

Developing Evidence-Based Health Policy in a Changing Climate

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This article outlines the research and societal supports necessary to ensure that evidence-based climate adaptation policy to protect society's most vulnerable members is developed in a comprehensive and timely manner.

Keywords

Climate change; Equity; Public health

Lately, I've been thinking about whether public health agencies in urban areas are prepared for climate change. I work in a team that does research, policy development, and advocacy on public health issues for one of Canada's biggest cities, and climate change is one of my "files." Part of my job is to think about what climate change means for the health of our populations, how we can develop resilience within our communities, and what we need to do to be more prepared for the extreme weather events that are probably going to become more common.

For example, new research predicts that by 2049, Toronto residents will experience five times as many heat waves each summer as they do now, and that the average annual temperature will increase by 4.4 degrees (Toronto Environment Office, 2013). No climate model is perfect, but even if this one has overshot in its predictions, we are still likely to be in for some very hot weather. In a city where heat already contributes to an

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average of 120 premature deaths each year, and more in years when the weather is especially hot (Pengelly et al., 2007), this could be a big problem.

The literature also tells us that climate change could worsen air quality, leading to respiratory and cardiovascular health impacts. It could enable disease vectors such as ticks, mosquitoes, and rodents to survive winters farther and farther north, expanding the range of the illnesses they carry. We may see more illnesses from food and water contamination, we might deal with a longer allergy season, and more frequent severe flooding is expected to increase basement mould that contributes to respiratory problems (Epstein, 2005; Health Canada, 2008; McMichael, Woodruff, & Hales, 2006; Natural Resources Canada, 2008; Shea, Truckner, Weber, & Peden, 2008). Such predictions are developed based on excellent, rigorous scientific findings from across the country and around the world. Unfortunately, these findings are not yet enough to support the development and implementation of new policies to protect the health of our populations from climate change.

Why? A big stumbling block is the public debate about whether climate change is really even happening. Even though the vast majority of scientists agree that it is a real phenomenon, a few well-financed special interest groups and clever climate deniers have managed to inject just enough doubt into the public consciousness to prevent bold action on the climate front. Climate change is a clear illustration that the scientific community is not always able to effectively communicate a true weight of evidence to the public, to decision-makers, and to critical stakeholders.

For those of us in the scientific community, the voting public's lack of awareness of a body of evidence that we treat as fundamental to our work is intensely frustrating. In public health, this lack of awareness also applies to what we call the "determinants of health": evidence seems clear that less advantaged populations are likely to have poorer health outcomes. Typically, this health result flows from overlapping challenges arising from factors such as less income, lower resources, and lower education. Yet large swaths of the population seem to believe that bad health is mainly a function of people's bad behaviour (e.g., diet, exercise) and that individuals are to blame if they get sick.

One of the reasons I am passionate about both public health and climate change issues is because of exactly this systemic, societal unfairness. There is no doubt that we will all be affected by climate change, but some people in our communities who are already more vulnerable to stressors of any kind will experience the effects more keenly. There are many people who cannot speak for themselves or take actions to protect themselves and their families, because they lack either knowledge, power, or resources. These groups include the elderly, lower-income people, people who live in substandard housing, homeless or underhoused populations, people who are disabled or already ill, and people who are socially isolated. These are the people who will be most affected by severe weather events that damage their homes and belongings, prevent them from getting to work or to their health care providers, or limit their access to food and services. On the climate issue, and others, we as a society need to find ways to value research that considers issues of equity and to encourage researchers to consider accessibility for all when developing solutions to the challenges faced by our communities.

Another challenge facing policymakers interested in increasing community resilience to climate change has been a collective societal refusal, until recently, to even consider climate adaptation as a viable policy option. When I speak with the public I still encounter the conviction that exploring ways to be prepared for climate change means we have, as a society, given up on stemming the climate problem at the source by curbing our emissions. An undercurrent to these conversations is that we as a society are unwilling to “do the right thing” and give up our consumerist ways in order to save our planet. People are reluctant to accept that their world is changing, even when the evidence is there, even when risk reduction measures could prevent harm and suffering. This reluctance is another demonstration that applying rigour in scientific activities and developing a strong evidence base may not be sufficient to enable policy shift.

