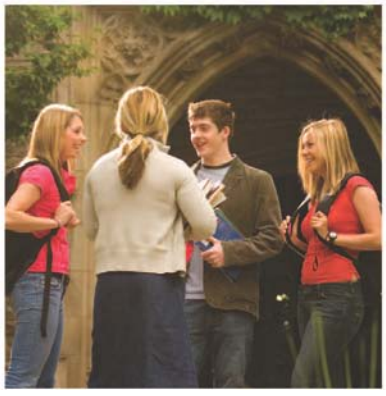
McMaster University

McMaster HEALTH FORUM

ISSUE BRIEF

ADDRESSING HEALTH AND EMERGING GLOBAL ISSUES IN CANADA



12 MAY 2011

EVIDENCE >> INSIGHT >> ACTION

Issue Brief:
Addressing Health and Emerging Global Issues in Canada

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McMaster Health Forum

For concerned citizens and influential thinkers and doers, the McMaster Health Forum strives to be a leading hub for improving health outcomes through collective problem solving. Operating at the regional/provincial level and at national levels, the Forum harnesses information, convenes stakeholders, and prepares action-oriented leaders to meet pressing health issues creatively. The Forum acts as an agent of change by empowering stakeholders to set agendas, take well-considered actions, and communicate the rationale for actions effectively.

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Conflict of interest

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Merit review

The issue brief was reviewed by a small number of policymakers, stakeholders and/or researchers in order to ensure its scientific rigour and policy relevance.

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KEY MESSAGES

What's the problem?

- The overarching problem is that globalization has eroded the protective effect that national borders once offered to the health of Canadians and that responses to these erosions have not always been commensurate with current and possible future challenges. This problem can be understood by considering two sets of issues:
  - a number of emerging global issues can affect the health of Canadians, including:
    - people are increasingly mobile and travel over longer distances than ever before,
    - cross-border trade of goods, services and investments has reached unprecedented levels,
    - agriculture is increasingly a single worldwide integrated market with food sourced globally,
    - damage to the environment and depletion of its resources is occurring at increasing speeds,
    - information and communication technology lets people connect across vast distances, and
    - issues are increasingly addressed through international law, regulations and standards; and
  - a lack of collaboration across traditional divides complicates efforts to identify and address these issues.

What do we know about three viable options to address the problem?

- Option 1 – Support mutual learning across sectors
  - Pursuing this option may help facilitate collaborative problem-identification and problem-solving, enhance capacity for multi-sectoral work, and inform action with the widest possible perspective.
- Option 2 – Coordinate government action and provide a framework for stakeholder action
  - Pursuing this option may help foster collaboration across all of government and integrate these efforts with those of Canada's civil society organizations and academic institutions.
- Option 3 – Undertake new initiatives that provide value for money
  - Pursuing this option may help to directly address the health implications of emerging global issues and attract new resources to them, including those not typically addressed by health decision-makers.
- We did not find any systematic reviews that addressed any of these three options.
- This review of three viable options informs our understanding of emerging global issues in at least three ways. First, there is much that remains to be learned about how emerging global issues actually affect the health of Canadians, and much of this learning could best be supported through cross-sectoral collaborative processes. Second, the emerging global issues facing Canadians do not necessarily need to be identified and addressed with new resources, but rather through a reorganization of how these issues are currently handled. Third, a key challenge going forward will be to develop a framework that facilitates both periodic and dynamic identification of new global risks to ensure that decisions and actions are informed by the highest quality and most relevant research evidence available at the time.

What implementation considerations need to be kept in mind?

- A number of potential challenges may be faced in trying to pursue one or more of the options – or may surface later – at the level of each of citizens, professionals, organizations and systems.
- Strategies that can be pursued to help address some of the potential barriers to implementing the three options include: 1) engaging non-health sectors; 2) clearly articulating the value-for-money proposition; and 3) communicating the benefits of the preferred option(s) to Canadians.
- This review of implementation considerations can affect our understanding of emerging global issues in three ways. First, with the First Ministers' Accord on Health Care Renewal set to expire in 2014, Canadians need to know that a strengthened health system is just one key component of an investment in their health. Second, with sector specialists having the best grasp of emerging global issues, Canada needs a dynamic approach to risk identification and management that engages them proactively. Third, with the scale and complexity involved in emerging global issues, working 'across government' on risk identification and management has become essential.

REPORT

An increasing number of global issues have emerged as key determinants of health. Governments around the world are recognizing the importance of considering and acting upon these global issues as a way to protect and improve the health of their citizens. Specifically, these governments have started to respond to this challenge by integrating national leadership across the health and 'non-health' spheres (5) and investing heavily in the 'architecture' and domestic partnerships necessary to support them (6-13). Some have also promised enhanced contributions to broader global health with the view that the absence of health in one part of the world affects the health of people everywhere (7). Indeed, research suggests that such national investments in global health efforts may not only contribute to sustainable development, trade, human rights, humanitarian relief work and global security, but also work to enhance the health of the investor's own citizens (14-19).

The health of Canadians thus depends on the ability of government and stakeholders to effectively address various global issues originating outside of Canada before they hit Canadian soil. The federal government has recently taken a key step in responding to this challenge. It commissioned researchers to:

- review emerging issues and trends affecting global health, which we drew on in writing the next section of this issue brief (4);
- review select issues related to this broader agenda, including:
  - private sector capacities, which link to issue 2 in the next section (20);
  - intellectual property issues, which link to issues 2 and 6 in the next section (21, 22);
  - food security issues, which link to issue 3 in the next section (23);
  - issues related to the global health governance agenda, which link to issue 6 (24); and
- review the case for a global health strategy for Canada (25, 26).

Canada, a current leader in health, has not yet taken a deliberate and inclusive approach to considering the available research evidence on, and engaging stakeholders about, the risks and opportunities that changes in or the emergence of global issues pose to the health of Canadians. Unlike peer governments, the Canadian federal government has also not yet considered and engaged stakeholders on the numerous options the

Box 1: Background to the issue brief

This issue brief mobilizes both global and local research evidence about a problem, three options for addressing the problem, and key implementation considerations. Whenever possible, the issue brief summarizes research evidence drawn from systematic reviews of the research literature and occasionally from single research studies. A systematic review is a summary of studies addressing a clearly formulated question that uses systematic and explicit methods to identify, select and appraise research studies and to synthesize data from the included studies. The issue brief does not contain recommendations.

The preparation of the issue brief involved five steps:

1) convening a Steering Committee comprised of representatives from key stakeholder groups and the McMaster Health Forum;
2) developing and refining the terms of reference for an issue brief, particularly the framing of the problem and three viable options for addressing it, in consultation with the Steering Committee and a number of key informants, and with the aid of several conceptual frameworks that organize thinking about ways to approach the issue;
3) identifying, selecting, appraising and synthesizing relevant research evidence about the problem, options and implementation considerations;
4) drafting the issue brief in such a way as to present concisely and in accessible language the global and local research evidence; and
5) finalizing the issue brief based on the input of several merit reviewers.

The three options for addressing the problem were not designed to be mutually exclusive. They could be pursued simultaneously, or elements could be drawn from each option to create a new (fourth) option.

The issue brief was prepared to inform a stakeholder dialogue at which research evidence is one of many considerations. Participants' views and experiences and the tacit knowledge they bring to the issues at hand are also important inputs to the dialogue. One goal of the stakeholder dialogue is to spark insights – insights that can only come about when all of those who will be involved in or affected by future decisions about the issue can work through it together. A second goal of the stakeholder dialogue is to generate action by those who participate in the dialogue and by those who review the dialogue summary and the video interviews with dialogue participants.

country can pursue to address and take advantage of these emerging global issues.

This issue brief aims to help facilitate this process and inform decisions that can enhance the health of Canadians. First, this brief defines the problem as faced by Canadian government officials and stakeholders. In doing so, the brief builds on and extends previously commissioned work. Second, this brief discusses three options for addressing the problem, particularly insofar as these options shed further light on our understanding of the risks and opportunities identified in the first section. Finally, this brief concludes with a discussion of the implementation considerations for the three options and strategies to overcome them, again particularly insofar as these implementation considerations affect our understanding of the problem as defined in the first section.

While perhaps a narrower remit than some readers would prefer, at this time the Canadian federal government is particularly interested in understanding how emerging global issues affect the health of Canadians. Complementary perspectives are offered in the issue brief, but primarily as a way to shed further light on and respond to issues within this remit.

