of dying during an extreme heat event, and make public the findings of the review."

This report focuses on the issuing of cooling devices to persons most at risk of dying during an extreme heat event and on the accessibility of air conditioning units as well as programs affecting accessibility to heat pumps, which can also be used to regulate and cool home temperatures.

## Review Format

The review undertaken by the Ministry of Health in collaboration with the Ministry of Social Development and Poverty Reduction (SDPR) included the following components:

- An analysis of the populations most at risk of dying in an extreme heat event (using the demographics provided in the Chief Coroner Report);
- A review of B.C. programs that provide medical equipment free of charge to vulnerable populations[2];
- A review of Canadian programs outside B.C. that distribute cooling devices to vulnerable populations;
- A review of select programs in the United States that distribute cooling devices to vulnerable populations;
- A review of tax incentives and rebates available in Canada for cooling devices; and,
- Other considerations.

"Most of the people who died were older or were people who had health conditions that put them at higher risk. Most of the deaths occurred inside private residences that got dangerously hot."

- *Dr. Bonnie Henry, B.C. Provincial Health Officer*

# 1. POPULATIONS MOST AT RISK OF DYING IN AN EXTREME HEAT EVENT

The Report to the Chief Coroner provides an informative profile of the 619 British Columbians who passed away from heat-related causes during the heat dome:

- 67% of the decedents were 70 years of age or older, and 90% were over age 60;
- More than two-thirds (69%) of decedents were identified as having chronic illnesses that potentially could impact mobility, including conditions such as heart failure, arthritis or Parkinson's disease;
- 62% of decedents had 10 or more visits to a health professional within the 12 months prior to their death (data collected from the Medical Services Plan);
- 64% had chronic illnesses that impacted cognition, including diseases such as dementia;
- 91% of the deceased were assigned to one or more of the BC Centre for Disease Health Chronic Disease Registries[3] indicating one or more comorbidities (i.e., 71% of the deceased had hypertension, 60% had mood and anxiety disorders, 54% had depression, 37% had diabetes, and 33% had osteoarthritis);
- Heat-related deaths were higher among persons on specific chronic disease registries compared to the B.C. population (e.g., schizophrenia, substance use disorder, epilepsy, chronic obstructive pulmonary disease, depression, asthma, mood and anxiety disorders, and diabetes);
- 74% (457) of deaths occurred in the Fraser and Vancouver Coastal health authorities;
- 28% of decedents lived in neighborhoods that were most materially deprived and 33% lived in neighborhoods that were most socially deprived;
- 73% of deaths occurred in private residences (39% in multi-unit buildings and 34% in detached buildings); 10% occurred in social housing, single room occupancy (SRO), or supportive housing; 7% occurred in trailer homes, mobile homes, RVs, or campers; and 7% occurred in senior housing or long-term care homes; and 4% outside/other residential; and,
- More than half (56%) of decedents lived alone; 30% lived with spouse or family members; 8% lived in community or assisted living situations (i.e., group home, senior homes, long-term care homes); and 5% lived with unrelated friends or roommates.

The statistics and findings in the Report to the Chief Coroner show that the people who died as a result of heat-related causes during the extreme heat event in June 2021 were primarily elderly persons with one or more chronic diseases that potentially could have

impacted their mobility and cognition. More than half of them lived alone and nearly three quarters (74%) lived within the Fraser and Vancouver Coastal Health authorities. Additionally, many of them were living in areas of higher material and social deprivation.

> One of the most impactful interventions during a heat event deal is "ensuring people have a way of staying cool either inside their residence or elsewhere."
>
> - *Report to the Chief Coroner (June 2022)*

## 2. B.C. MEDICAL EQUIPMENT PROGRAMS

Another factor that contributed to the increased heat-related mortality rate during the 2021 heat dome was high sustained indoor air temperatures. In many cases, people died not because it was too hot outside, but because it was too hot inside, with little overnight cooling. According to BC Hydro[4], the percentage of private residences with air conditioning within FHA and VCHA (where the majority of the heat-related deaths occurred) is far below the national average due to those areas historically experiencing cooler summers compared to other parts of Canada.

