



CLIMATE, LIVED EXPERIENCE, AND RESILIENCE (the CLEAR project):

Listening to communities to enhance the public health response to extreme weather events for priority populations

VANCOUVER COASTAL HEALTH

DECEMBER 2025

Vancouver
CoastalHealth



ACKNOWLEDGEMENTS

Thank you to the community organizations, staff of Vancouver Coastal Health programs, and many community members who shared their time and expertise with us. Hearing from people with lived experience is vital to ensure that policies, plans, and services are effective and reach those who need them most. This report is part of our ongoing commitment to listen to, learn from, and serve our community, especially as we face the increasing impacts of climate change together.

This report was prepared by staff in the Healthy Environments and Climate Change team within Vancouver Coastal Health's public health program: Meghan Straight, Dr. Craig Brown, Dr. Brandon Yau, and Dr. Michael Schwandt. Community engagement sessions were conducted by Meghan Straight, Dr. Brandon Yau, Robyn Turnock, Elly Tseng, Jackson Liu, Patrick Chuang, and Cicely Yang. Report design and photography by Tyler Semler, Hanna Hansen, Laura Chow, and Meghan Straight.

RECOMMENDED CITATION

Vancouver Coastal Health Public Health. (2025). "Climate, Lived Experience and Resilience (the CLEAR project): Listening to communities to enhance the public health response to extreme weather events for priority populations." Vancouver, BC: Vancouver Coastal Health.

The background of the page is a photograph of a coastal landscape. In the foreground, there is a body of water with gentle ripples. In the middle ground, there are dark, forested hills or mountains. In the background, a range of jagged, snow-capped mountains stretches across the horizon under a clear blue sky.

TERRITORY ACKNOWLEDGEMENT

VCH carries out its public health and health care functions on the traditional and unceded territories of the Heiltsuk, Kitasoo-Xai'xais, Lil'wat, Musqueam, N'Quatqua, Nuxalk, Samahquam, shíshálh, Skatin, Squamish, Tla'amin, Tsleil-Waututh, Wuikinuxv, and Xa'xtsa Peoples.



EXECUTIVE SUMMARY

The 2021 Pacific Northwest heat dome was an unprecedented extreme heat event in British Columbia, causing the deaths of over 619 residents of the province. Equity-deserving priority populations were over-represented in the burden of heat-related illness and death. Many of the same populations are at higher risk of health impacts from other extreme weather events, and climate change will likely increase the frequency, intensity, and duration of these events in the future. Action must be taken to reduce the impact of extreme weather events on priority populations, and to support community resilience to climate change.

To listen to and learn from the lived experiences of priority populations in the Vancouver Coastal Health region, this project conducted nine community engagement sessions between December 2022 and May 2023. The goal of this engagement was to inform the regional health authority of the experiences of priority populations and aid in the development of practical steps to mitigate the health impacts of extreme weather events on these populations. Although this work is in response to the 2021 heat dome, participants were also asked about their experiences with two of the more common extreme weather events in the region, wildfire smoke and extreme cold.

The following themes were evident in the engagement work:

- 1. Extreme weather has life-altering impacts.** These events may affect people's ability to work, sleep, manage health conditions, access supplies, and can even be experienced as a daily battle to stay alive, with impacts lasting longer each year as climate change leads to more frequent and longer-lasting events.
- 2. Priority populations often rely on low-cost, familiar coping strategies,** such as using fans or staying home during extreme weather events. Options such as air conditioning or air filters were found to be inaccessible and some found other health guidance to be impractical, or not culturally or linguistically appropriate.
- 3. Transportation barriers hinder access to services for priority populations.** Lack of accessible transportation to warming and cooling centers, emergency services, and community support limit the effectiveness of services and contribute to isolation during climate-related events.
- 4. Policies, services, and communications need to be co-developed with priority populations.** Multiple environmental, social, and financial barriers can limit access to necessary adaptation supports. Participants also stressed that communications must include more in-person and multilingual formats, using trusted messengers, and not relying solely on online distribution. This highlights the need to adopt an intersectional approach and involve those with lived experience in developing solutions.

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INTRODUCTION

In June 2021, British Columbia and the surrounding region experienced an extreme heat event that brought record-high temperatures (widely referred to as the “heat dome”). Provincial emergency services, health authorities, local governments, First Nations, and community organizations responded to this extreme weather event to mitigate the impact of the heat on the population. However, the emergency health system was overwhelmed, a significant number of people suffered heat-related illness, and at least 619 people died due to the heat (BC Coroners Service, 2022).

Climate change is increasing the frequency, intensity, and duration of extreme weather across the globe. While climate change mitigation (i.e. greenhouse gas reductions) is critical in addressing the underlying causes of climate change, there is a clear need to improve our adaptation to the impacts of climate change we are witnessing in our communities. As a regional health authority, Vancouver Coastal Health (VCH) has a mandate to support climate mitigation and adaptation efforts, working alongside local government, researchers, community-based organizations, and community members. There is already a substantial body of work that can guide the public health response, including:

- ▶ **Extreme heat and human mortality: A review of heat-related deaths in BC in summer 2021:** This report summarized key findings from the BC Coroner’s investigation into the 2021 heat dome deaths. The populations identified as most at risk of heat-related illness and death included: **older adults, people with chronic health conditions, people with disabilities or mobility issues, and those living alone** (BC Coroners Service, 2022). Intersectional factors like economic deprivation, stigma, ableism, and social isolation were also found to exacerbate vulnerabilities to extreme heat. Recommendations from the report that drove this engagement project were calls to ensure that “vulnerable populations are identified and supported during extreme heat events.” Specifically, a priority action for health authorities was to “engage and consult with vulnerable populations and local government emergency planners regarding [heat alert response system] planning, review, and evaluation at provincial, regional, and local levels.”
- ▶ **Lived experience of extreme heat in BC: Final report to the Climate Action Secretariat:** BC’s Climate Action Secretariat engaged individuals and community service providers on their experience of the 2021 heat dome, identifying key barriers faced during heat events and also calling for solutions to be co-developed with community (Yumagulova et al., 2022).
- ▶ **Report of the VCH Chief Medical Health Officer 2023: Protecting population health in a climate emergency:** This report describes local health impacts of climate change, including health data, analysis, current and projected regional health impacts (VCH CMHO, 2023). It highlights work underway by local governments, Indigenous communities, community partners and VCH to mitigate climate change and adapt to protect priority populations.

In response to recommendations from the above reports, and recognizing the value of lived experience, our VCH Healthy Environments and Climate Change team, launched an engagement project to gather insights from equity-denied priority populations about their experiences during the heat dome. As these populations are also at risk from other climate-related events, the engagements also asked participants about other common events in the region: specifically extreme cold and wildfire smoke. The project engaged individuals with lived experience, as well as organizations that work to support these priority groups within the Vancouver Coastal Health region.

METHODS AND APPROACH

This community engagement project aimed to hear from people who had lived experience of the 2021 heat dome, and who identified as one of the priority populations described by the BC Coroner's Report. We used an intersectional approach to reflect the interaction between the various biomedical and social factors identified in that report. As a result, for example, we sought to include older adults who also experienced social or economic deprivation.