In drafting this issue brief, various domestic contextual factors were considered which influence the framing of the problem, assessments of options, and identification of implementation considerations. For example:

- Canada is the 'globalization nation' (27), with 19.8% of its population foreign-born who often maintain close ties to their birth countries (28);
- Canada's constitution grants authority over different aspects of health to the provincial and federal governments, resulting in split responsibility for health (but primarily provincial responsibility for healthcare) and a particular history of politics between these two levels of government; and
- the First Ministers' Accord on Health Care Renewal (29), negotiated in 2003, is set to expire in 2014, which may mean that a new framework or priorities for health system development is negotiated over the next three years.

There are also several global contextual factors that were similarly considered. For example:

- the last decade has witnessed unprecedented interest in global health among national governments, international organizations, civil society, industry and citizens;
- the recent global economic crisis has led to austerity measures in many countries and increased emphasis on restraint and value-for-money in investments; and
- there is greater awareness for 'distal' determinants of health (a subject to which we turn in the next section) and the strong likelihood that non-communicable diseases will overtake communicable diseases as the primary focus of global health efforts (1).

Box 2: Equity considerations

A problem may disproportionately affect some groups in society. The benefits, harms and costs of options to address the problem may vary across groups. Implementation considerations may also vary across groups.

One way to identify groups warranting particular attention is to use "PROGRESS," which is an acronym formed by the first letters of the following eight ways that can be used to describe groups†:

- place of residence (e.g., rural and remote populations);
- race/ethnicity/culture (e.g., First Nations and Inuit populations, immigrant populations, and linguistic minority populations);
- occupation or labour-market experiences more generally (e.g., those in "precarious work" arrangements);
- gender;
- religion;
- educational level (e.g., health literacy);
- socio-economic status (e.g., economically disadvantaged populations); and
- social capital/social exclusion.

The issue brief strives to address all citizens, but (where possible) it also gives particular attention to low-income Canadians. Many other groups warrant serious consideration as well (e.g., recent immigrants), and a similar approach could be adopted for any of them.

† The PROGRESS framework was developed by Tim Evans and Hilary Brown (Evans T, Brown H. Road traffic crashes: operationalizing equity in the context of health sector reform. *Injury Control and Safety Promotion* 2003;10(1-2): 11–12). It is being tested by the Cochrane Collaboration Health Equity Field as a means of evaluating the impact of interventions on health equity.

THE PROBLEM

The overarching problem is that globalization has eroded the protective effect that national borders once offered to the health of Canadians and that responses to these erosions have not always been commensurate with current and possible future challenges.

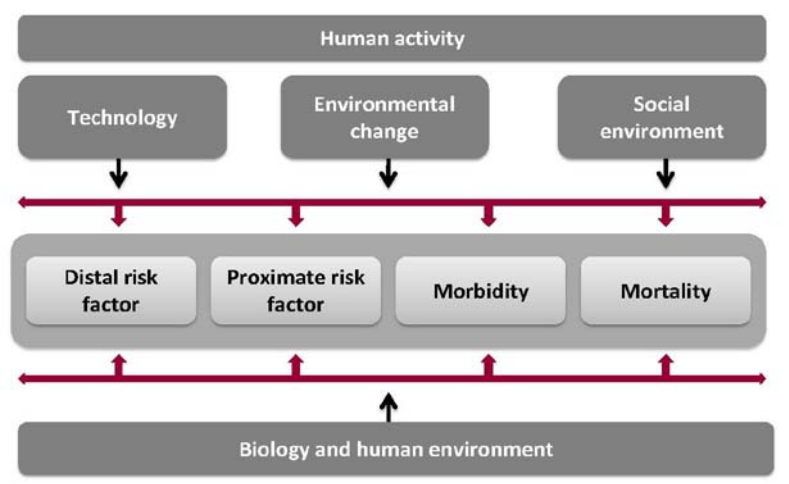
This problem can be understood by first identifying the emerging global issues that can affect the health of Canadians, and then considering the mechanisms that Canadians can use to address these issues and to continue to identify and address newly emerging global issues on an ongoing basis.

Emerging global issues that can affect health

There was once a time when top-of-mind determinants of health were limited to those *proximal* drivers that directly affect human biological outcomes. These include nutrition, vaccination, physical fitness, traffic accidents, war, smoking, antibiotic resistance, iatrogenic injuries and sanitation. However, over the past 60 years, and especially since the WHO Commission on the Social Determinants of Health (30), greater attention has been given to societal conditions as more *distal* drivers of health outcomes that do not have direct biological consequences, but rather enable them. Distal drivers of health outcomes include income, education and technology as well as the even more distal drivers associated with environmental and social change (1, 31).

Just as focus has increasingly shifted from proximal drivers of health to a combination of proximal and distal drivers, so too has there been recognition that health is not only the product of local conditions, but rather the complex interplay of local and global conditions interacting simultaneously (7). From a Canadian perspective, the world has become increasingly interdependent and interconnected such that the health of Canadians is now increasingly influenced by global issues emerging from places far away. Whereas most proximal drivers of health are both caused by and affect people within a limited geographic area, the distal and super-distal drivers of health can arise anywhere and affect people everywhere. These distal drivers can be further sub-divided according to whether they have direct or indirect impacts on health outcomes (see Figure 1 below).

Figure 1: Drivers of health and disease



Source: (1)

Many factors have contributed to and arisen from this situation which should be considered and addressed by Canadians to maximize their health. As a starting point, an in-depth review of the research evidence led to the identification of six proximal, distal and super-distal challenges that have emerged globally and which will significantly affect the health of Canadians over the coming decades. These challenges primarily stem from the following global changes:

1. People are increasingly mobile and travel over longer distances than ever before.
2. Cross-border trade of goods, services and investments has reached unprecedented levels.
3. Agriculture is increasingly a single, worldwide integrated market with food sourced globally.
4. Damage to the environment and depletion of its resources is occurring at increasing speeds.
5. Information and communication technology lets people connect across vast distances.
6. Issues are increasingly addressed through multilateral cooperation, including the adoption of new international laws, regulations and standards.

While other challenges can also be important, such as violent conflict and its potential for both direct impacts on Canadians (e.g., through terrorism) and indirect impacts (e.g., opportunity costs of military investments in Canada's partner countries), these six challenges warrant particular attention at this time.

Box 3: Mobilizing research evidence about the problem

The available research evidence about the problem was sought from a range of published and "grey" research literature sources. Many relevant articles were identified through two existing comprehensive reviews of the literature on health and emerging global issues (2-4) as well as past studies that had previously been cited in key articles by members of this project's Steering Committee and other key informants. An extensive literature review was also conducted using keyword searches in MedLine and Google Scholar as part of this project's preliminary study. Updates of part of these searches were then conducted in MedLine and Google Scholar to inform the preparation of this issue brief. Grey literature was sought by reviewing a number of Canadian and international organizations, such as Health Canada, Statistics Canada and the World Health Organization. Additional resources were located within repositories maintained by this issue brief's authors as well as documents offered by colleagues and the key informants who were asked about published documents during interviews. Priority was given to research evidence that was published more recently, that was locally applicable (in the sense of having been conducted in Canada), and that took equity considerations into account.

1. People are increasingly mobile and travel over longer distances than ever before

Globally, an estimated 2.5 billion people travelled by airplane in 2009 and an additional 800 million passengers are expected annually by 2014 (32). The International Air Transport Association predicts this number will jump to 16 billion passengers and 400 million tonnes of freight by 2050 (33). In 2009, Canadians made 26.2 million overnight international trips and hosted 15.6 million international visits (most of whom were American) (34). One in five (19.8%) Canadians were born outside of Canada and are likely to visit family members abroad (28).

Whereas movement was previously localized and international travel the exception, there are new proximal risks posed to Canadians by this hyper mobility. Communicable diseases, for example, are spreading faster now than ever before (35). Epidemics previously spread over years (e.g., bubonic plague in the 14th century), months (e.g., cholera epidemics in 19th century) or weeks (e.g., Spanish Influenza of 1918-1919). In today's globalized world, the SARS epidemic took only 17 hours to spread half-way around the world from China to Canada. Future disease outbreaks are expected to take merely a few hours before they affect multiple countries across geographically distinct regions (36). The recent Influenza A (H1N1) pandemic highlighted that no country is without risk (37). Diseases which had previously been eradicated in Canada are more likely now than ever before to re-emerge (38).

Canadians are also increasingly utilizing healthcare services when they travel, or are indeed travelling in order to receive these services. Medical tourism globally is now an $80-billion USD business (39). In addition to the challenges associated with variable government regulations and indeterminate quality of care, Canadians

receiving these services often have difficulty getting back to Canada or reintegrating back into the Canadian health system for post-treatment care (40).

