island health

Climate Change and Planetary Health Strategy

SEPTEMBER 2024

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Executive Summary

Health Canada has identified climate change as the greatest global threat to human health in the 21st century, as climate-related hazards increasingly impact the lives of many Canadians.

The direct impact of climate change on human health includes increased prevalence of heatstroke, skin cancers, eye cataracts, infectious diseases, and injury or death from extreme weather events.[1] Indirect health effects may involve the exacerbation of pre-existing conditions—such as respiratory illness due to worsening air quality and adverse mental health outcomes (such as eco-anxiety).[1] Weather and climate hazards also increase the risk of other noncommunicable diseases. According to the World Health Organization (WHO), heatwaves and air pollution may increase the risk of cardiovascular disease, including stroke, while air pollution is associated with an elevated risk of heart disease, asthma, chronic obstructive pulmonary disease and lung cancer.[2] A recently published global population-based study conducted from 1990-2019 suggests an association between non-optimal temperatures and death and disability from stroke, estimating that up to half a million stroke deaths in 2019 may be linked to climate change.[3] In addition, climate change intersects with the social determinants of health so that vulnerable populations, including seniors and those of poorer socio-economic class, are disproportionately affected.[4]

Climate change is not just a threat in the future. It is already threatening health and well-being, as well as health-care services within the Island Health catchment area. Between June 25 and July 1, 2021, B.C. experienced a heat dome—a high-pressure weather system of extreme heat caused by the atmosphere trapping hot ocean air like a cap, leading to record-high temperatures that reached 49.6 C. These elevated temperatures resulted in widespread disruption, leading to the failure of essential equipment while heat stress and

the unprecedented closure of schools increased absenteeism among health-care workers, placing additional pressure on systems and staff.[5] Several hospital laboratories were forced to close because of failing cooling systems during the same event. Furthermore, most Island Health long-term care facilities do not have air-conditioning.

Almost one-fifth of drinking water systems on the Island have already experienced water shortages (16 per cent) and Island Heath is also the greatest single water user within the Capital Regional District. The November 2021 washout of Trans Canada Highway 1 on the Malahat was caused by the occurrence of an atmospheric river, a warm corridor of tropical moisture that travels through the atmosphere and is likened to a river in the sky that can carry more than double the flow of the Amazon River. This resulted in fuel shortages in Victoria because most of the supplies are brought to the Island via Nanaimo Harbour. Moreover, only three to five per cent of the food consumed on Vancouver Island is produced here, which makes communities vulnerable to extreme weather conditions affecting ferry traffic.

The increasing occurrence of forest fires pose a significant threat to the delivery of care—one small forest fire closed Highway 4 to Port Alberni and Tofino for more than a month in 2023. Climate change impedes the delivery of high-quality and safe patient care by placing additional strain on the health-care system through disruptions to critical infrastructure, supply chains, staffing levels and transportation. Extreme weather has also led to shortages in the provision of essential, life-saving medication required for surgical patients or those undergoing cancer treatment.[6]

The increased incidence of wildfires, water shortages, heatwaves and flooding across B.C. is predicted to worsen. The June 2021 heat dome event resulted in a sudden and significant increase in death. More than 800 deaths were investigated by the BC Coroners Service (BCCS) during the week of June 25–July 1, 2021, and 619 of these were identified as heat-related. A significant increase in hospitalizations was estimated to cost at least $8 million.[5, 7].

Island Health recognizes its role in lessening the organization's contribution to climate change while acknowledging planetary health (the interdependencies of human health and Earth's ecosystems) as a critical priority. Island Health must adapt to address the emerging impact of deteriorating planetary conditions on the population it serves, its staff and its infrastructure. Encouragingly, pockets of innovation within the organization and in other health authorities across B.C. are testament to the motivation, commitment and resilience of staff for mitigating and adapting to climate change.

Island Health's *Climate Change and Planetary Health Strategy* serves to coordinate efforts across the organization toward a shared purpose, vision and goal for climate action, while aligning with governmental mandates and direction. Last year, the Climate Change and Planetary Health Steering Committee undertook a robust and extensive engagement exercise to capture key employee insights across Island Health. Through meaningful engagement with internal teams and external organizations, and supported by the vast array of evidence that emphasizes the urgent need

for climate action, the Climate Change and Planetary Health Steering Committee has identified the following priorities and strategies:

VISION	*A climate-resilient health system that demonstrates excellence in sustainability and upholds its responsibility to planetary health.*			
MISSION	*Empower people, staff and communities to foster planetary health and build climate resilience within the health-care system and through community partnerships.*			
PRIORITIES	**1.** Improve the climate resiliency, adaptability and environmental sustainability of our health-care services	**2.** Create a culture of coordinated and effective climate action	**3.** Build sustainable and climate-resilient health-care infrastructure and operations	**4.** Build a shared path with partners and communities toward climate resilience
STRATEGIES	**1.1** Embed a planetary health lens into all decision-making throughout operations and clinical care	**2.1** Lead the development of a sustainable health system that prioritizes planetary health and is prepared for climate change	**3.1** Reduce climate vulnerabilities in all infrastructure	**4.1** Identify, initiate and foster partnerships and shared paths with local governments, non-profits and Indigenous communities toward climate resilience
	1.2 Improve and optimize climate-resilience in all health-care services	**2.2** Inspire and promote planetary health- and climate-informed practices (both clinical and operational)	**3.2** Reduce GHG emissions toward net zero operations and reduce toxic waste disposal	**4.2** Develop mechanisms to strengthen community health, planetary health and climate resilience
	1.3 Nurture partnerships and demonstrate leadership to ensure climate-resilient, community-based services	**2.3** Support and champion staff-led climate action and planetary health leadership/ activities	**3.3** Require more efficient resource use and decrease waste	**4.3** Strengthen community emergency preparedness and climate resilience through targeted efforts
	1.4 Strengthen Island Health's emergency preparedness and climate resilience	**2.4** Develop staff and medical staff education to drive and empower change for a climate-resilient and sustainable health system	**3.4** Develop internal and external partnerships to foster and facilitate climate mitigation within the health system	**4.4** Partner and collaborate with the provincial government to promote climate resilience- and planetary health-supporting policies

By making meaningful progress on the above strategies Island Health will take action to address climate change and planetary health in the months and years ahead.

Introduction

Climate change poses an existential threat to humanity and is already having a profound impact on Island Health's operations, staff, patients and the communities that we serve.

Island Health has an obligation to lessen the organization's contribution to climate change, recognize planetary health as a critical and urgent priority, and adapt to meet the emerging impact of deteriorating planetary conditions on communities, patients, staff and infrastructure.

Island Health's *Climate Change and Planetary Health Strategy* aims to achieve the following objectives:

- Align efforts locally within the organization with provincial and federal government mandates and direction on climate change.
- Collaborate with Indigenous communities on Indigenous-informed approaches to climate change action and planetary health.
- Demonstrate Island Health's moral leadership in addressing climate change and supporting planetary health.
- Promote the health of the population and mitigate adverse impacts of climate change on health outcomes to improve public health and wellness, and to reduce health inequities.
- Acknowledge and realize the physical and mental health co-benefits of tackling climate change for improving population health—these include, but are not limited to, active travel, increased consumption of fruit and vegetables, and increased accessibility to green spaces.
- Align efforts across the organization toward a common goal and create a unified vision for climate action at Island Health.
- Connect the pockets of innovation across Island Health and support grassroots interest and passion among staff that work across provider settings. Each person acknowledges their role in supporting our organization's mitigation and adaptation strategy, and how they can provide their expertise as past of a broader solution.
- Protect the sustainability of our organization to ensure undisrupted health-care services and to improve the experience, health and well-being of Island Health staff.
- Realize the benefits that greener technology and processes can bring.

This report summarizes the research, engagement and strategic planning undertaken by the Island Health Climate Change and Planetary Health Steering Committee. This cross-organizational group of leaders have established this strategy to articulate both a clear call to action on climate change and planetary health, and to give direction on clear priorities that will guide our collective next steps to address this challenge.