Recruitment

The project primarily focused on experiences of extreme heat, so we engaged participants based on risk factors related to that climate hazard. However, many of the priority populations for extreme heat overlap with those for extreme cold and wildfire smoke, and a secondary focus of the project was to learn from experiences of those events.

Organizations working closely with key priority populations were our first point of contact. Many of the community organizations we initially contacted were identified through stakeholder mapping in prior community engagement.

We then expanded our outreach, inviting people with lived experiences and pre-existing advisory panels composed of people with lived experiences related to the project aims.

Engagement session design

We offered a variety of engagement formats to participants in order to decrease the barriers to engagement. This included: an online survey tool, in-person group facilitation sessions, virtual group facilitation sessions, and one-on-one interviews. Engagement sessions were held from December 2022 – May 2023.

Existing literature was used to develop the interview guide for the engagement sessions, and the online survey. For online or in-person sessions, our facilitators utilized a semi-structured approach to acknowledge and respect the expertise of people with lived experiences by being flexible during the interview process.

Our team sought to embody best practices for engagement. For example, the project variously provided honoraria, supports for people to participate (e.g. interpreter, bus passes), and a variety of methods to provide feedback (e.g. in-person, online, individuals, groups, verbal or written).

A summary of the engagement sessions is described in Table 1. Participants included people who identified as older adults, having chronic health conditions, having a disability, and/or experiencing homelessness or unstable housing.



Table 1: Summary of engagement sessions

Engagement type	Number of participants
Online Survey	2
Nine Group Engagements (in-person and virtual)	95*
Pre-Engagement Participant Survey (optional)	66

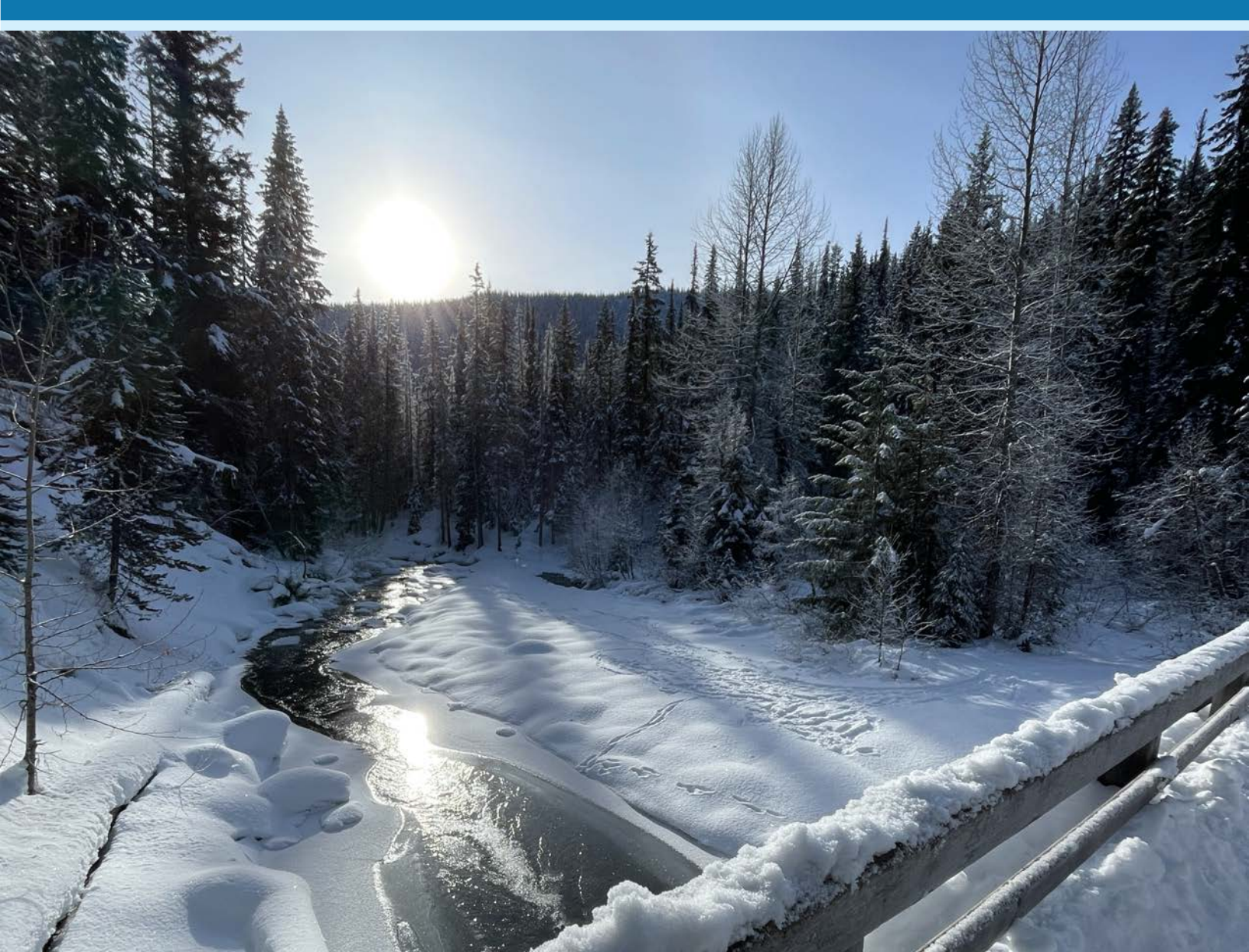
**This includes ten volunteers/staff that contributed to the discussions*

Table 2: Populations engaged

Populations participants identified as*	Number of participants
Older adult	51
Person with a chronic health condition	31
Non-English speakers engaged in their preferred language	32
Person with disabilities	8
Person experiencing homelessness or unstable housing	2
Other	2
Prefer not to answer	5
Staff or volunteer at a community organization	10

**Participants could identify as multiple populations, for example older adult and a person with disabilities*





Limitations

There are several limitations associated with this project and its findings. These include:

- ▶ Despite being open to **rural communities**, all participants were from urban areas. Since rural experiences may differ, results cannot be generalized to both settings.
- ▶ **Isolated individuals** not connected to community organizations are harder to engage, including those lacking technology access. Efforts to recruit them via library remote book programs and the VCH engagement website yielded only two in-person participants and two written responses. This low turnout risks an incomplete understanding of extreme weather impacts across populations.
- ▶ Language barriers can create significant obstacles in gathering detailed, nuanced insights from **non-English speakers**. While interpreters were used in some sessions, the lack of a multilingual facilitator likely led to missed key insights, reducing data accuracy and inclusivity.
- ▶ During the planning stage of the project, we heard of parallel engagement planned with **First Nations** communities in British Columbia. To reduce duplication, we did not specifically recruit First Nations communities, although one participant self-identified as Indigenous.
- ▶ Due to a low number of participants who identified as having experienced homelessness, generalization of findings specific to this key population may be limited. Further engagement will be important.