Travel also increases the spread of anti-microbial and anti-viral resistance (41-44). With a disappointing pipeline of new medicines, Canadians are at increased risk of being infected with a previously curable disease that is no longer treatable. Even if Canadians do everything they can to limit microbial and viral resistance, such resistance can develop abroad and spread to Canada.

The permanent migration of people is also increasingly widespread (45). When people move to Canada, this affects the Canadian health system. For example, changes in population demographics may alter patterns of disease, which could change the demand for different types of healthcare services for which planning is necessary. Greater migration and globalized labour markets also mean that it is easier for Canadian-trained health professionals to move to whichever countries offer them the greatest opportunities. While Canada is currently a net beneficiary of international health professional migration, it was not too long ago when the country was greatly concerned by the "brain drain" of highly skilled workers, particularly doctors, to the United States (46).

Increased mobility and travel, however, also pose many opportunities that Canadians can seize. For example, Canadians can learn and adopt innovative ways of protecting their health and providing healthcare services. International migration also provides opportunities to become more "global" and to build Canadian businesses that address health-related needs around the world.

2. Cross-border trade of goods, services and investments has reached unprecedented levels

International trade has reached levels never previously seen. Trade in merchandise and commercial services is valued by the World Trade Organization at $15.8 trillion USD globally, with over $370 billion USD of that involving Canada (47). Companies are increasingly operating across national borders, sometimes with few government regulations and little oversight (48). The liberalization of financial markets has facilitated enormous global expansions and shows no sign of relenting despite recent economic challenges.

The risks and opportunities posed by international trade are numerous. For example, increased trade increases the number of opportunities for spreading plant, animal and human diseases. Trade may also bring into Canada undesirable and possibly dangerous materials, such as garbage, used medical supplies and nuclear waste. Sourcing products globally may mean that they are of variable quality and follow unknown manufacturing standards. Recent examples of contaminated consumer products include baby milk and tooth paste (49, 50). There is also the possibility that increased trade may make it easier to traffic in narcotics (51), bring in illegal immigrants (52, 53), engage in forced prostitution (54, 55), and import counterfeit products (especially counterfeit pharmaceuticals) (56, 57). Trade also facilitates the cross-border movement of legal but harmful products, such as tobacco and alcohol. People can now trade their organs to wealthy buyers and offer their services to Canadians as surrogate parents. Products involving biotechnology and genomics will almost certainly pose new cross-border quandaries for countries to tackle together, no matter whether they involve cloning, personalized medicine or a number of other emerging technologies (58).

International trade has reached such significant levels that it has essentially created a global marketplace for medical technologies and pharmaceuticals. Indeed, some products tend to be produced by only one or two companies in one or two locations, making their availability in Canada vulnerable to a host of factors outside the control of Canadians and the Canadian government. Canada benefited from this situation during the recent Influenza A (H1N1) pandemic when it could exert significant influence over GlaxoSmithKline's vaccine-production facility outside Quebec City (59). Recently, however, the country has suffered from generic drug shortages that have left many pharmaceutical shelves empty of basic products as a result of factory glitches and supply chain problems for active ingredients (60). Just as the world has long relied on Canada for its supply of medical isotopes, Canadians rely on others for basic medications. Integrated markets

for medical technologies and pharmaceuticals are likely more efficient, but they have shown themselves to reduce global resilience due to lost redundancy.

Bilateral and multilateral trade agreements may also affect the health of Canadians and the availability of affordable healthcare services, because they often include binding side provisions related to market access and intellectual property. Specifically, it is not inconceivable that future agreements may prevent Canada from closing its borders to products it considers unsafe or enforcing its own product standards. International trade agreements in the past have been used by tobacco and alcohol companies to significantly expand their global reach. Canada may also lose direct control over its own intellectual property and health systems, a danger that is highlighted by leaked provisions of the currently proposed Canada-European Union Comprehensive Economic and Trade Agreement. According to analyses of these leaked provisions, Europe's proposal to require Canada to expand existing exclusivity rights, such as patent-term extensions and 10-plus years of data exclusivity, have been projected to extend brand-name drug patents an average of 3.5 years, thereby costing Canadians an estimated additional $2.8 billion CAD annually in drug costs (61).

Increased trade also offers Canadians many opportunities and possible health benefits. For example, Canadians can elect to receive healthcare services outside of the country, or can seek medical consultations using new communications technology. Trade can also promote a stable and growing economy, which is one of the most important determinants of health (30, 62). Effective trade can also facilitate the efficient supply of cheaper medicines and healthcare technologies that take advantage of differences in global labour markets. Finally, trade provides incentives to Canadian businesses to develop new health-related technologies as they have a larger market to which they can sell their products. Canadians can and have also offered themselves as consultants in foreign countries, guiding the development of new governance, financial and delivery arrangements for healthcare services around the world (63).

3. Agriculture is increasingly a single, worldwide integrated market with food sourced globally

Like travel and trade, the worldwide movement of agriculture increases opportunities for the spread of disease. In addition to the economic consequences that may result from collapsed animal markets, human health is implicated by increasing occurrences of zoonoses, whereby diseases are transmitted from animals to humans. Indeed, of all human diseases that have emerged over the last 20 years, 75% have been zoonotic. Globalized animal markets have been implicated in the international spread of deadly diseases such as avian influenza, SARS and HIV/AIDS. The problem may only worsen as animal production is intensified to achieve greater efficiency and economies of scale, which also provides more optimal incubating conditions for emerging zoonotic pathogens (3). Also contributing to this problem is the co-location of humans and companion animals in many countries, as well as the increasing consumption of uncooked or undercooked meat and seafood, which provides yet additional opportunities for animal diseases to be transferred into human populations (64).

An additional area of concern is the quality of food that gets exported globally. The production of food is naturally governed by local standards, which may diverge quite significantly from those enforced in Canada. For example, agriculture can become contaminated with food-borne illnesses, pollutants, biological agents and heavy metals, or exposed to dangerous chemicals during manufacturing processes. Animals can be forced to eat substandard feed and injected with products not allowed in Canada. Even when comparable government regulations exist, enforcement may be lacking. Genetically modified crops – rejected by some countries and embraced by others – represent a growing portion of global food production and can sometimes travel vast distances and overtake local plant varieties (65).

The rise of obesity and chronic diseases in Canada can also partially be blamed on the way food is produced, distributed and marketed. Food systems globally have become more obesogenic (i.e., more likely to give rise to obesity) and have actively promoted the consumption of less nutritious foods. Tastes have evolved to enjoy more salt and higher fat content, often justified by a need for faster and prepared foods (4).

Finally, global food prices have been rising, especially for staples such as maize, rice and wheat. With a growing population and a changing climate, the world is set for a food crisis over the next century whereby food production has to be doubled while using half the water. The problem is only expected to worsen as consumption patterns change with decreased global poverty and as governments, including the United States and European Union, set aggressive biofuel consumption targets (3). While Canada's overall food security may be largely guaranteed by its significant domestic production and relative wealth, rising food prices mean that a greater percentage of Canadians' income is devoted to basic sustenance. This especially makes it more difficult for low-income Canadians to buy sufficient food, and for all Canadians to choose foods that are more nutritious.

4. Damage to the environment and depletion of its resources is occurring at increasing speeds

The world is essentially one ecosystem whereby damage done in one geographic region is felt everywhere. Climate change is perhaps the most prominently discussed environmental change (see Figure 2 on the next page). According to the Intergovernmental Panel on Climate Change (IPCC), continued greenhouse gas emissions at or above current rates will cause further warming and induce many abrupt and irreversible changes to the global climate system over the next 100 years. The IPCC expects this will increase the global burden from malnutrition, diarrhea, cardio-respiratory conditions, infectious diseases, heat waves, floods and droughts. Over this time, climate change is also expected to expose hundreds of millions of people to increased water stress and be a substantial burden on healthcare services around the world (66). Margaret Chan, Director-General of the World Health Organization, has even called it "a new threat of a magnitude unknown to human experience" and stated that "climate change is the defining issue for public health during this century" (67).