The Ministry of Health reached out to several organizations to identify opportunities to support the issuing of cooling devices in case of extreme heat. While no provincial programs currently provide air conditioners to B.C. residents, some programs do loan other medically necessary equipment free of charge or provide funding for certain devices.

### The Medical Equipment Provision Program (Provincial Health Services Authority)

The Medical Equipment Provision Program is a PHSA-managed program that allows patients with a medical practitioner referral to borrow medical equipment such as bathing equipment, walking aides, wheelchairs, patient lifts and mattresses from a third-party vendor. Criteria for access to this program for patients requires the patient to confirm there are no other identified funding sources for access to equipment (i.e., Extended Health Benefits, Veteran's Affairs, ICBC, WSBC, Ministry, etc.)

Loaning this equipment to patients allows them to return home from hospital sooner or stay at home longer without the need for additional supports from the health care system (i.e., assisted living, residential care, home support, supportive housing and hospital

stays). It also is provided to patients who are receiving home health care to allow them to remain and age at home.

To support this program, the PHSA negotiates a province-wide contract for the purchase, distribution and maintenance of the equipment. Air conditioners are currently not offered through this program.

## Fraser Health Authority (FHA) Cooling Device Pilot (2022)

Among the findings in the Report to the Chief Coroner was that 73% of the heat-related deaths that occurred during the 2021 heat dome were within the FHA (50%) and VCHA (23%). In Summer 2022, FHA created a small 10 unit pilot program to provide air conditioning devices to vulnerable clients over a three-month period during the summer. To select recipients, FHA developed a screening tool that prioritized health authority clients who were at highest risk of heat intolerance.

As part of the pilot program, a contract was negotiated by the PHSA to support the lease of air conditioners through a qualified vendor in the FHA. The vendor was responsible for the delivery, installation, support, storage and maintenance of the air conditioners. FHA is planning to carry out a similar program for Summer 2023. As part of the 2023 program, FHA will work with community partners to identify vulnerable patients that may be at risk in the case of another extreme heat event. This pilot program will be evaluated for effectiveness and ability to scale.

## Health Supplement - Medical Equipment and Devices (Ministry of Social Development and Poverty Reduction)

SDPR's Health Supplements program provides a range of medical equipment and devices to certain SDPR clients who meet specific eligibility criteria and have no other resources available to purchase or obtain the medical equipment or device. Only seniors who have a Persons with Disabilities (PWD) designation and are in receipt of disability assistance or Medical Services Only (MSO) are eligible for medical equipment or devices. This constitutes a very small percentage of seniors in B.C.

SDPR's regulations only allow specific medical equipment and devices to be provided to eligible SDPR clients who submit the appropriate medical documentation. The medical equipment or device provided is typically the least expensive appropriate medical equipment or device to meet the medical needs of the individual. The equipment, which must be prescribed by a medical practitioner or a nurse practitioner, includes items such as breathing devices, hearing instruments, orthotic items, canes, walkers, scooters,

hospital beds and lift devices.

Air conditioners are not an approved medical equipment or device. The addition of air conditioners as medical equipment for SDPR clients would require regulatory changes and an administrative and procurement process prior to implementation.

However, SDPR can provide crisis supplements to eligible clients in times of need to support SDPR clients in purchasing items to keep them safe and ensure additional needs are met.

## 3. CANADIAN MEDICAL EQUIPMENT PROGRAMS (OUTSIDE B.C.)

A jurisdictional review of Canada revealed that most provinces and territories have developed public messaging and information sheets on how to identify heat illness, along with tips on what actions people can take to reduce their health risks during an extreme heat event. Most are also at various stages of developing policies and practice options for extreme heat events.