Guiding Principles

The following principles have informed the development of this strategy:

Equity-Informed Processes	• Underserved and equity-deserving populations are being disproportionately impacted by climate change. • Island Health will prioritize decision-making related to climate preparedness and adaptation using a health equity lens and will endeavour to use equity-informed processes in the strategy development process.
Indigenous-Informed Processes	• Island Health has a responsibility to address systemic racism and Indigenous-specific racism within the health sector in alignment with the recommendations of *In Plain Sight*. • Moving toward equity-oriented harm reduction, Island Health is also committed to eliminating the negative health consequences of stigma and discrimination. • The *Climate Change and Planetary Health Strategy* will seek to build relationships with Indigenous communities and invite collaboration in the strategy development process.
Collaboration	• This process will continue to engage interest holders and partners in meaningful ways to ensure insights gained inform actions, and collaborative approaches to climate change are advanced. • The development of the *Climate Change and Planetary Health Strategy* for the organization is not intended to impede or delay any current efforts and initiatives that are being undertaken across Island Health. The strategy is intended to provide clearer direction and communicate a cohesive vision for the organization's climate action that will support and align these efforts.
Building on Existing Work	• Significant expertise has been built in many parts of the organization, and much work on climate preparedness, adaptation and mitigation is already underway in Island Health and among our key partners. This strategy is intended to build on this work and leverage the expertise and lessons learned for a stronger approach in the future.
Common Provincial Approach	• Island Health will ensure its approach aligns with how other health authorities approach planetary health, and ensure that it supports and integrates with the efforts of organizations such as the Ministry of Health, the BC Centre for Disease Control and others.
Flexibility	• Ensure, wherever possible, decisions are made in a way that does not preclude an emerging need to respond and change direction in the future.

Background & Context

Climate Change

According to Health Canada, climate change represents the greatest global threat to human health in the 21st century and climate-related hazards already impact the health and lives of many Canadians.[8] The changing climate is increasing the annual frequency of very hot days and warm nights—these refer to periods when temperatures are significantly higher than the average for a given location based on percentiles of daily maximum and minimum distributions over a 30-year climatological period. Furthermore, there is an increased incidence and severity of extreme weather events and consequent cascading disruptions, such as droughts, wildfires, flooding and storm surges. Widespread changes to the atmosphere, biosphere and oceans are also occurring, including sea level rise, ocean warming and acidification caused by increased CO2 concentration in the atmosphere.[9]

The magnitude, pattern and rate of climate change over smaller spatial scales are inherently uncertain. However, increases in the number of days that extreme heat can harm the population and economy will continue until the middle of the century due to locked-in warming from past emissions since some of the impacts of global warming are irreversible, regardless of the extent to which greenhouse gas (GHG) emissions may be reduced in the short term.[5, 9] For example, even under a medium-warming scenario, Zhang et al. 2019 predict that the number of days annually that exceed 30 C by the middle of the century will double in southern Ontario.[10] The intensity and pattern of health risks that emerge beyond 2050 will be determined by the extent to which greenhouse gas emissions are increased or reduced in coming years, and the resilience of health systems for managing current risks and preparing for projected ones.

Climate Change & Human Health

The changing climate is already having a profound effect on Island Health's patients, staff and services. Changes are complex and encompass the physical, psychosocial and ecological dimensions of health while the heterogeneity of the population served by Island Health means that people experience vulnerability to climate change in three ways:

- Exposure: The extent to which an individual is exposed to climate-related hazards and whether they are able to access interventions that mitigate these, such as air conditioning or purification tools.[4]
- Sensitivity: Physiological predisposition for suffering an adverse outcome, determined by factors such as age, pre-existing health conditions and socio-economic status.[4]
- Adaptive capacity: Ability to avoid, prepare for or adapt to harmful risks to health. For example, a high-income earner may have better access to temperature-controlled indoor environments,

prescription medications and clinical services than someone receiving a lower income.[4]

Non-communicable diseases (NCD) are responsible for the deaths of more than 41 million people annually and account for 74 per cent of all deaths globally. Most are attributable to cardiovascular disease (17.9 million), cancer (9.3 million) and diabetes (two million, including kidney disease) and account for more than 80 per cent of all premature NCD deaths. An unprecedented increase in the incidence and prevalence of non-communicable disease coupled with the health risks associated with climate change has led the WHO to recommend synergistic interventions that are targeted at both. As a result of new research and relentless campaigning by health experts, COP28 ran its first Health Day in December 2023 which culminated in a new Declaration on Climate and Health, signed by 124 countries that acknowledged the need for governments to protect population health.

According to the WHO and other peer-reviewed publications, the impact of climate change on NCDs are direct and indirect:[2]

- Heat waves: schizophrenia, diabetes, chronic kidney disease, cardiovascular diseases such as stroke[11]
- Air pollution: stroke, heart disease, asthma, chronic obstructive pulmonary disease, lung cancer
- Wildfires: suffocation, burns, cardiovascular and respiratory problems, mental health, destruction of health services and housing
- Drought: food insecurity and psychosocial stress
- Floods: disruption to health services, displacement and shortages of safe potable water, mental health, food insecurity, and allergies, asthma and other respiratory issues related to mould[12]
- Injuries and mortality from extreme weather events
- Impact on health-care facilities

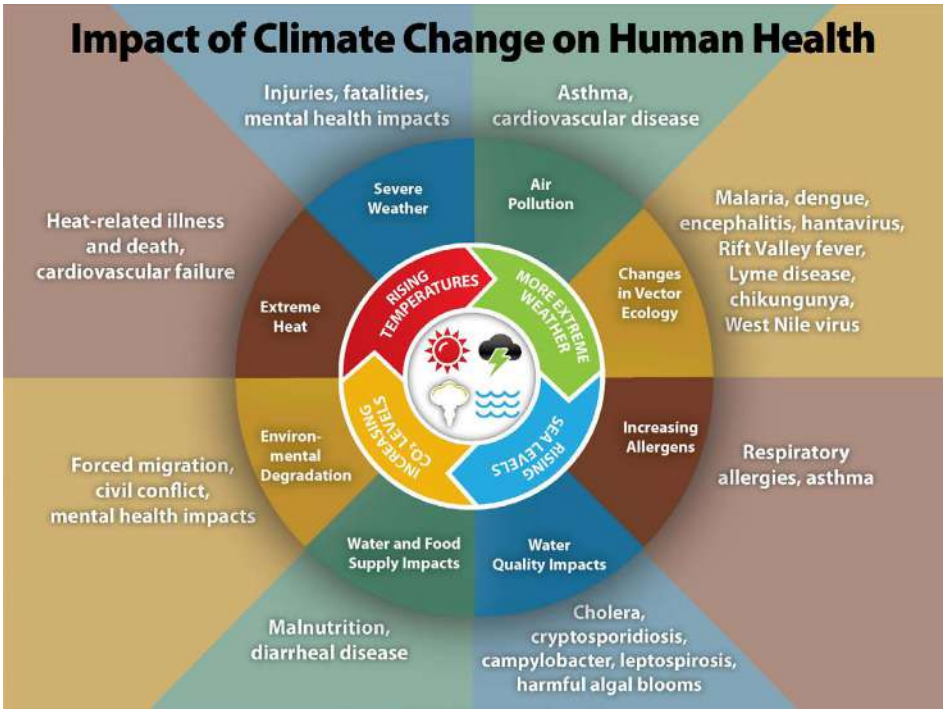


Figure: Impact of Climate Change on Human Health. *Centre for Disease Control (CDC). Climate Effects on Health 2024. 2024.*

For instance, schizophrenia was the most strongly associated disease with increased odds of death caused by the heat dome of 2021 in British Columbia.[11] Other non-communicable diseases associated with increased risk for death were chronic kidney disease and ischemic heart disease, as well as a higher overall burden of diseases.[11]

Furthermore, these climate-related health risks undermine the social determinants of health by disproportionately impacting vulnerable and disadvantaged groups including women, children, ethnic minorities, migrants or displaced persons, older adults, those with underlying health conditions and poorer communities. In B.C., the risk of death during the heat dome of 2021 was associated with deprivation, lower neighbourhood greenness, older age and sex.[13] High indoor temperatures are often associated with socioeconomic deprivation and poor housing quality.