According to a study by Health Canada in 2008, climate change is expected to affect Canadians' health by:

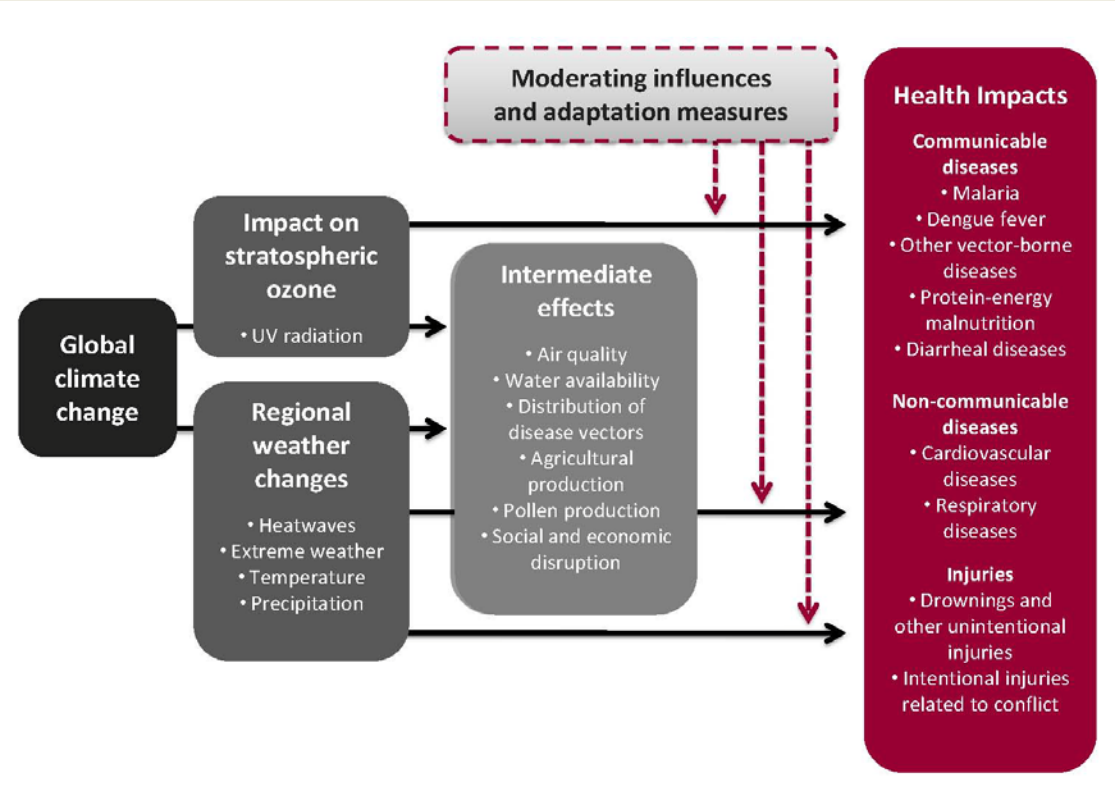
- increasing the risk of extreme weather and other climate-related events in Canada such as floods, drought and forest fires;
- reducing air quality through increased smog formation, pollen production, wildfires, and greater emissions of air contaminants due to changed personal behaviours;
- increasing the likelihood and number of heat waves and heat-related deaths; and
- increasing the risks associated with some communicable diseases and the emergence of diseases that are currently rare or foreign to Canada.

People living in the most northern parts of Canada are particularly vulnerable and have already reported significant environmental changes and corresponding risks to their health (68).

The Health Canada study also concluded that there are barriers preventing Canadians from adapting to future climate changes, such as: incomplete knowledge of health risks; uneven access to protective measures; limited awareness of best adaptation practices to protect health; and constraints on expanding public health programs necessary to both prepare for and mitigate health risks that accompany climate change (68).

There are also other environmental changes afoot. While Canada may be blessed with 7% of the world's renewable supply of fresh water (69), it is susceptible to acid rain, pollution and export. Indeed, Canada has transferred and continues to transfer water to and from the United States. There is also a live legal question as to whether the North American Free Trade Agreement (NAFTA) could ever be used to prevent the Canadian government from stopping future bulk exports. Schemes for such exports have previously been unsuccessfully proposed by Sun Belt Water and the Nova Group in 1991 and 1998 respectively. With worldwide fresh water supplies diminishing and climate change threatening what remains, even new federal legislation to strengthen bans on bulk water exports, such as the proposed *Transboundary Waters Protection Act*, may not alleviate the political pressure and international legal obligations pushing Canada to allow such exports to countries with desperate water shortages.

Figure 2: Relationship between climate change and human health



The way energy is produced and distributed in the future will also affect the health of Canadians. In addition to any health consequences of any environmental damage and air pollution, recent events have shown how accidents can lead to oil spills, fires, nuclear radiation leaks and other circumstances that affect the public's health. The rising cost of petroleum and the possibility of 'peak oil' (i.e., a point beyond which global oil extraction begins to decline) will also affect health in Canada, whether by limiting the availability of the many oil-based medical products or by increasing their cost. Stable and affordable energy is also essential to the success of many health-system processes, such as electricity for healthcare facilities, drug manufacturing and medical tests. The cost and availability of energy also affects the cost of transportation, which is relied on to distribute medical supplies, transfer patients between facilities, and get health professionals to the places they are needed. The global food, agriculture and trade systems are also affected (70-72).

5. Information and communication technology lets people connect across vast distances

It is now possible to communicate instantly around the world, and international satellite TV, films, news media and the internet spread local practices, cultures, ideas and behaviours with few barriers. This new world of advanced information and communication technologies has enabled many of the previous emerging global issues. For example, instantaneous communication has enabled globally integrated markets for health products and has encouraged unprecedented levels of travel. The internet and telehealth technology is what allows doctors to diagnose and treat patients across national borders or encourage patients to travel abroad for their healthcare needs. Technology has facilitated access to overwhelming quantities of health information

from nearly every jurisdiction – information that is both correct and incorrect. It has also helped the global spread of various behaviours that are harmful to diet and physical activity.

Developments in information and communication technology, however, also show significant promise to enable new opportunities for health-related business and open new markets for Canadian health innovations. These tools can be used and have been used to coordinate global responses to health threats, such as the Influenza A (H1N1) pandemic where surveillance of Google searches helped authorities track the disease's global spread from Mexico (73-77) and where various media carried a constant flow of updates from the World Health Organization (WHO) and its Global Outbreak Alert and Response Network. Technology has also facilitated collaboration among international scientists, who consult each other on new developments and undertake multi-site health research.

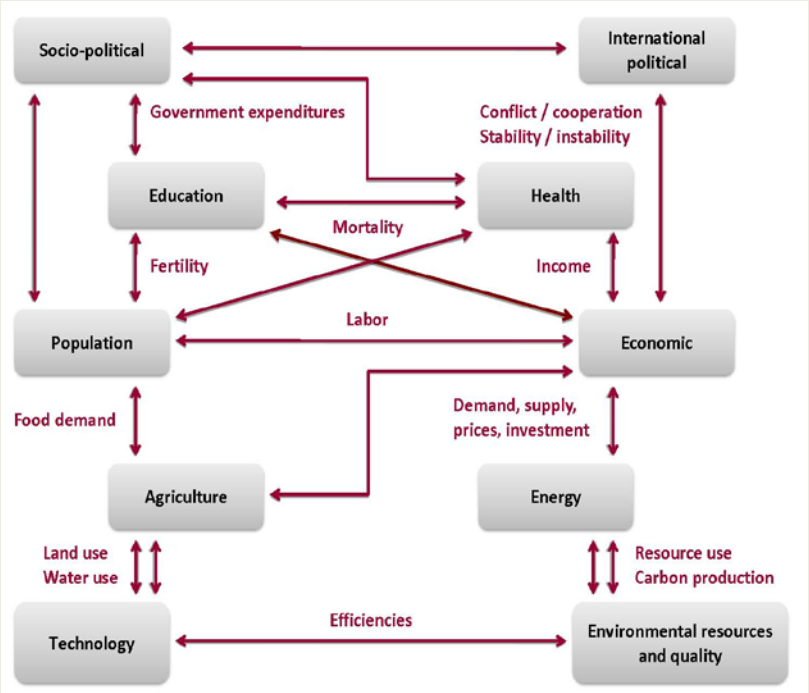
6. Issues are increasingly addressed through international law, regulations and standards

As the various elements of globalization have increased over the past few centuries (see Figure 3 on the next page), states have been faced with progressively more dangerous threats to their population's health, far less time to prepare for outbreaks before they arrive, diminished influence over health-related behaviours, and significantly more complex health challenges and contexts to tackle (78). This has made international cooperation essential. States have increasingly been addressing emerging issues through multilateral and polylateral diplomacy, and new international laws, regulations and standards are being adopted to apply globally. States over time have also become increasingly more willing to restrain their power, set binding commitments, and relinquish some control to international institutions as the need for them to respond globally has become more apparent (79).