Understanding equity issues may be one way to help scientists tell a story and explain why their research matters. Yet, sadly, Canadians’ ability to connect physical and social factors that influence vulnerability to climate risks, and our capacity to track trends over time, were dealt a severe blow by the 2010 elimination of the long-form census. Freeing up access to the data that does exist is also crucial to supporting efficient, timely research. The data needed to enable comprehensive climate and health vulnerability assessments could span issues of demographics, features of the natural and built environment, epidemiology, floodplain mapping, air quality, vector-borne disease, food security, and more. Researchers are more likely to make use of existing data when they can avoid expensive or lengthy processes to acquire it. In the public health sector, gaining access to data does pose a challenge: legislation such as Ontario’s *Municipal Freedom of Information and Protection of Privacy Act* and the *Personal Health Information Protection Act* restrict use of personal information, as they should. However, the amount of administrative work involved in understanding and meeting these legal obligations is enough to make even the most passionate researcher think twice about carrying out high-resolution GIS mapping of any health data. Governments and researchers need to work together to find ways to protect people’s privacy without prohibiting health research that has any degree of data resolution.

One example of the kind of compelling research that has been used to argue for climate-related policy and programming changes include burden of illness studies that quantify the impact of a health risk for a population. Another example is documenting and reporting on new cases of disease, such as West Nile virus and Lyme disease, that were previously uncommon in a given area. When people can connect research findings to their daily lives and daily experiences, they pay attention; they understand the implications. And ultimately, they are more likely to support a policy based on this evidence.

Helping people connect science to their personal experiences can be an important function of collaborative research, which may involve non-academic partners. Research that involves policymakers, the communities they serve, and other stakeholders is most likely to recognize and respond to the real needs of communities, while building relevant scientific capacity in those communities. Collaborative research also supports the development of a cross-disciplinary common language and understanding of the evidence and the challenges related to developing evidence-based climate change adaptation strategies.

Such collaborations could also foster all kinds of innovative and appealing new ideas. An ongoing challenge in implementing adaptation policy to promote good health is understanding the links along the complex pathway from an extreme weather event that causes some type of infrastructure damage to a diverse set of potential short- and long-term health implications. As in many other challenges facing society, progress on preparing for climate change will require building bridges across many disciplines.

Research funding models need to foster unusual alliances and step beyond simply documenting that “users” value research through letters of support. Funders should support users and stakeholders of all types as active participants in research projects, from project development to interpretation of findings. This could help improve science literacy across sectors – including the public sector – while ensuring that funds are directed toward projects that matter.

It is critically important that the research community support improved scientific literacy for the public and across key sectors that influence our economic, physical, and social environments – but we also have a duty to be policy literate. Training for young scientists should assist them in understanding how policy is developed and how policymakers weigh scientific evidence and other significant drivers of policy, such as stakeholder views, economic considerations, community needs, and political will. Young scientists also need training in how to communicate clearly and be articulate and informative. This may mean media training, clear language and communications training, and training in new ways of communicating information, such as social media. Publication of peer-reviewed articles in journals may still be the mark of success within the academic community, but they may not be the most effective way to reach broader audiences who influence and develop policy. Perhaps the time has come for academic institutions to review their reward structures for tenureship: to ensure that young scientists learn how to reach people – especially people without scientific training – and explain why their research matters.

Encouragingly, a 2012 study suggests that 86% of Canadians now believe the climate is changing, and that human activities play a role (Canadian Press, 2012). Why have public perceptions shifted? Part of this may be about clever communication; maybe the shift is because big names such as Al Gore got in on the conversation. Or perhaps the sheer weight of mounting evidence emerging from credible, international agencies such as the Intergovernmental Panel on Climate Change (IPCC) is finally starting to overcome those doubts. Globally, the numbers of extreme weather events are increasing, so perhaps personal experience plays a role too. Recent flooding in Alberta and our own record-breaking rainstorm in Toronto this past July mean people are thinking more about the ramifications of extreme weather, but there still seems to be no good way to assess how much of a priority climate change adaptation should be, and what we should be doing to prevent health impacts related to climate change.

The science I do is important because climate change will affect everyone, but it will have the most impact on people who are already vulnerable. As researchers and policymakers we have an ethical duty to act, to ensure that we are prepared for extremes in weather, and that our adaptation efforts do not widen the equity gap. Communities across the country are already implementing plans and programs that we

know will support community resilience during extreme heat events, because these plans and programs are based on evidence. For other potential climate impacts, the best path forward may be less clear, but it is not impossible. As researchers and policymakers, we can build the evidence to establish the key climate impacts on health; we can develop a case that the issue of climate change is of critical importance for action; and we can test strategies to prevent harm from extreme weather events and creeping climate changes. By working across disciplines and by developing partnerships, we can share what we learn and build innovative solutions.

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