Many provinces are also working to ensure long-term care and assisted living facilities are equipped to maintain reasonable temperatures within specified guidelines during extreme heat events. Additionally, new builds and upgrades to older buildings are increasingly being required to meet safe and comfortable temperature-related requirements to ensure the safety of residents and staff in the case of an extreme heat event.

In terms of programs, most provinces and territories have short- and long-term medical equipment rental programs similar to B.C.'s Medical Equipment Provision Program, and some have a program similar to SDPR's Health Supplements medical equipment and devices program. Ontario is the only province that has a program that includes discretionary funding for persons with disabilities to access air conditioners, which is allocated through municipalities. However, this program is limited to severe asthmatics.

# 4. UNITED STATES

The review included an assessment of programs available in some U.S. states.

## Oregon: State of Oregon Air Conditioner and Air Filter Deployment Program

In the State of Oregon in 2022, the Oregon Health Authority managed a $5-million Air Conditioner Deployment Program, which purchased and distributed air conditioner units, free of charge, to residents in specific priority populations, including adults 65 or older, homebound individuals and those with medical conditions exacerbated by high-heat events. Clients were identified through Medicaid, which is a government-sponsored health program that provides coverage for low-income individuals and families, as well as community-based organizations. In addition to age and income levels, the recipient criteria for the Air Conditioner and Air Filter Deployment Program was based on geographic location (areas prone to heat events), identification of disabilities or chronic disease.

Starting January 1, 2024, for-profit health care organizations that deliver services for Medicaid will be required to provide air conditioners during climate emergencies. If such an emergency is declared, additional funding will be activated to provide this service to those most at risk.

To date, more than 2,500 air conditioning units have been permanently distributed, with an additional 2,500 air conditioners expected to be permanently distributed by the end of Summer 2023.

## Washington State: Low-Income Home Energy Assistance Program

In October 2021, Washington State opened the Low-Income Home Energy Assistance Program to cooling support and began offering grants for mobile air conditioning units able to cool 300 sq. ft. spaces. The Program also offers a $500 hardship benefit to help cooling-assistance recipients pay for the electricity needed to power these air conditioners.[5] By July 2022, the Program had provided more than 1,300 air conditioners to Washington residents, with a majority going to King County households. (King County is home to Seattle, one of the least air-conditioned metro areas in the United States, with only 44% of homes air conditioned.[6]

According to Washington State's Department of Commerce website, residents that qualify for the Low-Income Home Energy Assistance Program may be eligible for an air

conditioner if they have not received a grant during the current Program year (October-September) and their household meets the income guidelines for the program, which income limits are set at 150% of the federal poverty level. The amount of the Low-Income Home Energy Assistance Program grant funding awarded to each household depends on factors such as household size, income and annual heating costs.

## New York City: Cooling Assistance Benefit

The City of New York offers a Cooling Assistance Benefit to help eligible households buy and install an air conditioner or fan. The $15 million in funding is made available through the federal Low Income Home Energy Assistance Program and administered through the state's Office of Temporary and Disability Assistance. The benefit covers the purchase of an air conditioner or fan (up to $800 for a window, portable air conditioner, or fan, or up to $1,000 for an existing AC wall sleeve unit), administrative costs, labour, program support, materials, removal of old units and minor repairs that are needed to safely install new units.

The program eligibility requirements include meeting the low-income criteria; having no air conditioner or a unit that is at least five years old; and having a household with a child under six, someone over 60, or someone with medical condition exacerbated by extreme heat (verified by a physician, physician assistant, or nurse practitioner). The benefits are being provided on a first come, first served basis to eligible applicants from May 1 to August 31, 2023.

New York City first started distributing free air conditioners to at-risk low-income seniors in Summer 2008. During the pandemic, New York City implemented a Get Cool NYC program, which involved spending $55 million on 74,000 air conditioner units for low-income seniors, including 22,000 for people in public housing. The temporary program was put in place in response to social distancing restrictions that limited the operation of cooling centers and led to more people self-isolating at home.