WHAT WE HEARD

HEALTH IMPACTS

Key themes:

- ▶ **Cooling is a life-saving measure:** For priority populations, heat is much more than an inconvenience. Without air conditioning in the home, efforts to avoid impacts of heat become very challenging. This struggle can feel isolating, as it largely occurs at home out of the public eye.
- ▶ **Heat can have wide ranging health impacts:** Heat can affect daily functioning, including disrupted sleep, decreased physical activity, heightened anxiety, and exacerbation of pre-existing health conditions (e.g. more frequent asthma attacks). These impacts may go unnoticed, as people may stay home or experience symptoms that are not immediately obvious.

Participants described various ways that heat events affect their health. They also recognized the role of climate change and were aware that they may experience these impacts more frequently and for longer periods in future.

Many reported **poor sleep** leading to fatigue and reduced productivity, while others **avoided regular activities** like walks or gym visits due to the heat. Some older adults and those with chronic conditions had **visited hospitals** for heat-related illnesses. **Isolation and anxiety** were common feelings, with participants without air conditioning reporting their days were consumed with finding ways to stay cool.

One older adult shared, *“I had to change how I live my life,”* spending all day adjusting the windows to create a cross breeze. A person with a chronic health condition said that just five seconds of high heat can trigger an asthma attack, so even walking from their home to the car could be a risk. Some participants sought relief in cool spaces like malls or visiting family homes but had to return to their dangerously hot homes overnight. A participant with chronic health conditions recounted the heat dome, saying, *“I started to realize I would need to do everything I could to keep from getting too hot indoors. At that point it started to feel less like a normal heat wave and more like a natural disaster.”*

“During the heat dome maybe six times a day it triggered my asthma. For several nights I worry myself, or my partner worries that I would die of an asthma attack during my sleep. ...That kind of fear and panic mode. I just wish we could learn from the health personnel, the doctor, what other things we can do and how we can prepare ourselves, what we can do to help ourselves.”

(Person with severe asthma who does not have air conditioning at home)

“[During the heat] your whole life is just moving around, trying to do things to keep you alive.”

(Older adult)



COPING STRATEGIES

Key themes:

- ▶ **Accessible cooling needed:** Coping strategies that were lower cost, easier to access, and allowed participants to stay at home were the most common (e.g. using fans, cooling off with water, covering windows).
- ▶ **Social connection benefits:** Participants with stronger social connections were better able to adapt to the heat because they had support with transportation, gathering or setting up supplies, and finding a cooler space.
- ▶ **Health system supports:** Health system supports noted during heat events were pre-existing connections to home care, home support or an adult day program, calling the HealthLink BC 8-1-1 hotline, or accessing emergency services (ambulance/ER).
- ▶ **Perceptions of heat risk among diverse communities:** Participants who had moved to Canada from hotter countries felt that they had better knowledge of extreme heat events, and their bodies were more acclimatized to hot conditions. Although, it should be noted that acclimatization to local conditions occurs within weeks of moving to a newer climate, so people from warmer countries are still vulnerable to heat.

Cooling the body

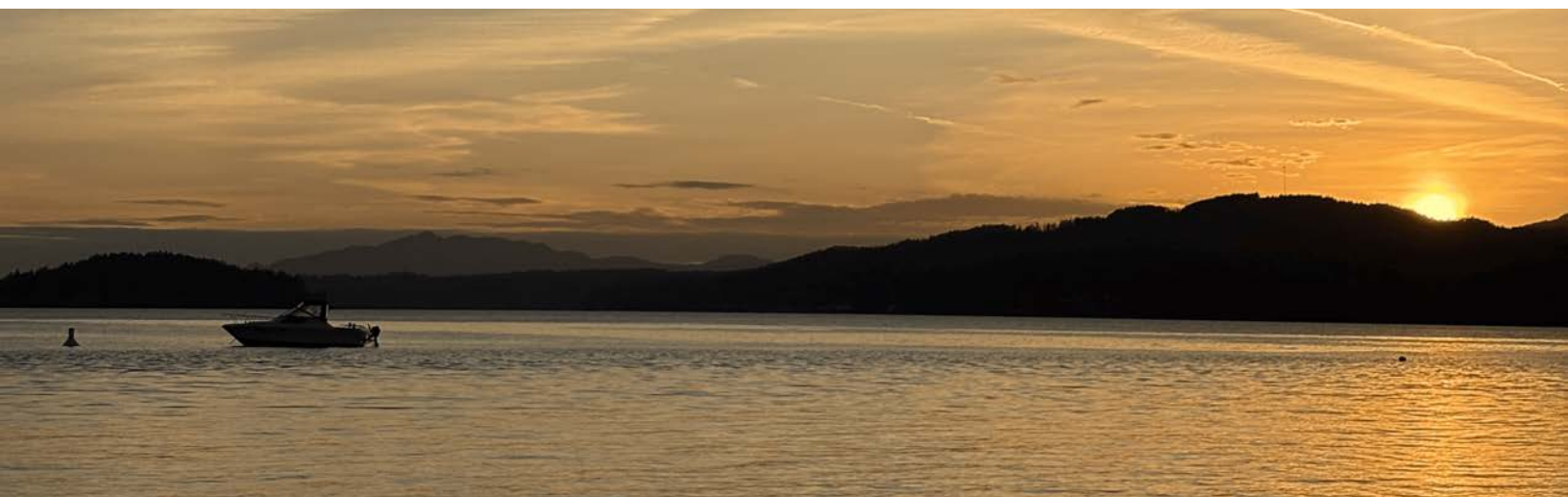
Participants shared ways that they try to stay cool, including drinking water, wearing lightweight clothing, using cool foot baths, damp towels, ice packs, or taking cool showers. Others conserved their energy by reducing activities such as cleaning, cooking, or exercise. Some with experience living in hotter climates felt better prepared for extreme heat events in BC. Cooling methods were sometimes chosen based on evidence or recommendations, but options were often limited by affordability or access.

"I avoided physical activity and didn't do any work at all, just devoted all of my time to staying cool."

(Person with a chronic health condition)

Cooling the home

The most common home cooling methods were fans (e.g. window fans, portable fans, swamp coolers), opening windows to create a cross breeze, and using window covers like blackout blinds, cardboard, or tin foil. Access to air conditioning was limited, often due to affordability, and one participant used a heat pump that was bought with a government rebate. Many older adults and some people with disabilities reported staying home during extreme heat events, often likening them to other extreme weather events like snowstorms, where family or media advise them to stay home.





Cooling spaces outside the home

A few participants reported going to nearby cooling centres, in libraries or adult day centres. Others reported spending time in cool community spaces with air conditioning or shaded outdoor spaces, such as coffee shops, grocery stores, pubs, malls, swimming pools, or their own garden. Participants who accessed cooling centres used HandyDART public transit for people with disabilities, or lived close enough to walk. Some older adults went to cooling centres for the social aspect, not specifically for cooling. But even when cooling centres or spaces were available, most participants preferred to stay at home instead or continue their regular activities if they had transportation options that were feasible in the heat (e.g. owning an air-conditioned car, HandyDART pass, car rides from family, or living a five-minute walk away).