As a prominent and law-abiding member of the international community, Canada is increasingly limited in what it can lawfully do by various international treaties, and some of its actions are even dictated by such binding legal obligations. Canada has taken a leading role in establishing some of these international laws – such as the WHO Framework Convention on Tobacco Control (2003) and the International Health Regulations (2005) – but it has been strongly pressured to accede to others, such as the Convention on the Rights of Persons with Disabilities (80). While these examples may be aligned with health goals, they do not necessarily result in better health outcomes for Canadians, especially where programs that are implemented to meet international legal obligations result in cuts to other health programs that may have achieved greater benefits. International law can also be directly harmful to the health of Canadians. For example, Indonesia used the Convention on Biological Diversity (1992) to justify its withholding of avian influenza virus samples (81, 82), and future trade treaties involving Canada could decrease the price of tobacco, expand exclusivities on patented medicines, and restrict certain types of medical research. Other limitations on Canada are dictated by the need to align itself with 'global' norms, consensus on ethical imperatives, business realities and trade-offs negotiated to achieve other objectives. The WHO Global Code of Practice on the International Recruitment of Health Personnel is an example of a consensus statement that bans actively poaching health workers from the same low- and middle-income countries that have long provided Canada with a healthy supply of trained professionals (83).

While Canada is privileged to be a member of many multilateral forums, it is not a decision-maker in all of them. The International Conference on Harmonisation's guidance documents are good examples of how the decisions of just a few governments – in this case the United States, European Union and Japan – can largely dictate the way health products are regulated globally (84).

*Figure 3: Some relationships betwe***en health and non-health issues**



Source: (1)

Additional equity-related observations about these emerging global issues

From an equity perspective, the emerging global issues discussed above particularly affect those who are poor in Canadian society. These groups are also the least prepared to cope with these new challenges. For example, rising food prices most significantly affect those with limited financial resources and without a social safety net. These same individuals would also be significantly more vulnerable in disease outbreak situations. Canada's aboriginal people and northern communities, which are typically much poorer than most other communities, may be most affected by the effects of climate change (68).

The poor also would not be able to take advantage of many opportunities offered by globalization, such as advances in technology, which are at least partially reserved to those Canadians who can afford them. Trade in healthcare services also mostly benefits those with the greatest wealth, who can afford to pay for the services they need or travel across Canada or abroad to utilize healthcare capacity wherever it is available.

Finally, Canada's poor are also generally recognized to have less influence on public policymaking and would be less influential in shaping new international laws, regulations and standards (85).

Where collaboration across traditional divides is needed to (prepare to) address these issues

Mitigating the risks and taking advantage of the opportunities posed by these six factors and additional equity considerations is complicated by the need to approach them from multiple perspectives across traditional divides. Governments around the world, including Canada's, may not yet be ready to work in a new way that helps protect the health of their people from these challenges and capitalizes on the opportunities, thereby further contributing to the problem. Moreover, Canada's government may not yet be ready to establish processes to identify and address newly emerging global issues on an ongoing basis.

1. Working across departments within the federal government

As a result of globalization and its many features, as discussed above, protecting the health of Canadians now requires multi-sectoral action across government departments, that reflect shifting dynamics with ever-changing and uncertain political environments, human security threats, military powers, foreign relationships, governance structures, ecological conditions, development trends and international economic policies. Identifying emerging global issues and achieving improvements to Canadians' health requires collaboration across traditional departmental divides that are sensitive to historical, political, economic, social and cultural differences among constituencies and communities, as well as strong coordinated national responses to multi-faceted health issues (5, 86).

However, there remains a question as to whether Canada's governmental architecture is sufficiently robust, flexible and cooperative to identify and address emerging global issues affecting health, especially given that they often fall in the gaps between existing administrative structures. To more fully appreciate this concern, an adjunct faculty member at the McMaster Health Forum and lead author of this issue brief conducted 12 elite interviews from January to February 2010 with senior Canadian government officials in health, foreign affairs and international development. In addition to identifying various benefits that Canada could achieve with coordinated action on emerging global issues – including enhanced national security, international reputation, health industry, civic identity, contributions to development, and population health status – the interviewed officials generally agreed that Canada's governmental architecture could be strengthened. They specifically pointed to four areas of the government's institutional architecture that could be improved:

- leadership, mandates and visions;
- coordination among government departments;
- existing discordance across government; and
- support from the country's political leadership (87).

The interviews with government officials also elicited 29 different suggestions for possible policy options that each contributor believed would be beneficial and practical for Canada. The officials in particular emphasized the need to strengthen Canada's global health efforts in the context of its foreign policy architecture, domestic partnerships and emerging global issues that originate outside of the traditional health sphere. Specifically, nearly every interviewed government official concluded that an inclusive, evidence-informed approach to developing Canadian public policies on global issues that affect health could significantly strengthen the country's efforts in this area and help achieve considerable health gains – as such processes appear to have achieved for other countries (87).

2. Collaboration among federal, provincial and territorial governments

Health is a shared responsibility in Canada between the federal, provincial and territorial governments, necessitating collaboration among them. While the *Constitution Act* (1867) does not allocate authority for health issues, over time Canada's courts have recognized healthcare to be a provincial responsibility with the federal government having an important role in population health. Through its other constitutional powers,

the federal government has also become responsible for particular areas of importance to health, such as health product regulation, health security and pandemic preparedness. The federal government also finances a share of provincial governments' healthcare budgets through transfer payments that were most recently re-negotiated in the 2003 First Ministers' Accord on Health Care Renewal (29), and it funds a significant portion of Canada's health research (through the Canadian Institutes of Health Research) and health information activities (through the Canadian Institute for Health Information). The exact boundary between federal and provincial authority in health is still regularly contested, as evidenced by the Supreme Court of Canada's recent decision in December 2010 on the federal government's authority to regulate assisted human reproduction (88).

The complicated division of powers between federal, provincial and territorial governments makes collaboration both essential and difficult, especially for those multi-factorial challenges that require multi-sectoral approaches and which simultaneously engage responsibilities vested within different levels of government. For example, the federal government leads on international issues and negotiates international agreements on behalf of all Canadians even when such issues and agreements significantly affect provinces as the primary regulators of healthcare.

One approach that has been followed to facilitate policy coherence and coordination across level of government has been the creation of various federal/provincial/territorial advisory committees, such as those related to HIV/AIDS, drinking water, radiation protection, health 'infostructure,' national health surveillance, physical activity, population health, environmental and occupational health, and health delivery and human resources. The federal government also uses its financial resources or 'spending power' to incentivize collaboration among governments and encourage provincial governments to follow certain standards, such as those outlined in the *Canada Health Act* (1984).

3. Collaboration between government and stakeholders

There is increasing recognition that government can only do so much and that it should build on its comparative advantages (and address its comparative disadvantages) by effectively collaborating with key stakeholders.

Civil society organizations, for example, have access to different types of networks, can quickly deploy their available resources, and are often free from political constraints. The private sector has enormous creative potential for innovation and significant financial resources. Academics and research institutions have in-depth knowledge, expertise and international experience that can inform how various challenges are identified and addressed. All of these stakeholders will also be able to foster connections, relationships and partnerships directly with people and organizations in other countries well beyond what a foreign service is capable of doing. This type of "track-two diplomacy" – which involves non-official engagement between opinion leaders from different countries who are not acting in a formal capacity (89) – is an opportunity to boost mutual understanding, foster important cross-border relationships, broaden the constituency supporting international cooperation with Canada, and identify areas of synergy and future collaboration. Such initiatives, in fact, can demonstrate the value and reap the rewards of international cooperation while also setting the stage or helping to deepen formal government ties. Canada's immigrant population and the organizations that represent them may be particularly well positioned to stay on top of emerging global issues and help their adopted country respond to them.

Collaboration is also important because many emerging global issues actually originate from non-government sources, such that solutions might better come from these same non-government sources. For example, food growers and manufacturers may be well-placed to help encourage healthy eating, and health professional regulatory colleges can help promote the ethical recruitment of international health personnel. As the effects of globalization continue to deepen, these groups are no doubt becoming increasingly interested in helping address any emerging global issues that affect them and other Canadians.

4. Collaboration between Canada and other countries

As can be inferred from above, it is becoming increasing clear and recognized that the world can only be as healthy as its weakest link (6). In this sense, health has become a global public good. The global fallout from SARS in 2003 and the recent influenza A (H1N1) pandemic highlighted the speed with which (and extent to which) communicable diseases can spread menacingly to Canadians irrespective of established natural or political boundaries (36). With today's sheer volume of international trade, travel and tourism (35, 90, 91), countries – especially Canada – face increasingly dangerous threats to their citizen's health security that originate on the opposite side of the world, and they realistically have mere hours to prepare for them (36, 78).