# 5. HOME COOLING

## Tax Incentives and Rebates for Cooling Devices (British Columbia)

Several provincial rebates were identified that support the purchase of heat pumps, which can be used to regulate and cool the temperature in homes. While the Report to the Chief Coroner noted that 34% of decedents lived in single dwelling homes, it did not specify how many of them were homeowners, making it difficult to estimate the efficacy of rebate programs in reducing future potential deaths related to extreme heat events.

Provincial rebate programs include:

- CleanBC Income Qualified Program: Provides up to $33,900 to eligible citizens for qualifying products, including heat pumps.
    - Income Qualified Heat Pump Rebate: Up to $9,500 is available for the purchase of ductless mini-split, ductless multi-split and central ducted air source heat pumps. Funding to income-qualified residents is provided by the Province of British Columbia, BC Hydro and FortisBC.

- Heat Pump Rebates: Multiple rebate opportunities are available depending on the type of heat pump purchased, with rebates ranging from $1,000 to $6,000. Funding is provided by the Province of British Columbia, BC Hydro and FortisBC.

- The CleanBC Better Homes and Home Renovation Rebate Program helps British Columbians find rebates for upgrades (e.g., insulation, windows, doors and more) that save energy and lower greenhouse gas emissions. The program includes rebates for existing buildings and rebates for new home building. The dwelling must be the resident's primary residence, they do not have to own the home. Additionally, a growing number of local governments in B.C. are offering top-up rebates to the CleanBC Better Homes and Home Renovation Rebate Program.

- From June 2 to July 28, 2023, BC Hydro is offering a $50 rebate on select energy efficient windows and portable room air conditioners sold through participating retailers (e.g., Costco, Best Buy and Home Depot) which will offer instant in-store discounts.

In general, however, the purchase and installation of heat pumps and air conditioners require a significant up-front investment that can be cost prohibitive for vulnerable populations, even after rebates. Additionally, there can be delays in getting heat pumps and air conditioners installed, with contractors experiencing backlogs in fulfilling requests.

## Tax Incentives and Rebates for Cooling Devices (Federal Programs)

Several federal tax incentives and rebates support the purchase of cooling devices and heat pumps, including:

- Income Tax Rebate for Cooling Devices: air conditioners are an eligible medical expense that can be claimed on tax returns if prescribed by a medical practitioner (typically for a person with a severe chronic ailment, disease, or disorder). The tax rebate is $1,000 or 50% of the amount paid for the air conditioner, whichever is less.

- Oil to Heat Pump Affordability Program: A grant of up to $10,000 is available to cover the costs of changing from oil heating to a heat pump. This program is available for homeowners only.

- The Canada Greener Homes Initiative can help Canadians make their homes more energy efficient and comfortable by providing financing and grants for retrofits recommended by an energy advisor. The Canada Greener Homes Loan provides loans from $5,000 to $40,000 with a repayment term of 10 years, interest-free.

# 6. OTHER CONSIDERATIONS: BC BUILDING CODE REQUIREMENTS

With the impacts of climate change, how infrastructure is designed and built must also change. Another priority action recommended in the Report to the Chief Coroner included the introduction of new requirements to the BC Building Code to limit risks associated with overheating in new buildings.

As the implementation of overheating provisions into the National Building Code (NBC) currently undergoes public review, the Province is introducing new requirements into the BC Building Code[7] to lessen the risks of overheating in new homes. The Province's proposed changes will establish a summer design temperature that a living space in a dwelling unit must be capable of maintaining through the addition of mechanical cooling or, where achievable, by passive design measures.

