



National Collaborating Centre  
for Determinants of Health

Centre de collaboration nationale  
des déterminants de la santé

## CLIMATE CHANGE RESILIENCE PART 1: COVID-19 UNDERSCORES THE NEED TO ADDRESS INEQUITY AND TRANSFORM SYSTEMS



This practice brief argues that our collective experience of the COVID-19 pandemic underscores the need for urgent and revised public health action to address climate change. The author shares equity-informed approaches for addressing climate change and building just, sustainable and resilient communities. Examples of concrete action are further explored in “Climate change resilience part 2: Public health roles and actions.”<sup>1</sup>

Please send any questions, comments and stories from the field to [NCCDH@stfx.ca](mailto:NCCDH@stfx.ca). For other NCCDH resources on climate change and health equity, visit the NCCDH [resource library](#).

## Introduction

*It would take an act of extreme cognitive dissonance to view the COVID-19 crisis as totally independent of the looming climate crisis, as well as the broader crisis of decades of economic globalization and ecological change, that surround it.*<sup>2(p1)</sup>

Climate change is a health emergency that continues to widen existing health inequities.<sup>2-10</sup>

Scientists warn that without massive global intervention within the next decade, the earth will continue to warm beyond 1.5 degrees Celsius.<sup>11</sup> Passing this threshold will be disastrous for both human and planetary health. This is because impacts such as extreme heat, rising sea levels, species loss and disruptions to the global food supply are projected to be significantly worse at higher levels of warming.<sup>9,11,12</sup>

Yet, because public health actors are constantly reacting to the “firehose” of challenges that comprise their everyday work — including responding to the COVID-19 pandemic — they are not able to devote sufficient attention to a global crisis that is unfolding at a slower rate.

This practice brief:

1. recognizes climate change as a health emergency with significant health equity impacts;
2. argues that our collective experience of the COVID-19 pandemic serves to galvanize multiple systems, including public health, to address climate change and social inequity with increased urgency and effort; and
3. identifies resources and recommendations for addressing inequities, transforming systems and building climate resilience.

## RELATED RESOURCES

- “Climate change and health equity” (2020)<sup>13</sup>
- *Think globally, act locally: Public health and the Anthropocene think piece* from the 2020 Public Health Summer School (2020)<sup>14</sup>
- World Resources Institute infographic showing climate impacts at 1.5°C and 2°C average global temperature change (2020)<sup>12</sup>

## COVID-19, like climate change, amplifies inequity

*Climate change and the pandemic share many of the same threat attributes: they are global; vulnerable populations bear more of the burden of their impacts; they cause widespread economic disruption; they diminish public health; they are threat multipliers; and their mitigation requires sound science to inform decision making. Such similarities mean that we should think about them in a similar manner.*<sup>4(p9)</sup>

The health impacts of the COVID-19 pandemic and climate change are widely recognized to disproportionately affect those who already experience structural disadvantage such as racism, colonialism and unfair economic structures.<sup>2-4,8,15</sup>

Beyond the risk of contracting COVID-19 and experiencing severe symptoms or even death from the virus, Canadians are facing social isolation, job losses, workplace safety issues, disruptions to education and childcare systems, and much more. People from racialized and low-income communities are at increased risk because they are more likely to work in essential positions where it is not possible to maintain

physical distance, and they are more likely to live in intergenerational households with older, vulnerable family members.<sup>15,16</sup> They are also more likely to live, work and play in areas with higher levels of air pollution<sup>3,17</sup> and, by extension, more likely to be affected by the association between long-term exposure to particulate matter (characteristic of air pollution) and COVID-19 mortality.<sup>4,17-21</sup> Finally, racialized and low-income communities are less likely to have access to green space, paid sick leave, childcare options during school closures, and a safe space to self-isolate after being exposed to the virus.<sup>15,16</sup>