Canada's domestic health security thus depends on working with the world to effectively address pandemics, climate change, trade in harmful substances and other health challenges before they affect Canadians. This means that Canada is increasingly dependent on global disease surveillance networks and international mechanisms to resolve trade, agriculture and environmental issues. Canada is also dependent on low- and middle-income countries to effectively utilize their limited infrastructure, technical capacity and health systems to resolve health challenges as they emerge and before they spread (92-94).

This connectedness to events occurring on the opposite side of the world is not limited to pandemics and communicable diseases, but also economic crises, armed conflicts, population growth and other threats to health that may diminish a country's stability – and that of the international community along with it. Diseases like HIV/AIDS have been shown to undermine social structures and obliterate human capacity for economic productivity, which in turn affects the Canadian and global economies. Volatility in one part of the world obviously affects Canadian interests at home and abroad. Limited development and few opportunities can also nurture international terrorism (95) – including the use of chemical, biological and nuclear weapons as they become more easily available (96) – or lead to regional conflict which may require the deployment of Canada's armed forces whose lives and health are put at risk. When viewed in this way, achieving better health domestically requires international approaches and effective coordination between Canada and other governments around the world.

THREE OPTIONS FOR ADDRESSING THE PROBLEM

There is extensive research linking emerging global issues to the health of Canadians. However, much less is known on what the Canadian government and stakeholders can do to actually address them. Discussing these options will help shed further light on our understanding of globalization's risks and opportunities as were identified in the previous section.

There are a number of different ways to approach this problem. To encourage discussion about the advantages and disadvantages of different strategies, three possible options are suggested: 1) support mutual learning across sectors; 2) coordinate government action; and 3) undertake new initiatives.

In this section, we focus first on what is known about these options and their strengths and weaknesses. In the next section we focus on barriers to adopting these options and strategies to overcome those barriers.

Box 4: Mobilizing research evidence about options for addressing the problem

Research on the options for addressing the problem were identified through two existing comprehensive reviews of the literature on health and emerging global issues (3, 4) as well as past studies that had previously been cited in key articles by members of this project's Steering Committee and other key informants. An extensive literature review was also conducted using keyword searches in MedLine and Google Scholar as part of this project's preliminary study. Updates of part of these searches were then conducted in MedLine and Google Scholar to inform this issue brief. Additional resources were located within repositories maintained by this issue brief's authors as well as documents offered by colleagues and the key informants who were asked about published documents during interviews. A continuously updated database containing more than 1,200 systematic reviews of delivery, financial and governance arrangements within health systems – Health Systems Evidence (www.healthsystemsevidence.org) – was also searched.

Being aware of what is not known can be as important as being aware of what is known. When faced with a lack of studies or an 'empty' review, primary research could be commissioned or an option could be pursued and a monitoring and evaluation plan designed as part of its implementation. When faced with a review that was published many years ago, an updating of the review could be commissioned if time allows.

Option 1 – Support mutual learning across sectors

This option involves building on existing efforts by supporting mutual learning between key health and non-health actors, and collaborating with them to pursue activities that benefit the health of Canadians. To further understand this option, it is useful to consider it according to different approaches to supporting mutual learning. Specifically, the elements of this option might include:

- identify key health **actors** who have the most to learn from non-health actors, as well as key non-health **actors** whose decisions affect Canadians' health and the specific **initiatives** they can pursue to both improve the health of Canadians and ensure they do not detract from it;
- expand non-health actors' attendance at health **meetings**, and health actors' attendance at non-health meetings;
- offer **executive training** to both health and non-health actors with an emphasis on mutual learning;
- provide **support** to non-health actors in applying a health lens to their decisions and undertaking health risk identification and management as appropriate;
- encourage **collaborative problem identification and problem-solving** that draws on a wide range of research evidence and that harnesses the tacit knowledge, views and experiences of policymakers and stakeholders from all relevant sectors; and
- learn from and contribute to **international experience** about how to support mutual learning across sectors.

We did not find any systematic reviews addressing any of the elements of this option. Accordingly we cannot present summaries of synthesized research evidence about each of the:

- benefits of the option;
- potential harms associated with the option;
- costs and/or cost-effectiveness of the option in relation to the status quo;
- uncertainty regarding benefits and potential harms (to inform monitoring and evaluation if the option were pursued);
- key elements of the policy option if it was tried elsewhere; and
- stakeholders' views about and experiences with the option.

In the absence of any systematic reviews, deliberations about this option would need to draw on the tacit knowledge, views and experiences of policymakers and stakeholders. If time allowed, a focused systematic review could be conducted on one or more of these option elements.

In order to promote deliberation, we review here several key points that were identified in our review of the research literature we identified in our search.

For example, protecting Canadians from the elements of globalization, and facilitating the opportunities it provides, could be achieved by promoting mutual learning, collaborative problem identification and problem-solving, and enhancing capacity for multi-sectoral work (97). The government, for example, could offer opportunities for health and non-health officials to learn about each others' work. This could be achieved via renewed focus on science and technology in the training of civil service staff and/or the social determinants of health for staff in the Health Portfolio.

The Canadian government could also further engage existing civil society organizations, professional associations, and individual opinion leaders who have many potential contributions to make. For example, they can collaborate on government-led international projects and can launch their own north-north or north-south collaborations such as twinning programs, exchanges, technology transfers, secondments and/or joint-policy projects. In many senses, these stakeholders are already addressing the identified emerging global issues in the absence of government authority. They could represent an opportunity to expand the de facto Canadian diplomatic network and even address challenges in contexts where formal government contact would be impossible (89).

Continuing or enhancing funding for civil society's global activities is one option to engender support, as is the facilitation of multi-partner projects and scientific exchanges across countries. The 25 Canadian-based World Health Organization Collaborating Centres may also be a useful resource (see Table 1 below). For example, these Collaborating Centres could help government officials and stakeholders apply a health lens to their decisions and help identify new ways to both identify and manage risks to health. New communication technologies can help facilitate this type of engagement among all interested Canadians (98).

Universities and other academic institutions could also play a central role as points of contact in producing, packaging and sharing knowledge on identifying and addressing the health implications of emerging global issues. They can nurture talent and can leverage health values as a bridge between government, industry and other important constituents (99). Their research on the link between health and globalization could be more fully supported. For example, the exact quantitative impact of globalization's various elements on the health of populations, and how national governments and international institutions should be responding, is still not entirely known. Harnessing the potential of Canadian scholars to help develop evidence-informed solutions to emerging global challenges could be an important part of supporting mutual learning across sectors. Their training of the next generation of Canada's public officials, civil society leaders and corporate executives could also be encouraged as part of any strategy that supports mutual learning across sectors (100).

Table 1: World Health Organization Collaborating Centres that are based in Canada (87, 101)

	Host institution	Focus
1.	Centre for Community Health Promotion Research, University of Victoria	Health promotion
2.	Faculty of Nursing, University of Alberta	Nursing and mental health
3.	National Microbiology Laboratory, Public Health Agency of Canada, Winnipeg	Emerging and zoonotic diseases detection, diagnostics, reference and research
4.	National Microbiology Laboratory, Public Health Agency of Canada, Winnipeg	Preparedness and response to enteric pathogens and their antimicrobial resistance
5.	McMaster Health Forum, McMaster University	Evidence-informed policy
6.	School of Nursing, McMaster University	Primary care nursing and health human resources
7.	Canadian Centre for Occupational Health & Safety, Hamilton	Occupational health and safety
8.	Industrial Accident Prevention Association, Mississauga	Workplace injury and illness prevention
9.	Centre for Addiction and Mental Health, Toronto	Addiction and mental health
10.	Centre for Health Promotion, University of Toronto	Health promotion
11.	Joint Centre for Bioethics, University of Toronto	Bioethics
12.	Ottawa Laboratory Fallowfield, Canadian Food Inspection Agency, Nepean	Control, pathogenesis and epidemiology of rabies in carnivores
13.	Healthy Environments & Consumer Safety Branch, Health Canada, Ottawa	Water quality
14.	Health Products and Food Branch, Health Canada, Ottawa	Food contamination monitoring
15.	Health Promotion and Chronic Disease Prevention Branch, Public Health Agency of Canada, Ottawa	Non-communicable disease policy
16.	Institute of Population Health, University of Ottawa	Knowledge translation and health technology assessment in health equity
17.	Douglas Mental Health University Institute, McGill University	Research and training in mental health
18.	Department of Nutrition, Faculty of Medicine, Université de Montréal	Nutrition changes and development
19.	Centre de Recherche Interdisciplinaire sur la Biologie, la Santé, la Société et l'Environnement, Université du Québec à Montréal	Prevention of work and environmental related illnesses
20.	Faculté de Médecine et des Sciences de la Santé, Université de Sherbrooke	Health science education and practice
21.	Groupe de Recherche et d'Intervention en Promotion de la Santé de Université Laval, Ville de Québec	Development of healthy cities and towns
22.	Centre Hospitalier Universitaire de Québec, Ville de Québec	Environmental and occupational health impact assessment and surveillance
23.	Centre de Santé Publique Sécurité dans les Milieux de Vie, Ville de Québec	Safety promotion and injury prevention
24.	Faculty of Health Professions, Dalhousie University	Health workforce planning and research
25.	Department of Psychiatry, Faculty of Medicine, Dalhousie University	Mental health training and policy