The key proposed change would require that "cooling facilities shall be capable of maintaining an indoor air temperature of not more than 26°C in at least one living space in each dwelling unit." In the Report to the Chief Coroner, the BC Centre for Disease Control noted that people were most in danger when indoor temperatures remained above 26 degrees throughout the heat event. By considering an upper design temperature at the design stage, homeowners and builders will be able to maximize energy and equipment efficiency and save on costly future retrofits. In addition, occupants

can realize the health and safety benefits of having control of indoor temperature.

The Province anticipates adopting the updated BC Building Code later this year and bringing it into force in December 2023. Mandatory requirements for new buildings will help address the effects of extreme heat events on building occupants to improve health and public safety.

## 7. SUMMARY

Programs to address cooling and air conditioners will need to target those most at risk during extreme heat events.

The majority of those who died during the heat dome:

- were elderly (70 years of age or older, and 90% were over age 60);
- lived with chronic disease that potentially impacted their mobility and cognition;
- lived alone; and
- lived in areas of higher material and social deprivation.

In Canada, only Ontario has a program that provides air conditioners as medical equipment, but this program is not designed to support cooling due to extreme heat and is limited to people with severe asthmatics. In the Pacific Northwest, Oregon ($5 million) and Washington state (using federal funding) have introduced air conditioning programs in response to the heat dome.

Key considerations for the delivery of a new air conditioning program for private residences include:

- Targeting the most vulnerable and at risk populations while building out program capacity and reach (likely contractor provided services);
- Effective distribution of air conditioning including installation and maintenance;
- Electrical capacity of the home; and
- Landlord or strata regulations.

Although most people died in private residences, there is still a need to support cooling and air conditioning in social housing and long-term care facilities given the demographic profile of people living in those facilities.

As a result, government will need to take a comprehensive approach and invest in multiple initiatives to support cooling in people's homes, whether it is private residences,

social housing, or long-term care facilities.

Government will also need to continue actioning climate adaptation initiatives and changes to building code requirements to strengthen the built environment's resilience to climate change and extreme weather events, and make homes and buildings safer.

## UPDATE:

On June 27, 2023, government announced $10 million to support BC Hydro's Energy Conservation Assistance Program (ECAP) and offer air conditioners for people who are medically vulnerable and have low incomes.

BC Hydro has also partnered with BC Housing, Vancouver Coastal Heath Authority (VCH) and other organizations for the following:

- $1.7 million to procure 1,500 air conditioning units for social housing;
- $150,000 to VCH for the purchase, delivery, and installation of larger portable air conditioning units to community organizations such as seniors' centres and neighbourhood centres so they can create cooling sites during heat events; and
- $150,000 to Praxis Spinal Cord Institute and Technology for Living to provide access to portable cooling devices for people with spinal cord injuries and other disabilities.

The announcement also outlined other actions taken by government including:

- investing $369 million to the Community Emergency Preparedness Fund, which supports communities in mitigating and preparing for disasters and climate-related emergencies;
- providing more than $52 million to support long-term care facilities to install or upgrade existing heating, ventilation, and air-conditioning (HVAC) systems;
- distributing an emergency inventory of cooling and clean air items to non-profit operators, through BC Housing; and
- connecting home and community care providers to people who are most at risk, such as through chronic disease registries.

[1] Extreme Heat and Human Mortality, A Review of Heat-Related Deaths in B.C. in Summer 2021
[2] Vulnerable populations: "The elderly, persons with chronic health conditions, persons living alone, those with no access to cooling, and those in particular geographic areas were more impacted by the heat." (Extreme Heat and Human Mortality, A Review of Heat-Related Deaths in B.C. in Summer 2021, Page 26)
[3] See endnote 2.
[4] British Columbians are more dependent on A/C than ever before, setting a summer record (BC Hydro Info Bulletin, September 3, 2021)
[5] Weinberger, Hannah. "New WA program gives low-income renters access to A/C" Crosscut, 25 July 2022, https://crosscut.com/environment/2022/07/new-wa-program-gives-low-income-renters-access-ac.
[6] Balk, Gene. "Seattle is a lot more air-conditioned than it used to be." *The Seattle Times*, 25 June 2021, https://www.seattletimes.com/seattle-news/data/seattle-is-a-lot-more-air-conditioned-than-it-used-to-be/.
[7] BC Building Code 2023 Proposed change to reduce risk of overheating in dwelling units