It is vital to train health-care staff about the potential implications that climate change will have on their patients and their work so that these variables can be managed wherever possible. Climate events have also prompted the development of clinical practice recommendations aimed at protecting the health of patients with pre-existing conditions, such as those with respiratory disease who are arguably one of the groups most affected by climate change.[14]

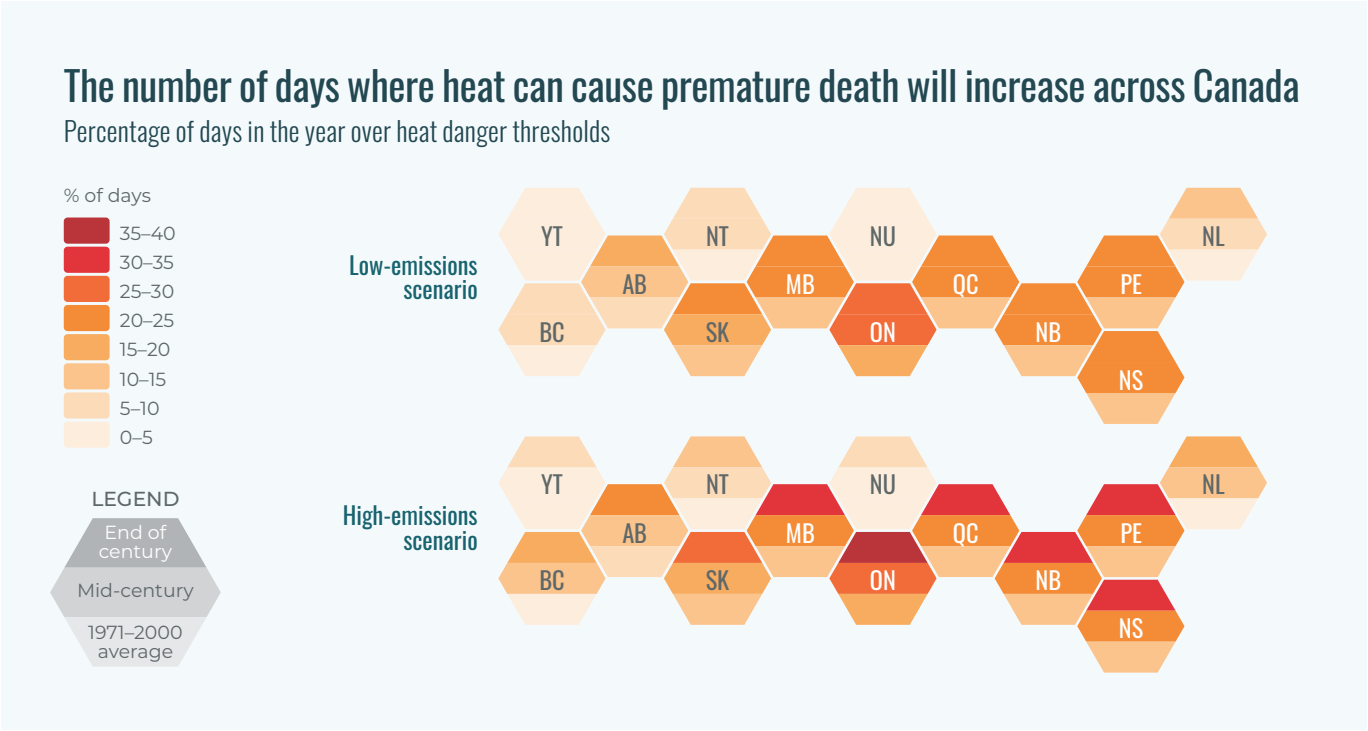


Figure: Impact of Climate Change on Human Health.

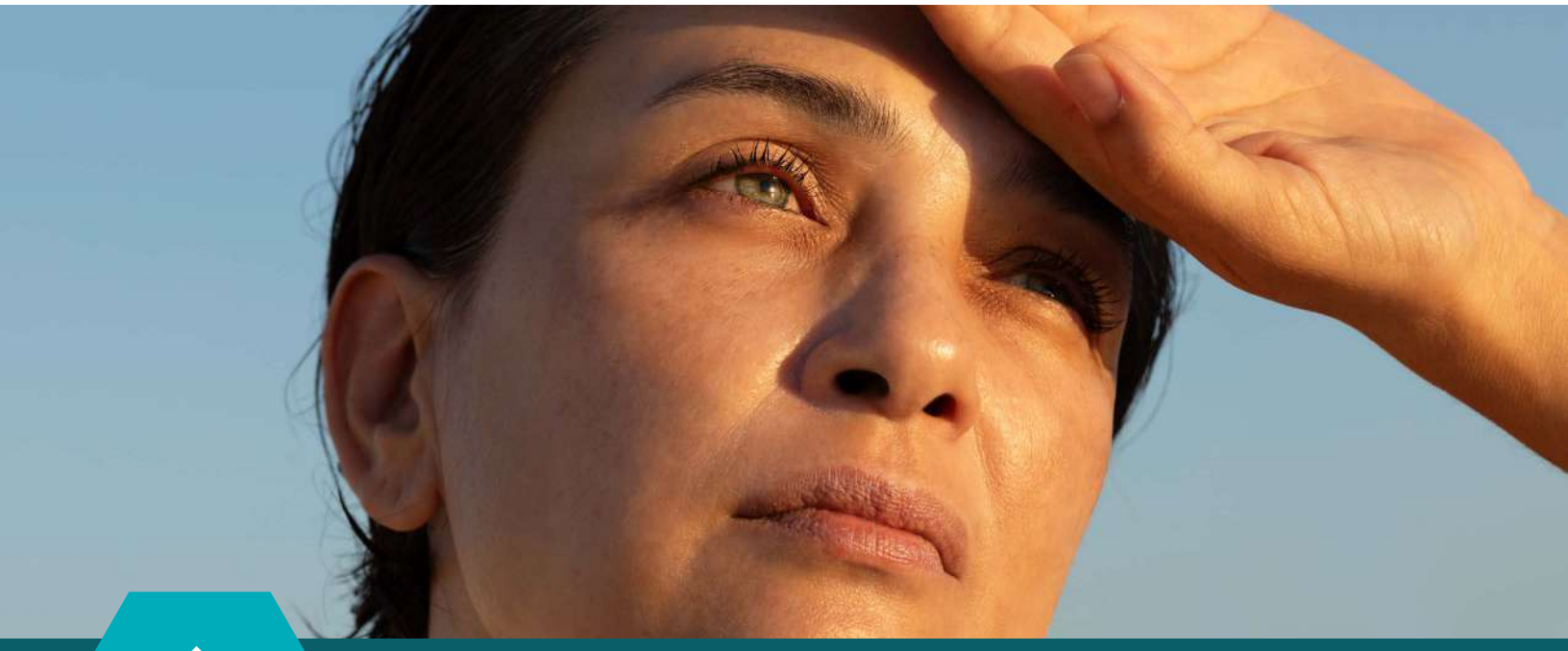
Canadian Climate Institute. The Health Costs of Climate Change: How Canada can Adapt, Prepare, and Save Lives. 2021.

Extreme heat can have a detrimental impact on health. Elevated daily temperatures (especially in urban areas) increase the risk of heat-related illness and can reduce air quality, exacerbating respiratory illnesses. [15] Persistently high night-time temperatures can also pose a serious health threat to older adults and individuals with pre-existing chronic health conditions. [16] Many common medications, (including antihistamines, antipsychotics and antidepressants) can impair heat dissipation, while others (such as transdermal medications) have different absorption rates dependent on temperature. [17, 18]

Another area requiring increased attention is mental health. Concerns related to the mental health impacts of climate change often tend to focus primarily on the direct and immediate impacts of experiencing extreme weather events. However, psychologists are also warning about the longer-term indirect mental health impacts of climate change, which are becoming more prevalent for children and adults alike (e.g., eco-anxiety, climate depression).