Option 2 – Coordinate government action and provide a framework for stakeholder action

This option involves building on existing efforts and enhancing future efforts by coordinating the development, implementation, management and evaluation of Canadian international policies, programs and activities that affect health. To further understand this option, it is useful to consider it according to different approaches to coordination. Specifically, the elements of this option might include:

- foster a **culture** of collaboration on health issues that engages non-health sectors as much as the health sector;
- adopt processes and provide opportunities to facilitate consultation and interaction on health issues among health and non-health **experts**;
- create mechanisms for inter-departmental **coordination** and **policy coherence** such as working groups, task forces or a regular high-level forum;
- create mechanisms for **stakeholder engagement**;
- develop a Canada-wide global health **strategy** (or framework, principles or vision) for existing and future activities that targets all segments and sectors of society, including government officials, civil society leaders, industry and researchers, and both health and non-health actors; and
- learn from and contribute to **international experience** about how to enhance cross-sectoral coordination, which could include participating actively in the work that builds upon the Oslo Ministerial Group's agenda for action.

We did not find any systematic reviews addressing any of the elements of this option. As with option 2, we cannot present summaries of synthesized research evidence about the benefits, harms and costs of the option. In the absence of any systematic reviews, deliberations about this option would again need to draw on the tacit knowledge, views and experiences of policymakers and stakeholders. If time allowed, a focused systematic review could be conducted on one or more of these option elements.

In order to promote deliberation, we review here several key points that were identified in our review of the research literature we identified in our search.

For example, Canada could build on its existing efforts and enhance future efforts by fostering better coordination and policy coherence across government departments, especially among staff responsible for health, foreign policy, agriculture, environment, industry, natural resources and international development. Coordination could help achieve 'smart power,' which is the harmonized utilization of all resources available to government when working in a particular area (102, 103). Processes could be in place to facilitate consultation with technical or subject-matter experts where appropriate, and a culture of collaboration could extend beyond specific issues like HIV/AIDS and pandemic preparedness. Health and non-health experts could be given opportunities to interact through better coordination mechanisms such as inter-ministerial networks, working groups, conferences or departmental exchanges. (An existing example of such collaboration is the Global Health Research Initiative, which brings together five federal agencies to coordinate their efforts and resources to support global health research.) Efforts could also be undertaken to raise awareness for the unintended health consequences of existing government policies and to identify synergizing strategies to improve Canadians' health. A recent study also points to the option of assessing individual and departmental collaboration across government in performance reviews, which the authors claim to be one of the most effective ways to encourage this type of collaborative behaviour (104).

Another available option for enhancing coordination and policy coherence across government would be to appoint a high-level point person or working group. The leader could be a minister of state, political appointee, ambassador or public servant. Precedents for such mechanisms include Canada's Stabilization and Reconstruction Taskforce, which has high-level leadership, interdepartmental membership, financial resources and protected time for meetings. Care, however, would need to be taken to ensure that new mechanisms do not duplicate existing problems at the political and public administration levels, and do not interfere with other priority work.

The government could alternatively adopt a common vision and action plan for health that clearly articulates the roles and responsibilities of each department. It could also choose to expand the Health Portfolio's mandate to formally include international and non-health activities that affect any of the proximal, distal or super-distal drivers of health. Research suggests that clarity, even in the absence of new resources, may be beneficial (87).

The Canadian government could also adopt a comprehensive government-wide global health strategy. The process by which such a strategy could be developed and implemented could include: 1) assessing Canada's comparative advantages and weaknesses in protecting the health of its citizens; 2) defining the architectural and policy challenges to be addressed; 3) developing made-in-Canada priorities and objectives; 4) identifying the staff and resources that are available and necessary for success; 5) creating performance indicators and an evaluation framework; and 6) developing plans for action, implementation, communication and stakeholder engagement (87). The Canadian Academy of Health Sciences is currently preparing a report on the potential for a global health strategy for Canada, which will be launched in late 2011.

Research and analysis already exists to inform initial insights on the first two steps (25, 87). Sample criteria for establishing priorities in global health to facilitate the third step have also been published elsewhere, such as the Oslo Ministerial Declaration, which identified three thematic areas, 10 priorities and 45 action points "in which a stronger, more direct involvement of foreign policy could make a tangible contribution to protecting and promoting health" (6). The criteria used to develop the U.K.'s global health priorities could also be helpful. These include the issue's global importance; the country's existing expertise and influence in the area; the ability to build upon strengths that already exist across government; measurability of results; and the direct and/or indirect benefits for the country's citizens (7). The final three steps outlined above implicate internal government processes that would have to be led by public servants, albeit in partnership with relevant external partners where appropriate. Based on the American experience, civil society leadership may be particularly helpful in completing this task, and could be a fruitful option in the Canadian context (102, 105).

Option 3 – Undertake new initiatives that provide value for money

This option involves designing new health policies, programs and activities that specifically address emerging global issues both within Canada and abroad, including those not traditionally addressed by health decision-makers. To further understand this option, it is useful to consider it according to different types of initiatives or approaches to identifying and prioritizing them. Specifically, the elements of this option might include:

- support **research** and help generate new **evidence** on the health implications of non-health global issues and how they can be identified and addressed in an ongoing way;
- support a **review** of existing initiatives/investments, a **prioritization** of future initiatives/investments, and a plan for periodic review/re-prioritization efforts;
- facilitate **collaborations** among civil society groups that target non-health issues in ways that are likely to enhance Canadians' health;
- recruit Canadian health organizations and individual experts to help develop, implement, manage and evaluate **re-organized or expanded** Canadian global health **initiatives**;
- make **new investments** in developing countries that are likely to enhance Canadians' health; and
- learn from and contribute to **international experience** about how to address non-health global issues, especially on issues that most directly affect the health of Canadians.

We also did not find any systematic reviews addressing this option. Tacit knowledge, views and experiences of policymakers and stakeholders would again be essential to understand its potential benefits, harms and costs. Also, if the option were considered a priority, a focused systematic review could be conducted on one or more of these option elements.

From the literature that we identified through our focused search, we identified several ideas in the hope that they serve as a starting point to inform deliberation on this option.

For example, the research literature points to various new initiatives that Canada can undertake to address emerging global issues. The government, for instance, could send high-level non-health officials to meetings of the World Health Organization and Pan-American Health Organization, encourage Health Portfolio participation on delegations related to trade, education, the environment and other matters, and reserve part of the International Assistance Envelope for health-related activities (87, 106).

Another option is for the government to apply a health lens to its decision-making processes as appropriate (107, 108). This could be achieved by making health-impact assessments mandatory for particular types of foreign trade, defence, economic, environmental and/or development decisions, and/or by asking public servants to consider health implications when recommending policy options. Health Canada has already published a *Canadian Handbook on Health Impact Assessment* to help with such efforts (109). Alternatively, the Health Portfolio could be mandated and resourced to help other departments consider health issues, when such a perspective is desired. At least eight countries have already promised to incorporate a health lens into their policy processes (6, 7). Various international organizations, including the World Health Organization and European Union, support them in doing so with varying degrees of success (15, 110, 111).

Finally, Canada could also invest more in its global health diplomacy efforts. The way the world governs itself will affect the international laws and policies that are adopted to address collective challenges which may directly or indirectly relate to the health of Canadians. The governments and non-governmental actors that participate in international affairs, and the design of mechanisms that coordinate the actions of various actors, inherently influences global decision-making outcomes and prioritizes some issues over others. The interests of some nations and sub-national actors may not align with the health-related interests of Canadians and/or may prevent the pursuit of global strategies that would be beneficial to the health of Canadians. Investing in global health diplomacy could result in greater influence for Canada in global decision-making related to the proximal, distal and super-distal drivers of health, and ensure that adopted policies are as beneficial to the health of Canadians as possible.