#### RELATED RESOURCES

- [\*The Lancet Countdown on health and climate change: Policy brief for Canada\* \(2020\)<sup>3</sup>](#)
- [\*“Climate change glossary for public health practice: From vulnerability to climate justice”\* \(2020\)<sup>22</sup>](#)

The COVID-19 pandemic continues to take a severe toll on global and local health and economies. Yet it pales in comparison to the concurrent health, social and economic impacts projected in an increasingly warmer world. Already, Canadians are experiencing the physical and mental health impacts of climate change, including wildfires, floods, air pollution, extreme heat, allergies, tick-borne disease and, in the North, Arctic warming and changes to the availability of traditional foods.<sup>23</sup> With further warming, more damage is projected amidst an even more complex set of circumstances; global

populations will be forced to contend with multiple and concurrent crises, including:

- more frequent extreme weather;
- damage to personal and public infrastructure;
- displaced communities;
- compromised food and water systems; and
- the emergence and re-emergence of current and future infectious diseases.<sup>4,8</sup>

Like the COVID-19 pandemic, climate change is a threat multiplier, disproportionately affecting those who already experience structural disadvantage due to factors such as racism, colonialism and low income. Northern Indigenous communities, already dealing with the ongoing health impacts of colonization and residential schools, have had to rapidly adapt to an environment that is warming three times faster than the rest of Canada.<sup>10,23</sup>

Low-income communities have disproportionately felt the effects of extreme heat because they are less likely to have the resources to pay for air conditioning and more likely to live in densely populated urban heat islands without adequate tree cover.<sup>3,24</sup> What’s more, low-income and racialized communities are more likely to be exposed to air pollution and resulting respiratory illness.<sup>3,25</sup>

#### RELATED RESOURCES

- [\*The health equity impacts of a changing climate part 1: From assessment to action\* \(2021 webinar recording\)<sup>26</sup>](#)
- [\*The health equity impacts of a changing climate part 2: Communicating and change-making\* \(2021 webinar recording\)<sup>27</sup>](#)



**Scale of COVID-19 pandemic response can be viewed as a source of hope for climate change preparedness**

*Readiness is not just a concept, it's a capacity, a state of preparedness. For climate change it involves both prevention—doing everything possible locally to reduce carbon emissions—and protection—taking actions that reduce local vulnerability to climate hazards.* <sup>28(p13)</sup>

While both the COVID-19 pandemic and the climate crisis are health emergencies that affect multiple systems and disproportionately affect those who are most vulnerable, they have been met with quite different responses. Because of the speed with which it spreads, causes harm and disrupts health, food and economic systems, COVID-19 has been treated with a level of urgency that matches its gravity.<sup>28</sup> Governments across the world have declared states of emergency, released special funds, announced and enforced lockdowns, convened advisory committees and invested in scientific investigation, collaboration and innovation as well as rapid vaccine development,

approval, production and provision. In Canada, new policies (e.g., income assistance) and ways of operating (e.g., remote work, virtual meetings and conferences) have been rolled out with unprecedented speed, confirming that political will is an important driver of significant system change.

In contrast, governments have largely viewed the impending climate crisis as slow moving and therefore not a significant threat. As a result, they have not responded with the speed and scale necessary to prevent catastrophic levels of warming, to adapt to the projected future and to address the inequities that drive climate-related vulnerability and risk. The massive scale of the COVID-19 pandemic response required collaboration across multiple sectors and systems. The spotlight it has shone on social inequality and health can be viewed as a source of hope. The fact that this level of response and change is possible has implications for whole-of-system action needed to address climate change and for increased investments in public health to contribute to this effort.