## Appendix A:

# UPDATE: Response to the Recommendations and Priority Actions in the B.C. Coroners Report

**B.C. MINISTRY OF HEALTH**
**JUNE 28, 2023**

The Ministry of Health, in partnership with health authorities and other partners, have made significant investments and undertaken numerous initiatives to address the recommendations and priority actions identified in the Report to the Chief Coroner. These actions include:

***1.A.*** *By June 30, 2022, the Ministry of Health will be assigned as the lead ministry to coordinate the response to public health impacts from an extreme heat event and the Ministry of Public Safety and Solicitor General will assign Emergency Management BC [EMBC now known as Emergency Management Climate Resilience EMCR] as the lead agency to coordinate the provincial response to the non-health related impacts of extreme heat emergencies.*

In 2022, the BC Health Effect of Anomalous Temperatures (BC HEAT) Committee, chaired by the Ministry of Health and the BCCDC, was created and launched the BC Provincial Heat Alert and Response System: 2022 (BC HARS) to guide preparations for and responses to heat events.

***1.B.*** *By June 30, 2022, the Ministry of Health, health authorities and EMBC will adopt and implement the HARS pilot, developed by the BC Health Effects of Anomalous Temperatures (BC HEAT) Committee, province-wide.*

BC HARS was successfully rolled out across B.C. on June 9, 2022. BC HARS established a two-tier notification process for significant heat events in the province and provides guidance and support for heat planning from a public health perspective for a wide variety of partners, including Ministries, community organizations, local authorities, First Nations, public health partners and health authorities. The recommended actions outlined in the BC HARS are illustrative, and with the wide range of potential audiences, not all recommendations are applicable in all settings. Organizations are encouraged to consider these recommendations when developing or reviewing their respective heat preparedness plans.

Upon notification of a significant heat event, each ministry, health authority, organization, facility, or local authority is encouraged to respond to a heat event in ways that are most suitable for their local situation and as guided by their individual heat plans and processes. These may include such actions as:

- Issuing mass communications about extreme heat emergencies, including specific warnings for older adults with comorbidities at greater risk of heat-related illness;
- Reaching out to and monitoring vulnerable populations, including those that are socially isolated, the homeless, the elderly, outdoor workers and mental health clients;

- Monitoring heat-related morbidity/mortality;
- Outreach assistance may include the following strategies:
    - Providing access to cooling shelters/centres and drinking water;
    - Extending hours of air-conditioned facilities where people are likely to seek heat relief (e.g., libraries, shopping malls);
    - Providing portable water stations and/or distributing drinking water in strategic locations for susceptible populations;
    - Reducing the cost of access to cooling spaces such as community swimming pools or making them free to access during a significant heat event;
    - Providing transportation support to and from cooling facilities (working with community groups where possible);
    - Checking on citizens who have pre-registered to be alerted during emergencies; and
    - Providing advice to the public through healthlink.ca or directing them to call 811.

Wellness check-ins are recommended as part of BC HARS. Health authorities have been developing a number of related initiatives, including:

- Home health and community client prioritization protocols and check-ins with at-risk clients and families through phone calls and in-person visits as needed;
- Development of resources to home health and community staff and clients about the signs and symptoms of heat exhaustion and how to respond;
- Development of protocols to ensure extra precautions are taken to limit cancellation of client visits due to staff shortages/illness, such as:
    - Redeploying staff to support wellness checks and phone calls;
    - Shortening visits to extend staff availability;
    - Increased use of overtime; and
    - If a visit must be cancelled, conducting a wellness call and reminding clients to stay hydrated and cool;
- Information will be provided on how to stay cool and where cooling centers are located in the community. Health authorities may arrange transportation, if needed.