Food practices

Many participants avoided cooking during extreme heat events to reduce home heat, opting for morning meal preparation, microwave meals, grocery delivery, or frozen meals from seniors' centres. Some relied on family, friends, or neighbours for shopping.

Transportation

Having transportation options enabled access to other coping strategies participants used during extreme heat events. For example, an older adult and a person with chronic health conditions both noted they were only able to get groceries because they owned a car with air conditioning. Others relied on HandyDART to get to air-conditioned seniors centres, or their children to drive them to destinations during extreme heat events.

Support systems

Some participants had neighbours call or visit to check on them, and one older adult had a neighbour loan them an air conditioning unit. Family members also provided support, including purchasing air conditioners or fans, dropping off groceries, rides to cooling centres or invitations to stay in their cooler homes. Community organizations provided pre-season education, supplies for extreme heat events (e.g. cool kits), frozen meals, or check-in calls. One older adult stayed at a hotel with air-conditioning after receiving a coupon in the mail from the hotel. A group of older adults moved their regular walks to the morning during the extreme heat event so they could stay socially connected at a cooler time of day, and one participant with disabilities helped a neighbour by calling 9-1-1 for severe heat-related illness. Health system support included older adults receiving check-ins from home health or support workers, people with chronic health conditions receiving guidance from specialist physicians, and participants accessing emergency health services themselves or to support a friend.

BARRIERS

Key themes:

- ▶ **Compounding barriers:** Participants faced multiple and intersecting financial, social, and environmental challenges, such as transportation costs, social isolation, and poorly equipped housing, all of which increased heat-related risks. Parallel crises such as housing shortages and multi-hazard extreme weather events further compounded vulnerabilities.
- ▶ **Health and environmental impacts:** Health conditions and disabilities reduced coping actions to stay cool, while environmental factors like lack of air conditioning or other cooling features and real or perceived electrical system strain increased risks. Heat events also impacted mental health, leaving participants feeling isolated and anxious.
- ▶ **Barriers to cool housing and cool spaces:** Fears of eviction, as well as policies in rental and supportive housing, restricted tenants' cooling options. Cooling centers were inaccessible to many, and limited acceptability and awareness of sites also deterred use.
- ▶ **Financial and transportation challenges:** The cost of air conditioning made staying cool at home difficult, especially for those on fixed incomes. Transportation challenges further isolated participants, limiting access to cooling centers, health services, and community support.

Intersecting barriers and crises

Participants often faced **multiple and compounding barriers** to staying healthy during an extreme heat event. People at high risk from climate events may experience financial barriers (e.g. cost of transportation), social barriers (e.g. stigma, ableism, social isolation), and environmental barriers (e.g. living in a building without air conditioning) that increase their exposure to high temperatures and reduce their access to cooling supports.

"Having an air conditioner is like eyeglasses or a hearing aid - it is essential."

(Older adult)

There are also **parallel crises** that can impact actions people can take and supports they can access, such as the housing crisis, toxic drug crisis, the loneliness epidemic, and the climate crisis. Participants shared how fears of eviction lead to them not asking for cooling supports in their rental units. With the increase in other extreme weather events, such as wildfire smoke, extreme cold, flooding, and drought, it is also likely that priority populations could be facing **multiple hazards** at the same time. For example, we heard from participants whose severe asthma is triggered by both extreme heat and wildfire smoke.



Health challenges

Health conditions can increase heat-related risks and limit access to cooling. Due to mobility challenges, some older adults couldn't reach cooler basements, install window coverings, or use cooling tools like spray bottles. A participant with a chronic health condition said, *"With wildfire smoke and smog increasing, I now have to keep windows closed in the summer to avoid triggering asthma attacks."* They can no longer use a window fan but feel fortunate to afford an air conditioner. Volunteers noticed some older adults avoided drinking water (which could increase their risk for heat-related illness), because repeatedly travelling to the toilet was difficult and could lead to a fall. Another participant described having a friend with dementia who relies on family to let them know when there is an extreme heat event and to check on them, and noted worrying about people with dementia who don't have family or health support.

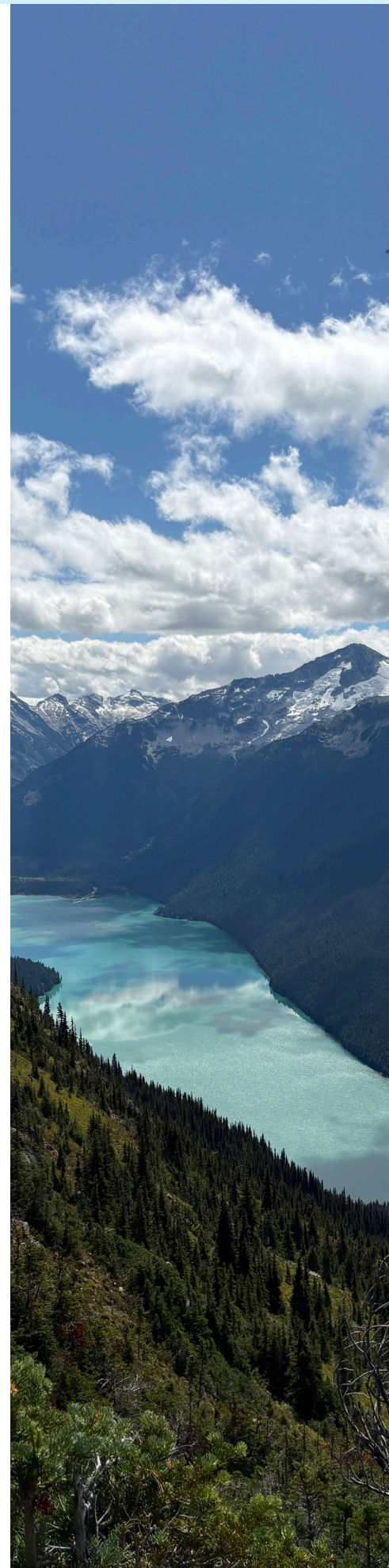
Challenges like feeling overwhelmed and isolated can also make it difficult for people to make decisions and take action. One participant with chronic health conditions and no air conditioning said, *"I was very afraid during the heatwave this year, although it was not nearly the same [as the heat dome] and found it difficult to focus on anything else because I was worrying about what I would do if it got hotter or if I couldn't stay in my home."* Staff from a seniors' organization observed that older adults often stay home during extreme heat events because they feel total helplessness, are not prepared, and do not know what to do.

Environmental barriers

Environmental factors, like building design, impacted participants' ability to stay cool during heat events. One participant shared that their building is the tallest in the neighbourhood so there is no shade from trees or nearby buildings, causing some of the units to be very hot. An older adult noted that due to the way their condo is designed it is unbearably hot in summer and doesn't require heat in winter. Others reported challenges with older buildings, where they either experienced or believed there could be issues with the building's electrical capacity if air conditioning were used during heat events. This led them to believe fans were the only option. Another participant shared that their rental unit does not have window screens, so rodents and increased dust entered when they kept the windows open to cool off. On the other hand, participants whose homes had features like double-pane windows, rooms facing north or east, shading from trees, or units closer to the ground described spending less time trying to cool their home.