## COVID-19 experience highlights the importance of preparing for future shocks

*The COVID-19 pandemic has demonstrated the complexities of responding to a global public health crisis. It has shown the power of collaboration and the commitment of Canadians united to control the virus. It has also shown the interconnectedness of our health, social, and economic policies and supports. How these sectors work together, with the engagement of civil society and communities, will influence our success against COVID-19 resurgences and help to mitigate the impacts of future health emergencies. We are at a watershed moment. By working together, we can move from risk to resilience.*<sup>15(p62)</sup>

In her 2020 annual report,<sup>15</sup> Chief Public Health Officer Dr. Theresa Tam proposes that taking a health equity approach to the COVID-19 pandemic will build resilience for future health emergencies. Dr. Tam names three broad, cross-cutting actions to address inequity and allow Canada to absorb and recover from the shocks of future public health emergencies: (1) leadership and governance for structural change, (2) harnessing social cohesion and (3) strengthening public health capacity across Canada.

Dr. Tam also discusses new ways of living and working that will protect Canadians from future emergencies. These include:

- Action to address the structural, social and ecological determinants of health. This includes reducing stigma and discrimination and working in key areas such as:
  - » economic security and employment;
  - » housing and the built environment;
  - » health, education and social service systems; and
  - » environmental sustainability.
- Building stronger infrastructure for:
  - » collecting and using data;
  - » actively engaging with communities and across sectors for good governance; and
  - » communicating and coordinating at all levels.

Dr. Tam's recommendations resonate when considered in the context of building resilience to climate change, the "greatest threat to global health in the 21st century."<sup>29</sup> A climate-resilient society is one in which people, communities and systems can transform to a better, new normal where everyone can thrive.<sup>4,22</sup>

## Recommendations for transformation and resilience

In recovering from the COVID-19 pandemic and preparing for the health impacts of climate change, the public health community can draw from additional recommendations to address inequity, promote sustainability and build resilience at multiple levels. Select examples are listed below.



In *A radical revision of the public health response to environmental crisis in a warming world: Contributions of Indigenous knowledges and Indigenous feminist perspectives*,<sup>6</sup> the

authors describe “how public health policy and discourse fails Indigenous peoples living in the colonial nation states of Canada and Aotearoa New Zealand.”<sup>6(p2)</sup> They make the important connection between colonial systems and practices and the circumstances that brought about anthropogenic (human-caused) climate change. They identify how the impacts of climate change on Indigenous peoples are experienced as continued and intensified colonization. They note that one of the ways this takes place is through the exclusion of highly relevant Indigenous knowledges, including Indigenous female scholarship and leadership, from climate change research and action. They call for Indigenous knowledges, which are grounded in the interconnections between humans and nature, to be centred moving forward. Arguing to both minimize carbon emissions and decolonize public health, the authors identify the need for systems transformation in which dominant understandings of social determinants of health, ecological determinants of health and core competencies for public health are disrupted and revised.



The 2020 *Lancet Countdown on health and climate change: Policy brief for Canada*<sup>3</sup> focuses on addressing extreme heat and air pollution and ensuring a healthy, just and green

recovery from COVID-19. The authors note that “Canada must build resilience, equity and solidarity across groups, prioritising Indigenous peoples and other communities most at risk.”<sup>3(p7)</sup> They recommend that policy-makers:

- » retrofit existing infrastructure and design communities to protect at-risk groups;
- » mobilize land-based, Indigenous-led adaptation approaches;
- » support sustainable housing;
- » fund public and active transportation efforts, and target marginalized communities who will benefit the most;
- » strengthen the resilience of the health system to climate change; and
- » promote a healthy recovery from COVID-19 that includes:
  - ◇ transitioning to an equitable, carbon-neutral society;
  - ◇ applying a justice lens to all policies that address the climate and COVID-19 crisis; and
  - ◇ collaborating with disproportionately affected and marginalized groups.