During the Summer of 2022, the BC HARS process was utilized. The BC HEAT Committee monitored health impacts for the potential need to escalate to an extreme heat emergency and provided a forum for partner consultation and guidance. The BC HARS document was the primary source for the development of consistent actions and messaging province wide.

***1.C.*** *By June 30, 2022, the Ministry of Health will forward the HARS pilot to local governments for review and adoption of recommended actions as appropriate based on community needs and identified vulnerabilities, including actions specific to vulnerable populations (i.e., wellness checks, cooling centres [including mobile cooling centres], water distribution, greening areas, cooling parks).*

BC HARS was successfully rolled out across the province to local governments on June 9, 2022. As part of the Province's commitment to heat event preparedness, lessons learned from responding to heat events are incorporated into the BC HARS on an ongoing basis (See recommendation 1E for summary of lessons learned). These learnings are based on, continuous monitoring of best practices, internal after-action reviews from the BC HEAT Committee, as well as direct engagement with local authorities, First Nations and community partners.

***1.D.*** *By June 30, 2022, on the advice of the BC HEAT Coordinating Committee (Ministry of Health), EMBC will issue a Broadcast Intrusive Alert for an Extreme Heat Emergency.*

A process to issue a Broadcast Intrusive Alert for an extreme heat emergency was developed as part of the BC HARS released in June 2022. Broadcast Intrusive Alerts for extreme heat emergencies are public broadcasts to those who may be impacted in a specific area. The alert provides advance notification to residents to prepare for a dangerous heat event.

***1.E.*** *By summer 2023 the Ministry of Health will coordinate a gap analysis/evaluation of the HARS pilot.*

An After-Action Report that includes an evaluation of the BC HARS by the Ministry of Health was finalized on April 1, 2023. The findings from this report, coupled with the results of the engagement detailed in priority action recommendation 2.E., were incorporated into an update of the BC HARS and used to develop supplemental materials. This includes the creation of additional protocols to facilitate preparedness for local authorities for significant heat events; communication materials health authorities can use during different stages of a heat response; the development of "quick start guides" or checklists that are simple and easy to use; and the clarification of government roles and responsibilities during a significant heat event.

To support communication messaging, the BC HEAT Committee, in collaboration with communications experts from across the health system, developed standardized communication material to be used by health system agencies and external partners for

notifying and preparing community organizations and the public in advance of, and during, different stages of heat warnings and extreme heat emergencies.

***2.A.*** *By June 30, 2022, provincial health authorities will ensure that Home and Community Care Services identify and prioritize clients who: are listed on chronic disease registries (schizophrenia, substance use disorder, epilepsy, chronic obstructive pulmonary disease, depression, asthma, mood and anxiety disorders, and diabetes registries); persons with limited mobility; persons with cognitive impairment; and/or live alone, for home visits and contact during an extreme heat emergency.*

Health authorities have mechanisms in place to identify clients connected to home and community care services who are assessed as particularly vulnerable to heat events or other climate emergencies. Risk categorizations consider factors such as health status, whether the client lives alone, whether the client can move independently or have the ability to access a cool room.

To support advance preparedness, health authorities are helping clients and families prepare in case of an extreme heat event by providing them with practical information and resources, identifying cool areas in the home, or arranging to relocate clients to temporary alternate locations. In some instances, health authorities will rent or purchase fans and cooling equipment for high-risk clients in need.

The United Way of B.C. has received $1 million through the Ministry of Health to distribute emergency preparedness response grants to seniors' service organizations. Examples include: the purchase and distribution of emergency kits, grab and go bags and cooling scarves; the loan of fans and air conditioners; and the development (often in collaboration with community agencies, local government, health authorities, and emergency responders) of climate emergency plans focused on notification, check-ins, and transportation.

