

Why BC's Climate Leadership Plan needs to include health

Climate change is already being observed in British Columbia (BC) with temperature and precipitation exceeding global averages and extreme events on the rise. Governments are responding by mitigation measures and efforts to increase adaptive capacity. Even with the strong evidence of changing climate in our province, the future impact of climate change on the health British Columbians is less clear. Fortunately, health is a high priority for people and government, but this priority is not reflected in the CLP.

Prominent health hazards of climate change for British Columbia

Health Hazard	Principal population impacted	Responsible sector and policy opportunity
Temperature: Increased impacts from heat events and other weather extremes	Urban (Vulnerable: seniors, young, low income), mental health disability	Early warning systems including community design and monitoring systems
Increased Ground level ozone, airborne allergens, particulate pollutants (range fires): Respiratory and cardiovascular illness due to air pollution, asthma or COPD exacerbation	Urban (Vulnerable: seniors, young, low income) Rural (Vulnerable airshed topography, dry conditions, deadwood)	Early warning, vehicle and point source pollution controls and public and alternative transit promotion, range fire management
Floods, heavy rainfall, sea-level rise, storm surge, landslide: Injury, drowning, loss of agricultural lands	Coastal, riverine and low lying communities, mental health disability	Research, improved prediction, warning and response
Extreme weather including drought and flooding, increased variability in precipitation: Increased food & water borne illness, reduced water & food security	All regions, those w/ mental health disability, low-income, rural	Research, disease surveillance, watershed protection, engineering, increased food and water security
Shift in infectious disease patterns: Bacterial and viral contamination, vector borne illness	All regions, those with immune-deficient states or chronic illness	Research, disease surveillance and monitoring of vectors and reservoirs
Social-ecological determinants of health: Indirect health effects from socio-economic changes displacement	Rural and remote, low-income, those w/ mental health disability	Prioritize adaptation strategies towards rural and remote communities, environmental migrants, other disadvantaged populations

For its share of BC's economy, the healthcare sector (last reported in 2012 at 7.1% of Real GDP, tied with BC's natural resources sector) makes major contributions to GHG production and therefore provides many mitigation opportunities. On the adaptive capacity side the healthcare

sector will bear a major part of the resilience demands as societal resources are stretched thin by the burden of environmental illnesses and an aging population.

We are beginning to see what the future with extreme weather looks like for our health after the 2015 summer of unprecedented fires, air pollution, high temperatures and drought. But our health monitoring systems are not well equipped to measure the near or long-term impacts of such events, much less the shifting infectious disease patterns, driven by climate that are predicted for the future. Water and food security are already sources of major tension around the world, but water security is also a BC problem. We have communities in BC without year-around water security issues. Hundreds of BC communities remain on boil water advisories and the temporary solutions are expensive include very carbon intensive transport. Many of our water storage systems are not adequately resilient to the future predicted for the province (see: <https://www.pacificclimate.org/analysis-tools/plan2adapt>). Building adaptive capacity into the water supply is often beyond the budgets of BC's most vulnerable communities. Provincial level leadership and resources are needed, but there will be many co-benefits to building such resiliency can be realized. These can be health related with reduced morbidity and mortality but also economic with infrastructure related jobs and capacity building in the well paid trades.

The co-benefits of GHG mitigation and improved community level resilience in public health reducing GHG pollution which couples with reduced particulate and ozone pollution to reduce cardio-vascular and respiratory disease risk is well documented. But there is little monitoring or longitudinal data available on the health impacts of other environmentally influenced illness and a dearth of information on what interventions might have the highest impact. How much GHG reduction can be coupled with improved access to chronic disease services by reducing in-person visits by using tele-medicine and other remote means? While individual health authorities are making progress on reducing the carbon footprint of their infrastructure, we don't yet measure these other aspects of healthcare delivery where savings can be realized.

Additionally, the climate leadership plan should include a better understanding of where in BC our most climate vulnerable communities are and what reprioritization of health resources may be needed to help address the accompanying future health impacts. Depending upon the locale, this may mean improved disaster prevention and response, better communication systems, food or water security or knowledge of where future climate migrants to BC can best be welcomed. Currently our climate change and health policy levers are underdeveloped. The climate leadership plan will need to help direct our resources and infrastructure to both build the evidence base that enables us to measure the multiple benefits of different interventions and to respond to uncertain threats by building overall resiliency. Intentional design in the public health sector is needed in the leadership plan in order to capitalize on opportunities to reduce GHG emissions and build adaptive capacity for effective preparations for the future.