Additional health impacts may also include: [19],[20]

- Increased incidence, prevalence and worsening of respiratory conditions related to poor air quality and wildfire smoke. Patients with asthma, COPD, interstitial lung disease and lung cancer are especially vulnerable. [14]
- Higher rates of infection from new and/or re-emergent pathogens or other contaminants in warming waters.
- Aggravation of allergy symptoms from longer growing seasons.
- Increased risks of food contamination and waterborne illnesses.
- Increased food insecurity from loss of agricultural land and decreased food output.
- Injuries and fatalities from extreme weather events and weakening infrastructure.
- Reduced levels of physical activity due to intolerable outdoor temperatures and poor air quality, leaving the general population more susceptible to illness and disease. [14] Studies indicate that children may be particularly vulnerable to these effects because their lungs and immune systems are still developing, while they also tend to spend longer outdoors.



- Disproportionate impact on disadvantaged populations who are less likely to be able to mitigate the adverse impact of climate change through alternative diets, air conditioning and purifiers, insulation and flood-proofing. Less affluent populations may also be more exposed to heat through construction work or the agricultural sector and have limited access to high-quality health care and medications. [21]
- Increased risk of complications in pregnancy including preterm birth, low birth weight and stillbirth. [14]
- Increased stress and mental health impacts due to the worsening climate crisis and the potential erosion of well-being.

Recent studies indicate that more research is needed to assess the full scale of health impacts from climate change, including more complex interactions (such as the potential neurological effects of wildfire smoke). [22]

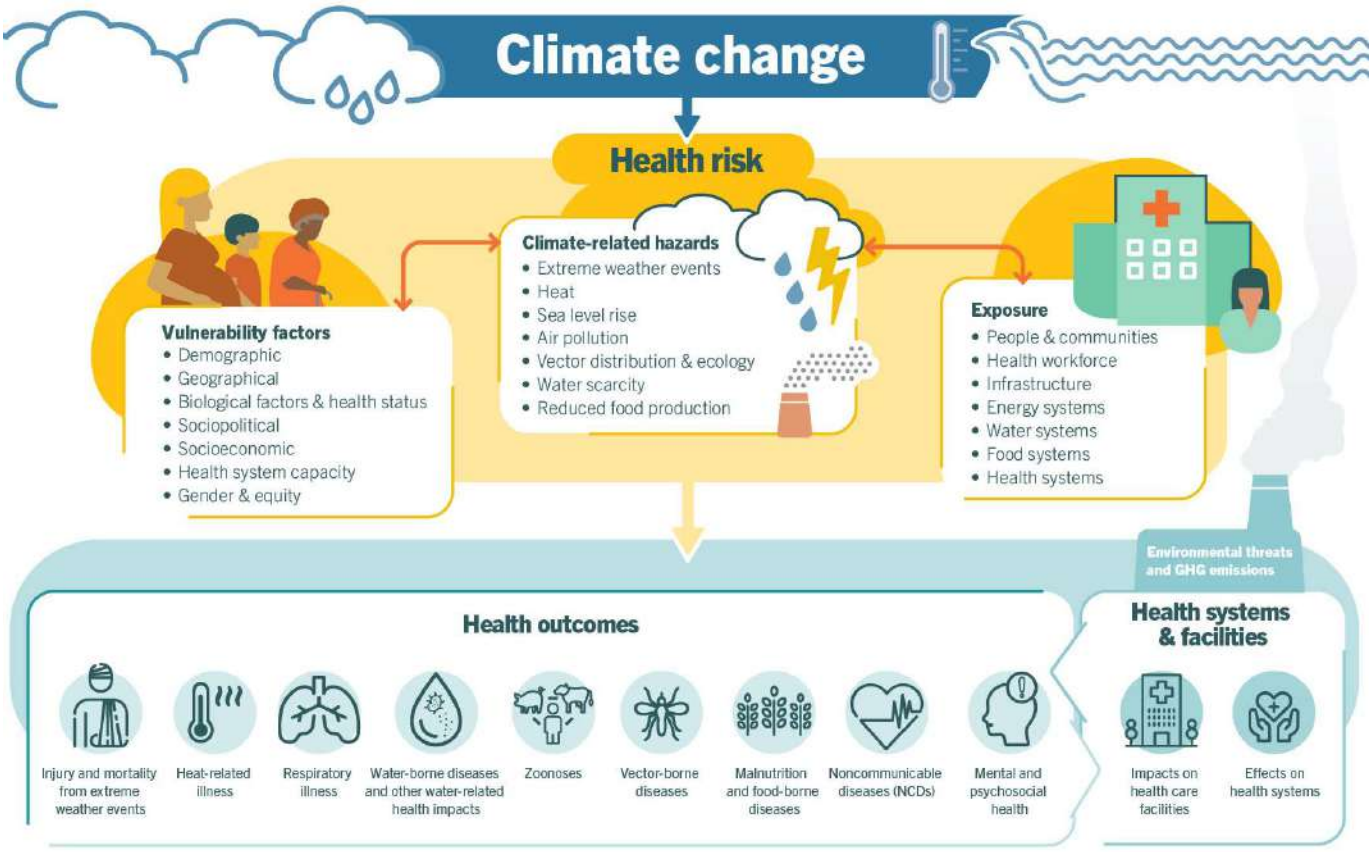


Figure: Climate Change & Health Risk Overview.

World Health Organization (WHO). Climate Change 2023. 2023.

Regional Climate Change Impacts

B.C. is experiencing ongoing changes to its regional climate, with the most significant threats being more severe wildfire seasons, seasonal water shortages, heat waves and flooding. [23, 24]

- Temperatures are predicted to increase by 1.8 C by 2050, with winters warming more than summers.
- Warming ocean waters will raise coastal air temperatures and humidity, increasing precipitation in the winter while reducing it during the summer.
  - Decreased summer precipitation, combined with increased overall temperatures, will increase the frequency and severity of seasonal droughts, as well as the risk of wildfires.
- Extreme weather events across B.C. are predicted to increase, with more storm surges and heavy rainfall in coastal areas, in addition to more frequent windstorms.
- Sea levels on B.C. coasts are expected to rise one metre by 2100, making many low-lying areas vulnerable to tidal flooding. [25] Rising sea levels also increase the risk of saltwater infiltrating into groundwater reserves in many Vancouver Island areas.
- Many health-care facilities (including hospitals and long-term care homes) will require significantly higher air-conditioning and air filtration usage, which will increase energy consumption, impose additional infrastructure requirements and potentially overburden older systems designed according to outdated building codes. Most Island Health long-term care facilities do not have air-conditioning.
- Prior to the heat dome of 2021, in Island Health's Clinical Operations Extreme Weather Events Survey of 2020, 61 per cent of respondents reporting on wildfire smoke events had experienced negative physical health impacts at work, and 55 per cent identified exacerbated symptoms in patients.
- Similarly, in Island Health's Heat Waves Impacts Survey of 2018, 68 per cent of Island Health's Home and Community Care Services staff who were surveyed reported experiencing negative impacts from high heat at work; impacts were reported to be observed in 50 per cent of patients as well.
  - Respondents working in support services and facilities management reported higher impacts from heat waves, as areas like laundry rooms, kitchens and workshops become very hot while also lacking adequate cooling systems.