Building owners and operators

Participants in rental and social housing described barriers such as restricted access to the only air-conditioned room in the building (if present), policies against tenants unlocking certain windows, bans on window covers or replacing the thin drapes in the unit, and disallowing a cooling space in the lobby, despite approval from their local fire department. Older adults feared eviction if they even asked about installing cooling equipment like window covers or air conditioning. A participant living with disabilities noted that in subsidized housing, *"you take what you get or you're back into market housing."* Many participants worried that asking for support from building managers, upgrades in the unit, or exceptions to building bylaws could lead to evictions. One participant with disabilities expressed concern that proposed bylaws to enforce a maximum indoor temperature in existing buildings would trigger mass renovation-related evictions and higher rents to recoup retrofit costs, emphasizing the need for cautious policy implementation.





Cooling centres/spaces

Participants highlighted barriers to cooling centres, including inaccessible bathrooms and seating for older adults, people with mobility devices, medical equipment, or disabilities. There were concerns of feeling embarrassed in an unfamiliar facility, requiring support from or in front of strangers, or struggling to travel to a site only to find there was no support. Others had no way to get to a cooling centre because in the heat it was no longer possible to walk to a bus stop, stand waiting for the bus, or ride a bus that may not have air conditioning. Some participants believed cooling centres wouldn't allow pets or were only for people experiencing homelessness. Some participants who had accessed cooling centres suggested longer hours should be implemented since their homes stayed hot until midnight, and noted the lack of food on-site was a challenge for those who could not afford to purchase and bring takeout. Some volunteers with community-based organizations shared that their clients from the Downtown Eastside were turned away from a community centre during the heat dome because staff said they did not have training to support them. A librarian believed low attendance at their cooling centre could be due to lack of awareness, and stated plans to use posters before future heat events as well as standing sidewalk signage to attract foot traffic.

Financial barriers

Without air conditioning at home, work, or built into transportation, preparing for and staying cool during an extreme heat event comes with additional costs. Many participants could not afford an air conditioning unit or the ongoing running costs, especially those on pensions or already struggling with the rising cost of living. Some had found that affordable air conditioning units were often sold out in local stores. A participant with disabilities noted faster food spoilage during extreme heat events, impacting low-income individuals relying on food programs and free day-old food distribution. Food costs are also a barrier to accessing cool spaces because low-income people may not be able to afford take-out food to eat at cooling centres, or purchases required to spend time in air-conditioned spaces like coffee shops. The cost of transportation also rose for those unable to use their regular mode, or needing to travel further to cooling supports. One participant with a chronic health condition resorted to a costly 30-minute ride-hailing trip to an estranged family member's air-conditioned home after experiencing heat-related illness in their own apartment.

"It was completely surreal when I finally got there, just a completely different world. For my sister the heat was unpleasant, but not life-threatening. It was bizarre going from a situation that felt like I was devoting all of my attention to surviving to it just being slightly uncomfortable background noise. I feel that the heat dome was traumatic for me."

(Person with a chronic health condition describing going to stay with family who have air conditioning)

"It was too hot to travel anywhere, so I just stayed put."

(Older adult)



Transportation

During extreme heat events, transportation can be challenging because regular modes may not be accessible, and people may need to travel farther to cooling centres or to visit people with air conditioning. Many participants who regularly take the bus or walk found it was not possible in the heat, especially if they needed to travel further than normal for support. For example, one older adult shared that they avoided walking to the grocery store during extreme heat events due to the lack of benches for breaks. Some participants relied on family, neighbours, or grocery deliveries as an alternative, but many felt the only option was to stay at home and wait out the extreme heat event.

Transportation options also impacted healthcare access. For example, one participant with a chronic health condition experienced heat-related illness during the 2021 heat dome, and described that HealthLink BC recommended they go to an emergency room. However, this participant declined to attend the hospital because they heard ambulance and hospital wait times were long, they had no other transportation option, and worried how they would go home from the hospital in the heat. Support from community organizations can also be limited due to transportation. One organizational representative said that older adults rely on frozen meals picked up from the organization, but that many cannot travel in the heat and the organization has no way to deliver meals. Another organization reporting having a bus that could transport people to cooling centres, but lacking drivers or funding to operate it.

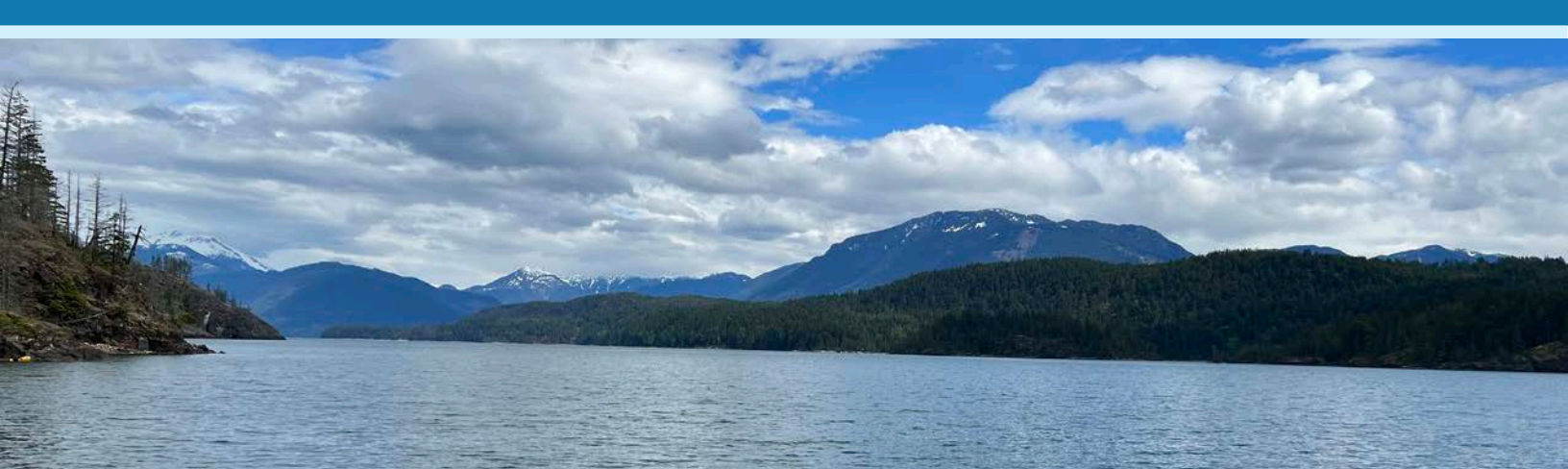
To better understand transportation needs, the optional survey asked participants how they regularly use and access transportation. The survey was completed by 66 participants.