In the case of a significant heat event, health authorities will provide information and resources to home health care staff and clients about the signs and symptoms of heat exhaustion, techniques to manage the heat, and the locations of cooling centers in the community.

As mentioned under the previous recommendation, upon notification of a significant heat event, home health care client prioritization protocols will be activated and check-ins with at-risk clients and families will be arranged through phone calls and in-person visits as needed. This includes taking extra precautions to limit the cancellation of client visits. (See response to 1B)

***2.C.*** *By summer 2022, the Ministry of Health, in conjunction with the health authorities and the First Nations Health Authority, will develop and distribute public messaging on self-care and caring for vulnerable persons during a heat event, that is culturally appropriate and available in multiple languages.*

In May 2022, the Ministry of Health developed a public messaging toolkit that was distributed across government ministries, health authorities and health-promoting organizations in B.C. The toolkit provides guidance on individual well-being during heat events. Its messaging is designed to help people in BC learn protective and preventive behaviors to help them stay safe during heat events by reducing modifiable risks.

In addition, EMCR in consultation with Ministry of Health, BCCDC and the BC HEAT Committee published an Extreme Heat Preparedness Guide and Extreme Heat social media package to help communities and people prepare their residences for extreme heat and learn how to stay safe when temperatures rise. The guide is available in French, Punjabi, traditional Chinese and simplified Chinese.

***2.D.*** *By December 1, 2022, the Ministry of Health, in collaboration with the Ministry of Social Development and Poverty Reduction, and in consultation with vulnerable populations, will conduct a review into issuing cooling devices as medical equipment accessible to persons most at risk of dying during an extreme heat event, and make public the findings of the review.*

The Ministry of Health led the review into issuing cooling devices as medical equipment in collaboration with the Ministry of Social Development and Poverty Reduction. The review has now been completed.

This work included: an analysis of the populations most at risk of dying in an extreme heat event (using the demographics provided in the Chief Coroner Report); a review of B.C. programs that currently provide medical equipment; a review of Canadian programs outside B.C. that distribute cooling devices to vulnerable populations; a review of select programs in the United States (Oregon, Washington State and New York) that distribute cooling devices to vulnerable populations; and a review of tax incentives and rebates available in Canada for cooling devices.

Government is taking a comprehensive approach and investing in multiple initiatives to support cooling in people's homes, whether private residences, social housing, or long-term care facilities.

***2.E.*** *By June 30, 2023, the Ministry of Health, provincial health authorities and the First Nations Health Authority will engage and consult with vulnerable populations (elderly, persons with chronic health conditions including mental illness, persons with mobility challenges, and persons living in neighbourhoods and geographic areas most likely to be impacted by an extreme heat event) and local government emergency planners regarding HARS planning, review and evaluation at provincial, regional and local levels.*

The BC HEAT Committee and the Ministry of Health, supported by funding from EMCR, undertook a targeted engagement process to gather feedback and information from Indigenous governance organizations, communities, community organizations, and non-government organizations that work with heat-vulnerable populations, in order to identify potential improvements to the BC HARS. Further direct engagement with impacted populations and communities will take place in fall 2023 alongside the after-action review process for the 2023 heat season.

In September 2022, the Province announced that 36 First Nations and local governments across B.C. would receive their share of nearly $1.9 million for mapping, assessments, and planning through the $369 million Community Emergency Preparedness Fund.

***3.A.*** *By summer 2022, EMBC, in partnership with the Ministry of Health, provincial health authorities and the First Nations Health Authority, will distribute the Prepared BC Extreme Heat Preparedness Guide to British Columbians and provide public service announcements on extreme heat preparedness in multiple languages and formats.*

The development of this guide was led by EMCR in collaboration with the Ministry of Health, BCCDC and the BC HEAT Committee. First Nations Health Authority and regional health authorities were consulted in the development of the Prepared BC Extreme Heat Preparedness Guide. Please see further details previously noted under Recommendation 2C.