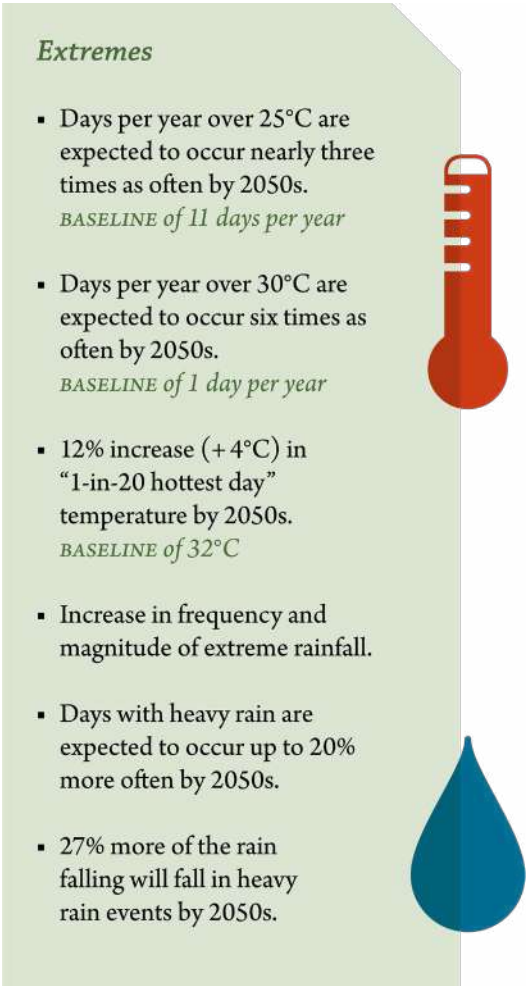


Figure: Climate Change on Vancouver Island
BC Agriculture and Food Climate Initiative. Vancouver Island Regional Adaptation Series. 2020.

Maintenance of occupational health during extreme weather events will become a greater challenge in the future. Multiple internal surveys on working conditions during extreme weather events have already revealed several challenges:

- Facilities management and operations respondents identified the most frequent negative impacts from extreme weather as strains or failures of physical building systems, and increased levels of stress and anxiety experienced by staff. Unreliable utilities, increased costs, lack of staff availability and impacts to facility access were also cited. For instance, limited resources during snowstorms caused staff to work longer hours in physically demanding ways, leading to higher levels of fatigue and resulting in increased costs associated with overtime.
- A 2020 study investigating the impact of extreme weather on clinical operations demonstrated that 80 per cent of staff reported that snow or ice storms had affected their work (88 per cent in Home & Community Care, 82 per cent in Acute Care, 80 per cent in Long-Term Care and 76 per cent in Mental Health & Substance Use).

The long-term decrease in summer rainfall, year-round warming, reduced snowpacks and increased evaporation coupled with the current overexploitation of ground and surface water has also made Vancouver Island and the Gulf Islands particularly vulnerable to drought. Frequent droughts, in turn, threaten drinking water quality and availability within the Island Health service area. The Drinking Water Operator Survey of 2021 revealed that 16 per cent of water systems had already experienced water shortages. The health implications of drought range from increased risk of water- and vector-borne diseases, pollution, and dust- and wildfire-related respiratory health impacts to food insecurity and forest fires. Drought-generated risks to health also fall under the mandated regulatory responsibilities of Island Health, i.e., regarding responsibilities defined by Drinking Water Act or general service delivery. Health-care services require potable water for operations and Island Health is the greatest single water user, for instance, within the Capital Regional District.

One of the most pressing challenges related to assessing the impact of climate change on health and health-care services is a paucity of studies that address the complexity and heterogeneity of the situation. Every health-care department will encounter different types of challenges among their patients, clients and staff. Recent reviews concluded that climate change has already contributed to increased surgical disease burden, challenged safe surgical care delivery and resulted in worsening surgical outcomes.[26][27] Reducing and managing health risks over the next few decades will require the modification of health systems to prepare for, cope with and recover from the health consequences of climate variability and change. Patients with chronic conditions are particularly susceptible to climate change, while past events have demonstrated the importance of future emergency planning. On July 7, 2017, a provincial state of emergency was declared across B.C. in response to the severity of wildfires occurring in the Interior. In response, the Williams Lake kidney care team relocated to a clinic area attached to the hospital's hemodialysis unit in Prince George, enabling staff and patients to remain together as a unit and ensuring continuity of dialysis treatment for five weeks.[28]

Climate Change Mitigation

Health care is one of the largest and fastest growing service sectors across Organization for Economic Cooperation and Development (OECD) countries and a significant contributor to climate change.[29][30] Health sector emissions account for 5.2 per cent of all global emissions, increasing by more than five per cent from 2018 to 2019.[31] In 2014, the health-care sectors across OECD countries combined (except for Chile and including India and China) were responsible for 4.4 per cent of total emissions, primarily generated through

energy consumption, transportation and product manufacturing, use and disposal.[30] Over half of health care's carbon footprint is attributable to the consumption of non-renewable energy sources that support the operation of health facilities. Health-care supply chains, including the production, transportation and disposal of goods such as medications and hospital equipment, are also significant contributors of emissions.[30] Additionally, certain anaesthetics (such as nitrous oxide) are potent greenhouses gases.[30]

According to 2018 calculations[32], Canada's health-care system was responsible for 33 million tons of carbon dioxide equivalents in 2018, which equated to 4.6 per cent of national total GHG emissions. In the same period, the Canadian health-care system produced more than 200,000 tons of other pollutants affecting health. While Canada's health-care sector ranks ninth globally for absolute emissions, it is third in per capita emissions (with more than one ton of CO_2/capita), only ranking lower than Australia and the United States.[30]

The cost of inaction is projected to markedly exceed that of proactive, preventive climate change mitigation efforts. For example, annual GHG emissions associated with health care in the United States have been estimated to cause 123,000 to 381,000 disability-adjusted life-years (DALY) in future health damages.[33] The Canadian Climate Institute suggests that even under the low-emissions scenario, heat-related hospitalization rates will increase 21 per cent by mid-century compared to the current average and double by the end of the century. Costs associated with heat-related death and reduced quality-of-life in Canada could also be substantial, ranging from $3 billion to $3.9 billion per year by mid-century.[4]

As climate change is already undermining the foundations of human health and health systems, health-care service providers, such as Island Health, have a moral obligation to reduce their GHG emissions to safeguard the health and well-being of current and future generations.

Planetary Health

Planetary health addresses the relationships between natural systems, and how human-induced changes to these systems affect ecosystem and human health. Utilization of a planetary health approach provides an opportunity for Island Health to address climate change alongside other complex social and environmental challenges in a systemic manner, fostering a more equitable and sustainable health-care system.

Planetary health is defined as:[34]

> *"The achievement of the highest attainable standard of health, well-being and equity worldwide through judicious attention to the human systems—political, economic and social—that shape the future of humanity, and the Earth's natural systems that define the safe environmental limits within which humanity can flourish. Put simply, planetary health is the health of human civilization and the state of the natural systems on which it depends."*

By addressing the long-term impacts of climate change across the organization, mitigation strategies also indirectly contribute to broader improvements in health outcomes through the realization of co-benefits. Examples of co-benefits include less reliance on cars and more active travel, which in turn may reduce obesity, lower cardiovascular disease risk and improve mental health. [35]

In practical terms, a sustainable, climate-resilient health system recognizes and is underpinned by practices, processes and infrastructure that minimize its environmental footprint and acknowledge the complex relationship between climate change, planetary health, health outcomes and the social determinants of health. Furthermore, a sustainable health system guarantees the consistent delivery of high-quality health care in the face of environmental instabilities such as the onset of extreme weather or the emergence of a new pandemic.

Complex causal pathways and changing patterns of disease cannot be addressed by biomedical approaches alone, but require proactive, interdisciplinary and cross-sectoral collaboration. A paradigm shift is required that redefines the role of health-care providers in effectively managing novel and complex challenges to health, including systemic ways to frame, understand and address health-care priorities in a rapidly changing world. [36]

In 2020, the National Health Service (NHS) set forth its commitment to achieving net zero greenhouse gas emissions by 2040. By acknowledging the interdependent relationship between planetary health and health-care delivery, the NHS has established health-care organizations as vanguards of environmental sustainability. [37] Similarly, Fraser Health finalized a Planetary Health Strategy in 2023, while Interior Health developed a Climate Change and Sustainability Road Map.