Table 3: Transportation

Transportation options*	Transportation used most often by participants	Transportation not available to participant due to accessibility, cost, or other reason
Public transit	46	4
Walking	45	1
Friend, family, or caregiver drives them **	21	4
Driving themselves **	15	18
Bicycle	4	11
HandyDart service **	3	6
Taxi, Uber, Lyft, or other care-hire **	3	23
Wheelchair or mobility device	1	7
Other (not applicable)		4
Other (open ended response)		Participant shared: "While in Toronto, I got a free pass to the support person. Here in Vancouver, I am not aware of this help."
No answer		31

* Participants were asked to select up to three main modes of transportation for each question.

** These modes of transportation are typically more heat-resistant than those listed above.



COMMUNICATIONS

Key themes:

- ▶ **Barriers to accessibility:** Many participants found heat-related information to be inconsistent, inaccessible, too detailed, and impractical, especially for groups like low-income older adults and non-English speakers. Cultural differences further affected how advice was received and acted upon.
- ▶ **Preferred communication methods:** Older adults relied on traditional media, community networks, and in-person connections, while younger participants used online resources. Low-tech approaches like flyers and workshops were useful but faced distribution challenges.
- ▶ **Suggestions for improvement:** Participants proposed tailored solutions such as multilingual presentations, senior-specific news segments, and checklists to help individuals assess their heat risk. All groups stressed the importance of in-person communication, using trusted messengers, and not relying solely on online distribution.

Accessibility

Both participants and volunteers were aware of recent extreme heat events but said the available information is confusing and inaccessible. They struggled with overly detailed and overwhelming amounts of information, inconsistencies between sources and changes during events (e.g. last-minute cooling centre changes), and terminology they found unclear (such as “extreme heat” or “heat dome”). Some older adults relied on adult children for updates due to confusion, language barriers, or being unable to use a computer or read. A participant with disabilities noted that many low-income individuals may not receive online information because they can’t afford smart devices, internet plans, or electricity costs. Some participants felt the information wasn’t practical. One older adult said *“Most of what I received was so elitist and owner-occupier oriented, not for vulnerable, low-income older renters. Messages like plant trees and redo windows. Low-income renters can’t do that.”*

Cultural differences also affected heat messaging. Some Mandarin-speaking older adults rejected advice to drink or bath in cool water, viewing it as unhealthy in their culture. Some Farsi-speaking older adults had significantly more questions about general healthcare access and recommendations for heat, highlighting gaps in translated materials and health services, as Farsi is often excluded from translations in British Columbia. Several groups mentioned that it’s common in their culture to compare the heat and humidity in British Columbia to the conditions in their home countries, believing that their experience living in hotter climates made them more resilient to BC’s heat. This may impact whether they think it is necessary to take additional actions during heat events, like seeking cooler spaces or checking in with people.

“During the heat dome, I remember feeling angry, helpless, and scared because I felt that the information I could find wasn’t useful. For instance, advice suggesting to go somewhere with air conditioning, when in practice that was difficult to do, or advice suggesting to go to a cooling shelter when it was impractical to get there, they closed early, etc.”

(Person with chronic health condition)



Format

Participants were asked how they access information about heat, wildfire smoke, and extreme cold events. Most older adult participants sought information from television, radio, community groups, family, and friends. Some accessed information in their own language through community WeChat groups, organizations with volunteers who spoke their language, and news outlets in their language. Younger participants were more likely to use social media or health websites to get information. Some community organizations use low-tech formats, like flyers, sandwich boards outside their buildings, and hosting community workshops, but flagged that they can't access multi-unit housing to share handouts.

All groups stressed the importance of in-person communication and building trusted relationships. With the overwhelming amount of information available, participants valued relatable messengers who spoke their language, shared their culture, neighbourhood, or even their medical condition. Volunteers noted that service providers might be an older adult's only regular interaction and stressed the need for staff training to encourage these connections. Other participants shared that for their parents coming from Malaysian and Chinese backgrounds, there was high regard for peer testimonies and word of mouth.

Participants said they would appreciate emergency preparedness presentations in different languages and from experts, like medical specialists. One group suggested older adult specific guidance on the television or radio news, proposing a tailored title such as "*Seniors Moment*." Another idea shared was a checklist of risk factors so people could fill it out and determine their own heat risk level.

Sources of information

Participants were asked to identify specific communication channels they used for information on extreme heat, extreme cold, and wildfire smoke events.

- ▶ **Television stations:** TFC Filipino Channel, CTV, Global, CBC, TalentVision (Chinese TV)
- ▶ **Newspapers:** North Shore News, Western Canada News (Chinese news)
- ▶ **Radio:** AM 1040, Chinese radio channels 147 and 1320, FM 104.3
- ▶ **Websites:** webMD, MedScape, HealthLink BC, Red Cross
- ▶ **Social media:** twitter, red cross twitter (participant said it is less cluttered compared to local government social media)
- ▶ **Phonelines:** 811, 211
- ▶ **Apps:** WeChat news/ friend groups (Renfrew Chinese Seniors WeChat has 200+ older adults)
- ▶ **Resources:** VCH translated materials to share with older adult parents who do not speak English
- ▶ **In-person:** Seniors centres, post office, churches, neighbourhood houses, temples, community centres (e.g. Carnegie community centre), organizations with trusted staff or volunteers that speak their language (e.g. Impact North Shore), case manager, home support staff, dietician, friends, and family

CHECK-INS AND SUPPORT SYSTEMS

Key themes:

- ▶ **Check-in preferences:** Most participants supported check-ins to support their wellness and home conditions, but had mixed preferences. Some raised concerns about being on a list of “vulnerable people” and feeling unsafe with police checks.
- ▶ **Existing supports:** Several community groups, neighbours, and family already provide informal check-ins, despite some being at high risk themselves. Some participants noted that they receive ongoing formal check-ins from homecare and adult day programs.
- ▶ **Community challenges:** Community organizations fill service gaps left by government agencies without financial support, and lack certain legal recognitions, sometimes causing delays in aid.

Receiving support

Checking on people during extreme heat events can potentially save lives, as 98% of heat-related deaths during the 2021 heat dome occurred indoors in a residence (BC Coroners Service, 2022). Participants were asked what they thought of this intervention and who they would want to check on them. Many older adults liked the idea of check-ins and some suggested that building managers should take responsibility for this.

Participants with chronic health conditions raised concerns about being added to a ‘vulnerable people’ list. Implementation preferences varied across the groups, with some participants favoring text messages over daily calls, some people not feeling safe with police, and others wanting police support. Most agreed that if unreachable they would want a volunteer, neighbour, friend, or family member to check on them before involving emergency services. This points to the value of building social connection to reduce the need for more formalized check-ins.

“The wellness checks were lifesaving. Seniors were so appreciative of the call and were often waiting by the phone for us.”