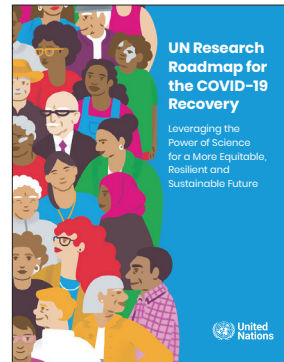


In *Climate of crisis: How cities can use climate action to close the equity gap, drive economic recovery, and improve public health*<sup>4</sup> the authors consider how cities can best react

to the stress brought about by COVID-19, economic recession, social protests of racial violence, and the ongoing need to address climate change. They urge local actors to treat climate change with the same level of urgency as they have the pandemic, and recommend that decision-makers prioritize equity for resilient cities. In planning for resilience, the authors also recommend sharing power with marginalized communities through collaborative governance models and applying systems-thinking across traditionally siloed portfolios (e.g., parks, racial equity, housing, climate, emergency preparedness, health). The report identifies specific areas of focus, advising cities to do the following:

- » Close the digital divide for socially vulnerable populations.
- » Ensure access to healthy, affordable food.
- » Invest in urban development that supports walking, cycling, affordable housing, public transit and access to local employment and services.
- » Transition to clean energy.
- » Assess the multiple benefits of green spaces, promote greening initiatives and avoid ecological gentrification (i.e., when the wealthy move into newly greened communities and cause an increase in property values, often forcing previous neighbourhood residents to leave).

- » Reduce plastic waste and communicate the health impacts of plastic waste.
- » Address the health equity impacts of increased telework (working from home offices).
- » Prioritize equity in COVID-19 pandemic recovery and in climate change action (e.g., racial equity in policy design and implementation; a living wage for all; reduced exposure of racialized communities to air pollution, extreme heat and hazardous waste facilities).



The *UN research roadmap for the COVID-19 recovery*<sup>30</sup> recognizes the interdependence of people, systems and generations, and the need to prioritize equity, resilience and

sustainability in COVID-19 pandemic recovery efforts. The research roadmap both analyzes and conveys what the world needs to know in order to build back better from COVID-19, including preparing for and adapting to climate change. A series of research questions is presented about the best way to address root causes of health inequities, build social cohesion, protect interconnected systems from experiencing shocks during health emergencies, and invest in healthy communities. Taken together, the questions reflect “the need for research to advance gender equity, engage marginalized populations, ensure decent work, prevent a digital divide, tackle ‘One Health’ intersectoral challenges, and inform global governance reforms.”<sup>30(p9)</sup>

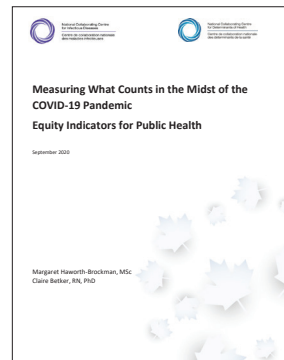


In *Preparing for the future of public health: Ecological determinants of health and the call for an eco-social approach to public health education*,<sup>31</sup>

the authors recommend that

public health actors be trained to think and act differently to prepare for a world characterized by massive ecological changes, including climate change. They argue that public health practitioners should be taught to conceptualize health holistically and learn from the expertise of Indigenous communities, particularly regarding the interactions between the ecological, social and economic factors that influence health. The authors stress the importance of transformative change, writing:

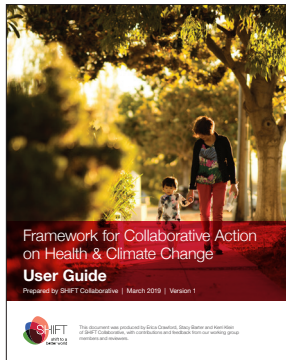
Resilience in the face of mounting uncertainty and accelerating change involves more than the capacity to bounce back, instead valuing the capacity to embrace change and bounce forward into new ways of seeing and doing (what some call transformative resilience, or transilience), drawing on change processes that are deeply collaborative and emergent, rather than command and control.<sup>31(p63)</sup>



In *Measuring what counts in the midst of the COVID-19 pandemic: Equity indicators for public health*,<sup>32</sup> the authors recommend that the resilience and emergency