Indigenous Peoples and Planetary Health

Collaborating and partnering with the 50 First Nations and six Métis Chartered Communities that Island Health serves is critical for the effectiveness of the *Climate Change and Planetary Health Strategy* and action. The Intergovernmental Panel on Climate Change (IPCC) has long highlighted the importance of Indigenous knowledge in developing sustainable solutions and the potential contribution of Indigenous values as a key component in climate resilience. [38]

In B.C., the Declaration on the Rights of Indigenous Peoples Act (DRIPA) of 2019 provides even stronger obligation to integrate Indigenous perspectives in climate change and planetary health work. This is reflected, for instance, in the very first guiding principle of B.C.'s *Climate Preparedness and Adaptation Strategy* (CPAS) that states: "Build a Shared Path to Climate Resilience with Indigenous Peoples." The Ministry of Health additionally emphasizes the importance of

cultural safety and health equity as part of the CPAS priority action areas. The climate change-related governance and accountability vision of B.C.'s Ministry of Health, in turn, aims to strengthen links to Indigenous governance and to elevate Indigenous rights, self-determination and worldviews on climate change and health. Similarly, B.C.'s Bill-31 on emergency management explicitly recognizes the inherent right of self-government of Indigenous peoples. While the United Nations, the federal government of Canada and the provincial government of B.C. acknowledge the important role of Indigenous leadership and sovereignty in climate action and planetary health, land-based territorial connection also makes Indigenous communities more vulnerable to the changing climate and environmental destruction.

Human-inflicted global environmental challenges create new challenges for Indigenous communities in addition to assaults on their sovereignty and rights through colonialism and its continued impact.[39] Indigenous communities are disproportionately and acutely affected by climate changes despite contributing least to greenhouse gas emissions and other environmental effects.[40] Profound changes to the land have caused disruption to species, such as marine life that are integral to Indigenous food systems and medicines, affecting physical, mental, spiritual and emotional health and well-being.

While Indigenous peoples have been historically excluded from much of the discourse that has taken place around climate change, there has been growing recognition of the importance and value of their traditional knowledge for climate mitigation and adaptation strategies. Island Health is working in collaboration with Indigenous communities on planetary health initiatives, and emphasizes approaches such as the Climate Change and Health Community Gathering, held in January 2024. This event, co-hosted by Snuneymuxw First Nation and Island Health, is a foundation for developing a shared path forward that embraces the value of Indigenous knowledge and Western science to build climate resiliency.

Strategic Alignment

This strategy contributes to Island Health's 2024/25 Annual Priorities, and the proposed actions support several pillars of our five-year Strategic Framework. This strategy also supports the Ministry of Health's efforts to advance climate preparedness and climate adaptation across the health system.

In this fiscal year, this strategy encompasses the work that contributes to the achievement of two Island Health 2024/25 Outcome Goals (#22 and #23):

Goal 22: Achieve Island Health's GHG Emissions 2030 Target & Increase Waste Diversion to Mitigate Climate Impact

Output	Rationale	Summary of change work involved
22A – Achieve annual GHG emissions target of <=20,380 tCO2e, working towards the 2030 goal of 16,927 tCO2e.	Island Health's operations contribute to climate change and environmental degradation that have proven negative direct and indirect impacts on individual and community health and wellness.	Optimize and retrofit existing building systems to be more energy efficient. Ensure all new construction follows carbon-reduction guidelines and uses electric equipment.
22B – Increase the percentage of waste being diverted from the landfill at Island Health-owned facilities from 38.9 per cent to 46.3 per cent.	Materials sent to the landfill emit quantifiable GHG emissions that contribute to climate change. Environmentally responsible operations are a priority for Island Health.	Implementation of Environmental Sustainability Program Initiative including increased prevalence of reuse, recycling and diversion of waste from the landfill.

Goal 23: Increase Community Preparedness and Resiliency for Climate Emergencies

Output	Rationale	Summary of change work involved
23 – 100 per cent of water systems have updated Emergency Response and Contingency Plans (ERCPs) that include a response to low/depleted water levels.	Island Health communities are prepared for climate change emergencies as demonstrated by 100 per cent of community emergency response plans, including planning for drought.	Develop a water quality and quantity assessment tool and related processes for all drinking water systems. Climate resiliency education and engagement. Climate resilience assessment. Develop implementation plan for provincial Environmental Health Information System (EHIS), implementation in 2025/26.

Provincial Context

Climate change and planetary health are key strategic priorities for the B.C. government and the Ministry of Health. B.C.'s *Climate Preparedness and Adaptation Strategy* (CPAS) outlines four pathways to help ensure we stay safe and prepare for a changing climate.[41] The strategy highlights B.C.'s overall direction and actions to help better understand and adapt to the impacts of climate change, and is supported by more than $500 million in funding.[41]

Figure: Climate Preparedness and Adaptation Strategy
Government of British Columbia. Climate Preparedness and Adaptation Strategy. 2023.

The Ministry of Health identified four 2022-2025 priority action areas that outline the mandate of the climate change programs in Population and Public Health at B.C. health authorities:

Assess climate risks to health and the health system, including assessments and information systems to inform health policy, programs and services, and adaptation plans.	Build knowledge and capacity of health professionals and service providers, including dedicated staff to support CPAS actions and governance structures to prepare and respond to health impacts of climate change.	Public communications and awareness to support protection of the population and public health from climate-related health risks.	Cross-sectoral collaboration and engagement on innovative, evidence-based solutions grounded in cultural safety and health equity.

Laws and Regulations

In addition to CPAS, Island Health's *Climate Change and Planetary Health Strategy* needs to take into consideration the following B.C. Acts:

Emergency and Disaster Management Act (EDMA)[1]	
Co-designed with Indigenous Nations and developed under the Declaration on the Rights of Indigenous Peoples Act, SBC 2019, c 44 (DRIPA)	1. Acknowledges the connection between an increasing number of climate emergencies and climate change, addressing all four phases of emergency management set out in the UN Sendai Framework for Disaster Risk Reduction, adopted by B.C. in 2018. 2. Addresses the disproportionate impact of emergencies on Indigenous Peoples. Risk assessments and emergency management plans created under EDMA must consider "intersectional disadvantage" factors including age, disability, socioeconomic status and realized status. 3. Acknowledges Indigenous sovereignty, requiring any public sector agency preparing a risk assessment or emergency management plan involving Indigenous jurisdictions to consult with Indigenous peoples and incorporate Indigenous knowledge.

Climate Change Accountability Act and Greenhouse Gas Industrial Reporting and Control Act	
Legislates targets for reducing greenhouse gas emissions below 2007 levels as follows: • 16 per cent by 2025—interim target (42) • 50 per cent by 2030; 60 per cent by 2040; 80 per cent by 2050.	• Mandates provincial public sector organizations to achieve carbon neutrality every year. • Sets targets and requirements for provincial public sector buildings, fleets and fuels. • Establishes greenhouse gas emissions reporting and offset purchasing requirements for high-emission organizations (Greenhouse Gas Industrial Reporting and Control Act).

[1] Note that the Emergency and Disaster Management Act (EDMA) replaced the previous Emergency Program Act in November 2023.

Engagement & Survey Results

At Island Health, leaders and staff across the organization care deeply about safeguarding climate and planetary health.

Our organization recognizes the importance of connecting with each other and collaborating to develop and implement strategies and actions that benefit the population that we serve. Last year, the Climate Health and Planetary Steering Committee embarked upon an ambitious, organization-wide engagement exercise and survey to seek out meaningful feedback on issues of key importance to leaders and teams representing diverse clinical and non-clinical interests.