(Renfrew Collingwood Seniors Society)

Challenges to supporting others

Participants provided examples of formal and informal check-ins already provided by adult day centres, neighbourhood houses, block watch, neighbours, home health, and adult children. Some participants, including older adults, people with disabilities, and people with chronic health conditions, also cared for older family members or friends despite being at higher risk themselves. At times, providing care for others put those participants at further risk when they had to travel, run errands, and provide support in the heat. Participants and volunteers were frustrated that communities often step in to fill service gaps left by government agencies, while this support lacks financial backing. Neighbours are paying to support neighbours, even when they may not be able to afford it. It was also flagged that community often acts as next of kin for those without family but are not legally recognized, which can delay support. One participant spent hours finding and persuading a building manager to allow them access to check on an older adult because they were not next of kin. The older adult turned out to have heat-related illness and needed to be hospitalized.

“I’m concerned by the idea of maintaining a list of “vulnerable people” for privacy and autonomy reasons. I also have concerns about who would be responsible for performing the wellness checks (social workers? police? nurses? peers?). I prefer the idea of people having easier, immediate access to services/support when requested. Right now, it isn’t available when requested. I don’t understand investing resources in wellness checks rather than requested services.”

(Person with chronic health condition)

WILDFIRE SMOKE EVENTS

Key themes:

- ▶ **Impact on people with asthma:** Wildfire smoke events have drastically altered the lives of participants with asthma, causing them to limit outdoor activities, stay in air-filtered environments, manage high doses of medication, and live with the fear of attacks, which can be triggered rapidly.
- ▶ **Medically vulnerable groups:** Older adults and participants with chronic medical conditions also experienced health impacts, sometimes having breathing issues even before smoke was visible.
- ▶ **Coping strategies:** Many lack air filters, relying on staying indoors and closing windows, with some participants suggesting air filters be loaned out at libraries or available as funded medical devices.

People with chronic lung conditions

Participants with asthma highlighted how the rise in wildfire smoke events has significantly impacted their quality of life. Previously active lifestyles that included hiking, camping, going to the beach, and walking for transportation have been curtailed. During smoky periods, they must remain in spaces where air can be filtered, such as their homes, cars, workplaces, or other indoor environments. Some participants noted needing to call in sick during smoke events due to asthma symptoms, which affected their work productivity. Managing their health requires meticulous attention to medications, often at already high daily doses. While some try alternative therapies to alleviate symptoms, these treatments are often not covered by benefits. The severity of their condition means that an asthma attack, which can feel like choking, can be triggered in seconds. One participant said they have come to “accept this is the new normal.”

“I chose to just give up going to the beach or spending time outdoors so that I don’t have to increase my dosage of my asthma (medication) because you are told to either maintain the dosage that was prescribed to you or reduce it, not to increase it.”

(Person with a chronic health condition)

Other people at risk from wildfire smoke

As wildfire smoke events have increased, more people are recognizing they are at risk, including older adults who are more likely to have heart and lung conditions, and other challenges to coping with changes in their environment. Some described experiencing unexpected breathing issues even before the smoke was visible, and even leading to hospitalization. A participant with disabilities felt constant discomfort from their throat being dry and was unable to run during the day, which is their preferred way to spend leisure time.

Coping strategies

Most participants did not have household air filters, except for those with severe asthma. Older adults reported managing wildfire smoke as they do for extreme heat events, staying inside and closing the windows. One older adult’s home was built in 1928, so smoke easily leaks in. Another participant found it difficult to stay inside, especially with a recent wildfire smoke event lasting 12 days. One group wondered if libraries could loan air filters or if people could claim air filters as a funded medical device.



EXTREME COLD EVENTS

Key themes:

- ▶ **Staying home:** Most participants relied on staying home during extreme cold, with some dependent on family or neighbours for support, while others struggled to access public transit.
- ▶ **Injuries and risks:** Falls and injuries were common, with some participants avoiding going out due to icy conditions, and one group sharing that an older adult community member died after a fall in a snowstorm.
- ▶ **Health impacts:** People with chronic health conditions and disabilities may face greater risks during extreme cold events, including interruptions to essential supplies or services and difficulties accessing community supports.

During extreme cold and snow events, participants generally relied on staying at home as their primary strategy. This is feasible for some due to family or neighbours who provide food and check on them, while others tried to navigate inconsistently cleared sidewalks and snow-covered bus stops to access supplies. Some didn't have a choice. For example, one older adult, whose car got stuck in a snowstorm, had to remain alone at home for four days until the snow melted.

Injuries and near misses were common during these events. One older adult broke a bone in a fall three years ago and has since avoided going out in the snow. Others shared experiences of icy bus stops, with one participant needing to rely on strangers for support to avoid falling when getting off the bus.

People with chronic health conditions are particularly affected during extreme cold, with one participant with disabilities noting a shortage of medications at home during a snowstorm and people resorting to trading open packages of medications on Facebook groups. Participants raised concerns about isolated individuals, especially those with mental health challenges or no family support, who would struggle to access warming centers or supports. The only participants who accessed warming centres described living a short walk away. Participants with asthma are also at increased risk, as cold weather can trigger asthma attacks. Similar to during extreme heat events, participants shared that their only transportation option during cold events is driving, as it allows them to control the temperature inside their vehicle.



SUMMARY OF KEY THEMES

01

Extreme heat can be life-altering

For priority populations, extreme weather events may impact their ability to work, sleep, access necessary supplies like groceries or medications, maintain social connections, and may even be life-threatening. As these events are increasing with climate change, the impacts are extending to longer periods of the year. Participants with chronic health conditions shared that they now spend their summers in fear of extreme heat events because their homes become dangerously hot, and they do not have alternative spaces they can access. Older adults reported being isolated and housebound during recent snowstorms. Priority populations may also be at risk from multiple hazards, further prolonging the impacts.

02

Adopted coping strategies are often lower cost, familiar, and close to home

Participants typically relied on simple, accessible strategies to cope with climate-related weather, such as using fans during heat, closing windows during wildfire smoke, or staying inside at home during the cold. Solutions like air conditioning or air filters were often out of reach due to costs. Many were unaware of formal cooling or clean air spaces, or felt they were uncomfortable and inaccessible, and often chose to stay home. As supports continue to be developed for climate-related emergencies, it's vital to recognize that people tend to choose easy tools, trusted community spaces, or simply remain at home.

03

Public health communications must continually improve

Despite updated and heightened public health messaging after the heat dome, responses from participants suggest that some key messages have either not reached or been adopted in communities. For example, public health guidance for extreme heat does not recommend fans as a sole means of cooling, yet this was by far the most common method used by participants, and most believed that fans were sufficient. Also, many participants reported staying at home during heat events, despite high indoor temperatures posing the greatest risk. For wildfire smoke, most participants were not aware of the benefits of air filters. Feedback from participants indicate that the gap could in part be due to guidance not being practical, accessible, culturally appropriate, translated, or shared offline.

Older adults generally preferred traditional media, community networks, and in-person connections, while younger participants relied more on online resources. To improve communication, participants suggested tailored approaches such as multilingual presentations, and senior-focused news segments. Across all groups, there was a strong emphasis on the importance of in-person communication, trusted messengers, and reducing reliance on online channels.