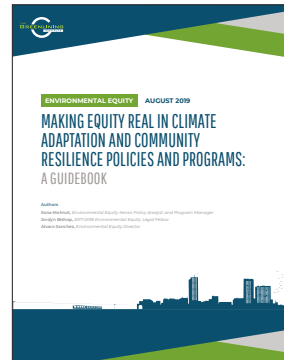
preparedness of the public health system be measured with a stronger equity focus. The authors deepen an existing framework — one that views each emergency as taking place within a complex adaptive system — with prompts, or questions, associated with 67 indicators. Each question guides health system actors to consider inequity and disadvantage at each step of emergency preparedness, response and recovery. Public health actors could ask themselves these same questions to gauge their preparedness for the multiple — and often converging — health emergencies associated with climate change, including wildfires, flooding, extreme heat events, infectious diseases, increased air pollution and more.





The *Framework for collaborative action on health and climate change*<sup>33</sup> is driven by a vision of minimizing greenhouse gas emissions, adapting to change, building community resilience

and collaboratively transforming social and economic systems for enhanced equity. The framework's guiding principles include — but are not limited to — Indigenous rights and reconciliation, systems-thinking and maximizing actions that have simultaneous benefits in multiple domains (e.g., making cities more walkable). The guide details eight key action areas and names specific ways to bring each of these action areas to life. For example, to promote inclusion, health equity and climate justice, the authors ask, “How can we respond to climate change in ways that transform economic and social systems to increase equity, fairness and quality of life for all?”<sup>33(p18)</sup> Collaborative actions are identified, such as conducting an equity-focused climate change and health vulnerability assessment and applying an equity lens to climate change policies.



*Making equity real in climate adaptation and community resilience policies and programs: A guidebook*<sup>34</sup> identifies concrete opportunities to operationalize social

equity in climate change policies and programs, including several useful case examples. The authors guide users to consider the unjust systems that can drive climate-related vulnerability and to engage in four steps to operationalize equity in climate preparedness activities:

1. Embed equity in the mission, vision and values or policies and programs.
2. Deeply engage community members and build equity into each stage of development and implementation.
3. Ensure that the implementation of the policy or program improves equity.
4. Regularly conduct equity-focused evaluation to inform ongoing efforts.

One of the guidebook's authors, Sona Mohnot, gave a presentation on the resource in the NCCDH's first webinar on the health equity impacts of a changing climate<sup>26</sup> (see [recording here](#)).

## Conclusion

Addressing the inequitable health impacts of climate change is, without doubt, a tremendous challenge for the public health community. This challenge is amplified during a time when the public health system's limited resources are being stretched by the COVID-19 pandemic response.

However, as Canadians anticipate the mass distribution of vaccines and the easing of various restrictions, public health actors have an unprecedented opportunity to align with and engage in the growing movement for a green and just COVID-19 pandemic recovery.<sup>35-42</sup> Such a recovery could secure needed investments to address inequity and build a more sustainable future — one where everyone could thrive.

Specific ways for public health actors to contribute to equitable and sustainable climate-resilient communities are detailed in "Climate change resilience part 2: Public health roles and actions."<sup>1</sup> This second practice brief outlines opportunities for Canadian public health actors to build on existing work, integrate the recommendations summarized above and accelerate a collaborative, equity-focused response to the climate crisis.

### RELATED RESOURCES FOR A GREEN AND JUST COVID-19 PANDEMIC RECOVERY:

- [\*A feminist economic recovery plan for Canada: making the economy work for everyone\*](#)<sup>36</sup>
- [\*Alternative federal budget recovery plan\*](#)<sup>37</sup>

### FROM THE CANADIAN PUBLIC HEALTH ASSOCIATION

- [\*Active travel background document\*](#) [2021]<sup>39</sup>
- [\*Public transit background document\*](#) [2021]<sup>40</sup>
- [\*Zero-emission vehicles background document\*](#) [2021]<sup>41</sup>
- [\*Building retrofits background document\*](#) [2021]<sup>42</sup>

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