The survey was completed by 900 participants and demonstrated strong desire and support for climate change and planetary health action at Island Health:

Climate change concerns on Vancouver Island based on importance to you

Extreme weather events
- **Important 92%** vs. not important 5%

Effect of climate change on mental health
- **Important 86%** vs. not important 7%

Island Health related greenhouse gas emissions
- **Important 87%** vs. not important 8%

Emergency preparedness for Island Health staff
- **Important 93%** vs. not important 6%

Role of Island Health

To reduce its organizational emissions and improve sustainability
- **Agree 77%** vs. disagree 13%
- **Strongly 59%** vs. 6%

To prepare staff to respond to changing patient population needs related to climate change
- **Agree 73%** vs. disagree 15%
- **Strongly 50%** vs. 6%

To protect patients and the community from the health impacts of climate change
- **Agree 69%** vs. disagree 16%
- **Strongly 44%** vs. 7%

To build resilience and adapt its operations and infrastructure to respond to the challenges of climate change
- **Agree 76%** vs. disagree 15%
- **Strongly 58%** vs. 6%

Themes that came up during the engagement process and in the survey include the following:

- Island Health has a responsibility to act on climate change and planetary health, and to demonstrate leadership through role-modelling and advocacy, supporting climate-conscious decision-making and lessening our contributions to climate change. The need for a systemic or holistic approach was emphasized, as well as the importance of concrete action.
- Collaboration and coordination are needed across Island Health and by partnering with communities and various levels of government to support climate work. There are opportunities for alignment to have greater impacts.
- There are potential improvements to policies and procedures that could better support our planetary health goals. These include the routine consideration of climate concerns in our decision-making processes, creating plans to address specific vulnerabilities and supporting the implementation of wiser climate practices across the organization.
- The situation offers new kinds of opportunities to conduct research or develop, implement and evaluate innovative new monitoring mechanisms to address climate change and planetary health effectively (in emergency preparedness/management, climate adaptation and mitigation measures to reduce footprint).
- Specific attention needs to be paid to more susceptible populations and communities that are disproportionately impacted by the changing climate, including but not limited to rural and Indigenous communities. However, it was also emphasized that Indigenous sovereignty and DRIPA need to be respected and consequently integrated in climate preparedness.
- There are opportunities to build on previous work that has been completed to improve infrastructure and identify innovative approaches and technologies in the health-care sector.
- More support and empowerment are needed for staff-led action. Individuals want more education and training to enable them to identify what they can do to contribute toward a greener health system. Many are willing but unsure how best to make change. Incentives, rewards and accountability were recommended as mechanisms for encouraging action.
- Communicate more about all the great work that is being done by Island Health and support more grassroots learning and sharing of approaches. Many people are unaware of the significant efforts and successes that are already occurring.

Pockets of Innovation

During the engagement and research process, many innovative ideas and projects were highlighted that are already underway within Island Health. All are led by passionate leaders and clinicians, and represent a foundation of innovative approaches to solving climate-related issues that can be built upon. A summary of key ongoing initiatives is included below to share some of this ongoing work.

Cowichan District Hospital

The new Cowichan District Hospital (CDH) is due to complete in 2027. In emitting 75 per cent less greenhouse gas emissions than the existing site, CDH will become the first zero-carbon hospital in Canada and British Columbia's first all-electric hospital. Cowichan District Hospital is testament to Island Health's commitment to climate action, serving as a blueprint for B.C. and the rest of the country.

The Critical Air Project: Climate Conscious Inpatient Inhaler Management [43]

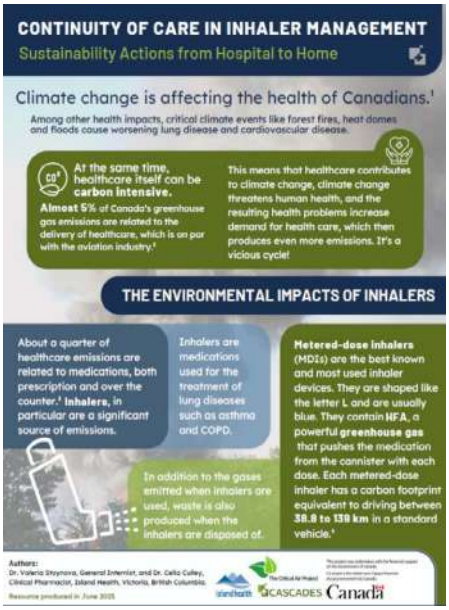
The Critical Air Project is a quality improvement initiative led by Dr. Valerie Stoynova and Dr. Celia Culley that identifies opportunities to reduce inhaler-related GHG emissions in the inpatient setting by combatting inhaler waste and loss. A three-pronged approach involving key interest holders across Island Health departments, in collaboration with CASCADES and Environment and Climate Change Canada, was adopted to understand the case for change before enacting a shift in policy (e.g., drug formulary listing, medication discharge procedure) and operations. The program is rolling out through an education campaign to interest holders responsible for delivering patient care.

Environmentally Sustainable Kidney Care (ESKC)

ESKC has been identified as a key focus area due to the adverse impact of treatments, including kidney replacement therapies, on climate change, which in turn impacts health outcomes and vulnerabilities for people living with kidney disease.[32] Dr. Caroline Stigant of Island Health advocates for a patient-centred approach that simultaneously promotes climate mitigation and adaptation practice, and is involved in efforts provincially (BC Renal's Planetary Health Working Group), nationally (the Canadian Society of Nephrology's Sustainable Nephrology Action Planning committee), and internationally (the International Society of Nephrology's Global Environmental Evolution in Nephrology and Kidney Care 'GREEN-K' initiative). GREEN-K endorses "sustainable kidney care for a healthy planet and healthy kidneys" through education, procurement, infrastructure and innovation, and sustainable clinical pathways. These initiatives have potential to produce significant health benefits for patients, as well as improve health quality and cost.

Environmental Sustainability Program

Inspired by the Climate Change Accountability Act, which holds public sector organizations (PSOs) to account for greenhouse gas emissions from buildings, vehicles and paper purchases, the Environmental Sustainability Program aims to understand the holistic emissions profile of Island Health's operations. Project outcomes include improvements in the reporting and transparency of emissions beyond the mandated reporting categories of buildings, paper and fleet, while the results will inform subsequent climate change action and the prioritization of projects by Island Health. Waste reduction has been identified as a critical factor for cutting emissions, resulting in the Nitrous Oxide project, a pilot to reduce nitrous oxide waste at VGH. Other initiatives to minimize waste include the Hand Sanitizer Donation project, which has led to the donation of hand sanitizer from RJH to 50 community-based organizations.



Climate Change and Health Community Gathering in Nanaimo [44]

Empowering, collaborative, embracing and inclusive were words used to describe this two-day event in January 2024. Co-hosted by Snuneymuxw First Nation and Island Health, the gathering brought together 170 intergenerational attendees from Indigenous communities, municipalities and the health authority to share their stories, programs, projects and experiences related to climate action. The event recognized the importance of intergenerational collaboration and insight by incorporating the traditional knowledge of Elders and involving youths as the next stewards of the land. The importance of connection to each other and to the land was a key theme for developing a shared path that embraces the value of Indigenous knowledge and Western science to foster climate change resilience.

Regional Laundry Bag MESH Initiative

As part of a provincial-wide strategy aimed at reducing the consumption of single-use plastics, the Regional Laundry Bag MESH initiative aims to eliminate the usage of single-use plastic for bags transporting clean linen in favour of mesh bags. This is a great example of how the sharing of best practice and collaboration across B.C. health authorities can drive the replication of high-impact sustainability initiatives. The initiative also supports the realization of health co-benefits for staff since compact packaging is easier to handle with lower potential for injury. This vital work for reducing single-use plastic consumption further complements Island Health's suspension of single-use plastic cutlery, foodservice ware and stir sticks.

Waste Management Initiatives in Public Spaces

Led by the Utilization and Resource Team within General Support Services, various waste management solutions are being piloted and implemented throughout the community with potential for broader adoption across the Island. Soft plastics are especially difficult to recycle because of the diversity of plastics used and their frequent contamination, and large quantities end up in landfills. Collaborative efforts to divert plastic products from landfills include initiatives between Island Health, PHSA and Vitacore to promote the recycling of PPE, and promotional posters and signage to prevent recycling contamination. Initial assessments and waste audits will also provide valuable insights into waste disposal practices and waste segregation knowledge, identifying further opportunities for improvement in waste intensity and diversion rates. Expansion of organizational Goal 22—"Achieve GHG Emissions Target & Increase Waste Diversion to Mitigate Climate Impact"—endorses our commitment to waste diversion as a key priority alongside Island Health's greenhouse gas emissions target.

Establishment of a New Environmental Sustainability Hub

The online hub on Island Health's intranet has been established in recognition of the work that has already been undertaken and progress made to support climate action and environmental sustainability. This hub intends to support environmentally responsible operations and care services. This best practice forum embraces the principles of collaboration and innovation by connecting staff through best-in-class guides and the provision of toolkits to support the seamless implementation of environmental initiatives across local sites.