04

Community members and organizations are concerned about the accessibility and reliability of health supports

A component of this project was to understand if priority populations were receiving supports or resources from Vancouver Coastal Health to help them prepare for and protect their health during climate-related events. Participants reported home health staff checking in on older adults who were existing clients, specialist physicians guiding those with chronic health conditions, and participants seeking emergency healthcare for themselves or others during events. A few participants also accessed translated Vancouver Coastal Health resources available online. One group with participants who primarily speak Farsi shared many challenges trying to access regular health services and translated health information. They were also less aware of health guidance for heat events than other groups. Feedback from participants does suggest that there is an opportunity for greater supports from the health authority for people who are not receiving home healthcare. The general sentiment was that additional community support from the health authority is needed. Participants and volunteers from community organizations shared concerns about the availability of health services, especially after challenges accessing emergency care during the 2021 heat dome.

"I wish the government or Vancouver Coastal Health could loan to us air conditioning so when we have another heat dome it will save more lives."

(Person with a chronic health condition)

05

Transportation barriers exist for protection from multiple hazards

Challenges with transportation were identified by both participants and community organizations as a barrier during all climate-related emergencies. Lack of accessible transportation limited participants' ability to access cooling, warming, or cleaner air centres. It also impacted their ability to access supplies, attend health care, or seek support from other community spaces (e.g. visit family with air conditioning or pick up frozen meals from their adult day program). Transportation barriers mean that participants often felt their only option was to stay at home, leading to social isolation and being hidden from community members who may be able to provide support. Community organizations shared that a lack of transportation hinders their ability to provide services for community members. This may be due to the lack of a vehicle, drivers, or the funding to operate. Without improvement to transportation options, certain site-based strategies such as opening cooling centres, are unlikely to adequately serve the populations most at risk.

06

Policies and services need to take an equitable, intersectional approach

Priority populations, like others in the community, seek ways to adapt to increasing climate-related events to protect their health and minimize impacts to their day to day lives. However, services and policies must adopt an intersectional approach to address the multiple barriers these groups face, which often limit equitable access to tools and supports. Participants highlighted the challenges they experienced during various climate-related events, which were further intensified by environmental, social, and financial barriers. New approaches must be co-developed with people who have lived experience to ensure accessibility.



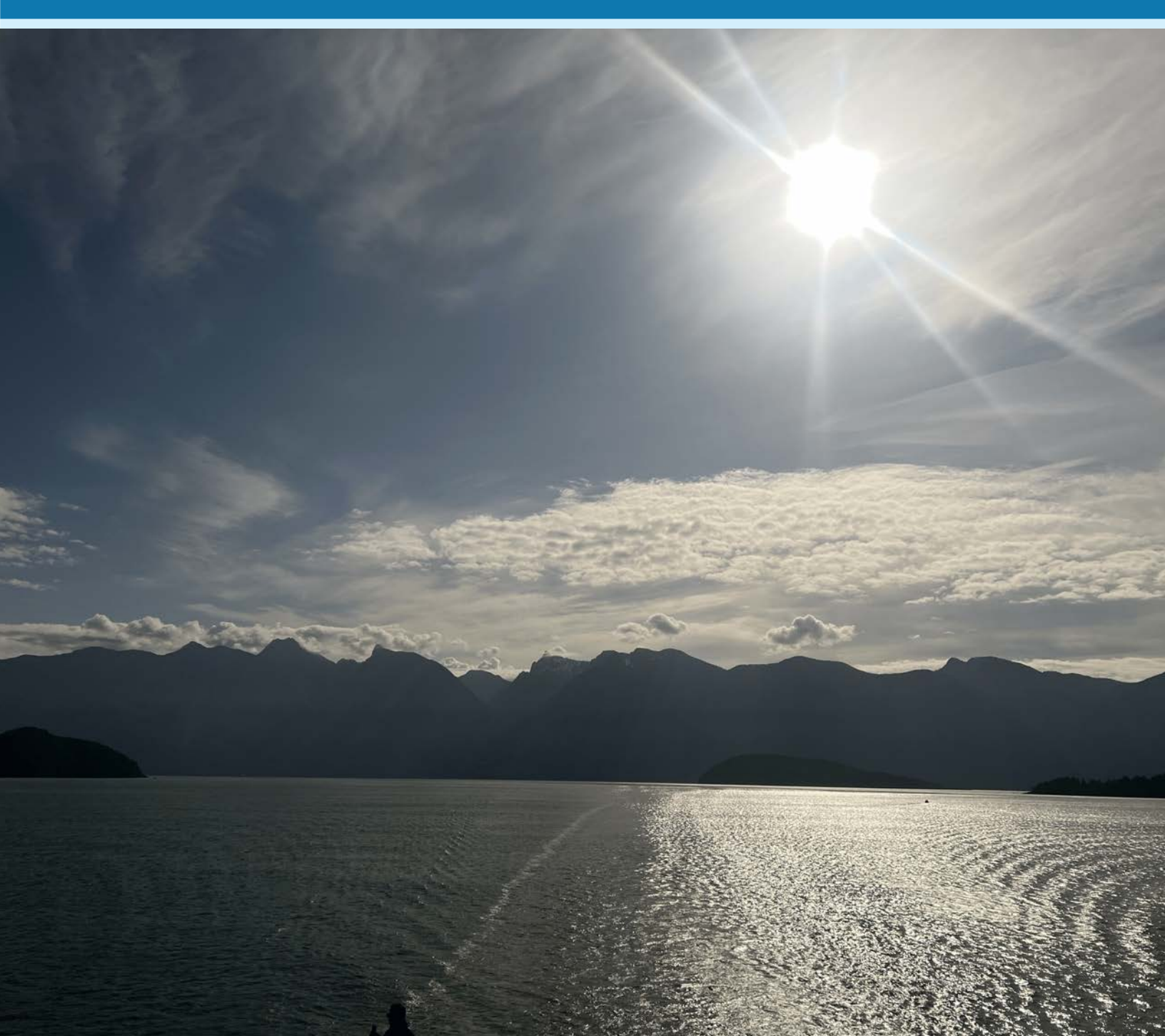
CONCLUSION

Extreme weather events are profoundly impacting priority populations, disrupting their health, safety, and daily lives. Participants reflected on the barriers they face during emergencies, including isolation, inadequate housing, lack of transportation, and limited access to essential supports. These challenges are often compounded by environmental, social, and financial barriers, highlighting the inequities in how these events affect our communities.

The discussions highlighted the importance of working directly with priority populations to understand their unique needs and lived experiences, and to ensure they are reflected in policies and services. Practical, accessible, and multilingual communication, along with working alongside trusted, in-person networks, also emerged as essential for effective outreach.

We are committed to addressing these calls to action and advocating for this approach. In the time since this engagement, we have expanded our outreach to urban and rural communities, increased the translation of our resources, continued to collaborate with and provide funding for community organizations that support priority populations during climate-related events. We have shared these findings and other local data on climate and health through both internal and external channels. We deeply appreciate the participants and organizations who generously shared their time and expertise with us, and we look forward to continuing this work together to strengthen our communities' resilience to climate change.





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