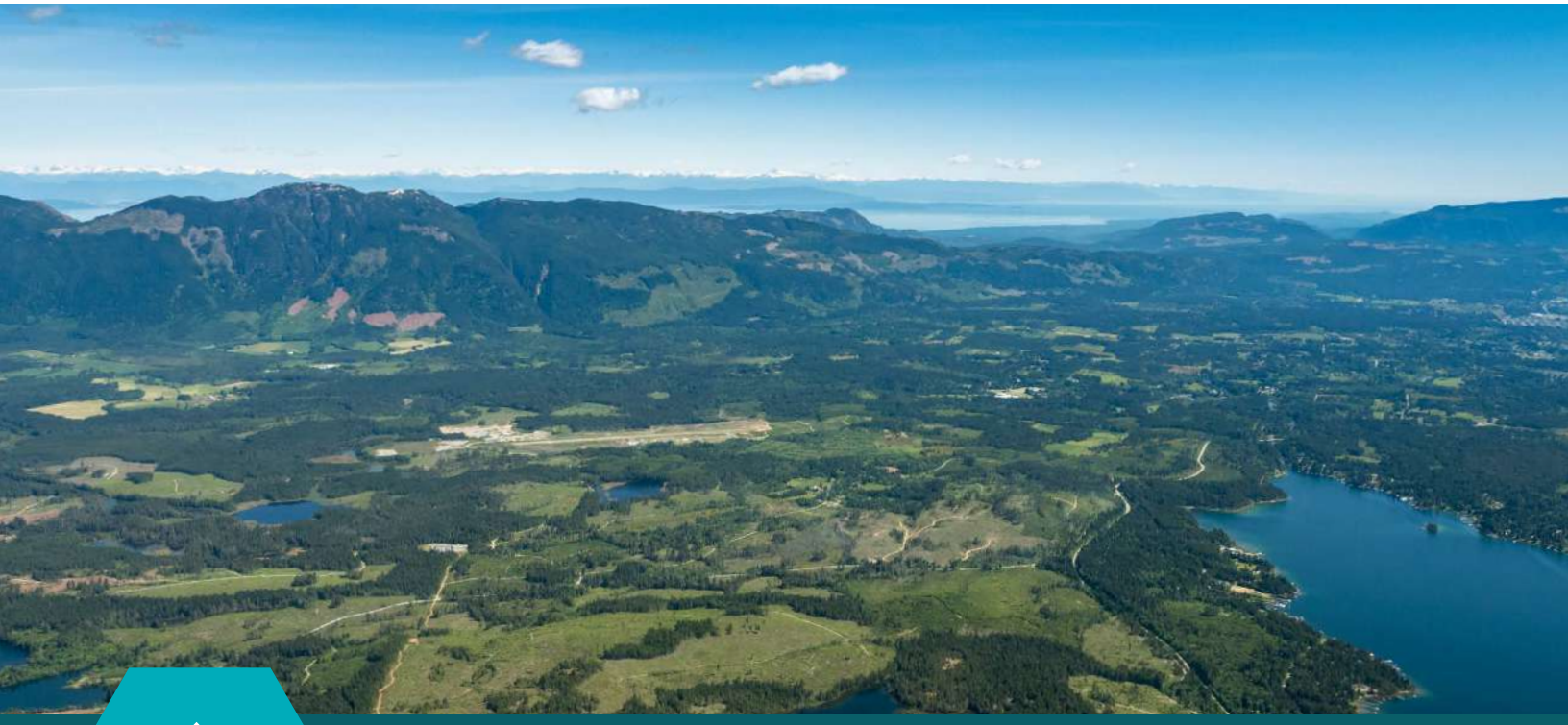
Climate Change & Planetary Health Strategic Framing

Based on the research, engagement and context provided above, the Climate Change and Planetary Health Steering Committee has identified the following priorities and strategies.

The four priorities align with Island Health's Strategic Framework Pillars (1. Services; 2. People; 3. Infrastructure; 4. Communities), and were derived from several sources, including:

- Provincial initiatives and requirements that Island Health supports and aligns with;
- Key projects and efforts Island Health is prioritizing and already leading;
- New suggestions for consideration, based on the research, engagement and surveying that has supported the development of this strategy.

The section on the next page features the overall strategic framing for the *Climate Change and Planetary Health Strategy*. These strategies and related actions will form the basis for Island Health's integrated approach to address climate change and planetary health, and will be tracked and monitored by the Climate Change and Planetary Health Steering Committee on an ongoing basis.



Strategic Framing for Climate Change and Planetary Health Strategies

VISION	*A climate-resilient health system that demonstrates excellence in sustainability and upholds its responsibility to planetary health.*			
MISSION	*Empower people, staff and communities to foster planetary health and build climate resilience within the health-care system and through community partnerships.*			
PRIORITIES	**1.** Improve the climate resiliency, adaptability and environmental sustainability of our health-care services	**2.** Create a culture of coordinated and effective climate action	**3.** Build sustainable and climate-resilient health-care infrastructure and operations	**4.** Build a shared path with partners and communities toward climate resilience
STRATEGIES	**1.1** Embed a planetary health lens into all decision-making throughout operations and clinical care	**2.1** Lead the development of a sustainable health system that prioritizes planetary health and is prepared for climate change	**3.1** Reduce climate vulnerabilities in all infrastructure	**4.1** Identify, initiate and foster partnerships and shared paths with local governments, non-profits and Indigenous communities toward climate resilience
	1.2 Improve and optimize climate-resilience in all health-care services	**2.2** Inspire and promote planetary health- and climate-informed practices (both clinical and operational)	**3.2** Reduce GHG emissions toward net zero operations and reduce toxic waste disposal	**4.2** Develop mechanisms to strengthen community health, planetary health and climate resilience
	1.3 Nurture partnerships and demonstrate leadership to ensure climate-resilient, community-based services	**2.3** Support and champion staff-led climate action and planetary health leadership/ activities	**3.3** Require more efficient resource use and decrease waste	**4.3** Strengthen community emergency preparedness and climate resilience through targeted efforts
	1.4 Strengthen Island Health's emergency preparedness and climate resilience	**2.4** Develop staff and medical staff education to drive and empower change for a climate-resilient and sustainable health system	**3.4** Develop internal and external partnerships to foster and facilitate climate mitigation within the health system	**4.4** Partner and collaborate with the provincial government to promote climate resilience- and planetary health-supporting policies

Conclusions & Next Steps

This strategy represents a commitment on the part of Island Health to take leadership on climate change and planetary health within our organization. It acknowledges the challenges facing patients, staff members, care providers and leaders, as well as the innovative approaches already being trialled in many parts of Island Health. By continuing to build an integrated and coordinated approach across the organization, Island Health will be in a stronger position to mitigate contributions to climate change and environmental degradation, as well as adapt to the changing climate in the communities we serve.

Based on the research and analysis done in this planning exercise, the following activities will be immediate next steps for the Steering Committee to start advancing the work outlined above.

Next Steps	Related Strategy
1. Establish the Climate Change and Planetary Health Steering Committee as a governance structure and accountability body that integrates streams of climate action on an ongoing basis.	Strategy 2.1
2. Monitor, track and report regularly through the Climate Change and Planetary Health Steering Committee on the progress being made against the priorities and strategies established in this process.	Strategy 2.1
3. Create a comprehensive communication strategy for climate change and planetary health to raise awareness of work being done and how individuals can contribute.	Strategy 2.3
4. Create an Environmental Sustainability Policy.	Strategy 3.3
5. Further develop internal and external partnerships to foster shared approaches to climate change mitigation.	Strategy 3.4

To support these next steps, the Steering Committee has begun the work to create a more detailed action plan for the priorities listed above to advance the overall strategy. This includes detailing specific activities for each of these next steps, along with accountable leads and time-bound action plans.

By building on these foundational next steps, Island Health will continue to foster a coordinated and organization-wide approach to climate change and planetary health in the future.

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