Looping back to our understanding of the problem

The purpose of this issue brief and the stakeholder dialogue it was prepared to inform, as noted in the introduction, is to inform the government of Canada's understanding of emerging global issues that may affect the health of Canadians. These options can help to shed light on our understanding of the problem in at least three ways.

First, it is clear from the options that there is much that remains to be learned about how emerging global issues actually affect the health of Canadians, and what the government of Canada and stakeholders can do to address them. The need to draw from multiple sectors to understand and appreciate the scope and depth of the problem is evident. Also clear is the fact that no one sector has all of the solutions such that cross-sectoral collaborative processes are required. New learning on how to address emerging global issues may only be possible by actually experimenting with different approaches and evaluating them.

Second, the emerging global issues facing Canadians do not necessarily need to be identified and addressed with major commitments of new resources. Instead, most of the identified issues are of a type that requires a reorganization of existing efforts, fostering a culture of collaboration, and shifting from silos to multi-sectoral teams. The challenge with addressing the emerging global issues will be to find creative mechanisms and strategies that can muster existing strengths, resources and capacities from across government departments, civil society, research institutions and the private sector toward common goals.

Third, a key challenge going forward will be to develop a framework that facilitates both periodic and dynamic identification of new global risks. While the options identified in this issue brief address those emerging issues that are predicted in the current research literature, new options will be needed in the future (or these options will need to be revised) to ensure that government and stakeholder decisions and actions are informed by the highest quality and most relevant research evidence at the time.

IMPLEMENTATION CONSIDERATIONS

Potential barriers to implementing the three options

In considering what challenges may be faced in trying to pursue one or more of the options – or which may surface later – it is helpful to consider these difficulties in relation to several groups: citizens, professionals, organizations and systems. A list of potential challenges, framed as questions to spur reflection and deliberation, is provided in Table 4.

Beginning with citizens, options 1 and 2 may not be visible to them and, if the options are visible, citizens may not see value in the activities given the outcomes wouldn't be as clear to them as they would be for some other policies and programs. For option 3, citizens may not support new policies, programs or activities related to health, at least any beyond those that strengthen domestic health systems.

Turning to professionals and the organizations in which they work, option 1 brings with it the challenge of engaging those for whom health might be a consequence of their actions, but rarely if ever an objective. These individuals would likely need to be convinced that they can achieve both objectives important to their sector (e.g., economic growth, a stable food supply) and health objectives simultaneously. Option 1 also brings to the fore issues around domestic actors' willingness to collaborate, and even whether collaborating domestic actors can achieve their objectives without working in close collaboration with their peers in other countries. Option 2 may encounter challenges such as a lack of buy-in to the vision and a lack of motivation to change current behaviours. With option 3 the challenges are more likely to take the form of a willingness and capacity of non-health actors to help craft new initiatives that may be seeen as secondary to their core concerns.

Some system-level barriers may be government-level analogues to those faced at the professional and organizational levels, such as the challenge of engaging non-health actors in considering health as one of many objectives of their work. Other barriers relate to the scale and complexity that any actions would require and the political will that would be required to engage the necessary stakeholders and build the case for a new approach.

Table 4: Potential barriers to implementing the options

Levels	**Option 1** – Support mutual learning across sectors	**Option 2 –** Coordinate government action and provide a framework for stakeholder action	**Option 3 –** Undertake new initiatives that provide value for money
Citizens	• Will it be visible to citizens? • Will they see value in activities that don't have clear outcomes? • Will they support government efforts to build capacity within the public service?	• Will it be visible to citizens? • Will they see value in activities that don't have clear outcomes?	• Will the public support new policies, programs or activities related to health?
Professionals	• Will non-health professionals be interested in health issues? • Will non-health professionals be willing to work with health professionals to pursue health objectives? • Are efforts led by domestic non-health professionals sufficient to address all of the non-health global issues that affect health?	• Will professionals follow a government-developed framework for action? • Are incentives needed to change from business-as-usual to a new approach?	• Do professionals have the interest in responding to global issues and the capacity to respond?
Organizations	• Same but at the level of non-health organizations	• Same but at the level of non-health organizations	• Same but at the level of non-health organizations

Government	• Same but at the level of government departments • Is cross-departmental collaboration dependent on good relationships among relevant cabinet members? • Are there mechanisms that can help ensure sustainability?	• Is it feasible to try coordinating so many actors across different segments and sectors of society? • Is government willing to engage non-government actors and/or take a leading role in convening various stakeholders? • Are there jurisdictional issues to tackle? • Would new coordination mechanisms add to existing civil service complexity and/or otherwise impede progress?	• Is there sufficient political will to build the case for new policies, programs or activities related to health? • Will these new policies, programs and activities work, what are their costs, and what will influence the value obtained for the money spent?

Strategies for addressing potential barriers to implementing the three options

There are various strategies that can be pursued to help address some of the potential barriers to implementing the three options, including: 1) engaging non-health sectors; 2) clearly articulating the value-for-money proposition; and 3) communicating the benefits of the preferred option(s) to Canadians.

1. Engage non-health sectors in the emerging global issues that affect health

One common potential barrier to implementing any of the three options is the ability of Canadian health policymakers and stakeholders to engage their non-health colleagues in these issues and vice versa. The most likely way to achieve this engagement by non-health sectors is to ensure links are drawn to their primary areas of concern. Indeed, the way in which other priority issues can be addressed by tackling today's most pressing global challenges from a health perspective must be communicated broadly. Such linkages can be articulated with respect to Canada's international development, foreign policy and economic goals, each of which we address in turn below. Once this is done, addressing global issues that affect health may become good politics, great economics and essential for global development (15, 110, 111).

Link health to Canada's international development goals

Canada can have a profound effect on progress in international development through action it takes to address emerging global issues. Its leadership in this area can help contain the "balkanization of global health governance" (36), promote better coordination and harmonization of inter-sectoral development aid policies across donor countries (112), and mitigate globalization's impact on the health of the world's most vulnerable people. Canada can work with its partners to negotiate a more equitable distribution of resources throughout the developing world, and more appropriate targeting of donor funds. Its diplomats can promote better utilization of limited health resources, and tackle corruption, by working with the political tools at their disposal. Collaboration among Canadian officials and their foreign counterparts can help foster more holistic and integrated approaches to global development across many spheres, replacing the one-off, time-limited and 'siloed initiatives that are currently commonplace.

Canada can also facilitate links and find common ground among leaders in developed, developing and emerging countries by bringing technical expertise and local knowledge together while aiming to solve pressing global challenges. Skilled Canadian officials who understand global political dynamics can help negotiate collaboration among the ever expanding cast of players and conflicting special interests that exist among national governments, UN agencies, civil society organizations, corporations, academics, philanthropists and activists. They can help limit the fallout from disengagement by any of these groups or the assertive lobbying efforts of groups that are not supportive of the global health agenda (e.g., International

Tobacco Growers Association). Whereas global efforts to protect domestic health may have historically been used to exclude developing countries from international decision-making (113), Canada can now use such efforts to include developing countries. Perception of a 'democratic deficit' and 'equality-influence' gap in global governance can be mitigated with greater effort (114, 115). Canada is in a position to take a leading role in bridging globally divergent perspectives in all of these areas, which offers the potential to reap benefits that will reduce health risks domestically.

Link health to Canada's foreign policy goals

Addressing emerging global issues from a health perspective can also serve Canada's foreign policy goals. Efforts in this area can help keep Canadians safe, prosperous and influential on the global stage.

Health can be used by Canada as a gentler platform for raising contentious issues. For example, even when Canada's relationship with China was 'cool' or 'frosty' by all accounts (116, 117), significant progress was achieved with respect to collaboration in health, as evidenced by the recent Canada-China Plan of Action for Cooperation on Health for 2009-2011, the Canada-China Policy Dialogue on Health (118), and the prominence of global health issues in the Canada-China Joint Statement (119). Health is also a good way for Canada to frame challenges related to climate change and the environment (120-124) as well as a common goal through which to manage potential conflicts among diverse interest groups, whether they represent business and trade or development and human rights (14). With so many sectors affecting health and vice versa, the Canadian government can use and has used this issue to build respectful relationships with other countries as a way in to addressing challenges that exist in other areas.

Greater involvement in global health diplomacy may also be a way for Canada to build goodwill and elevate its reputation on the international stage, while attracting additional 'soft power' that is increasingly important in contemporary global politics (125, 126). China, for example, has long sent medical teams and health ministerial delegations to Africa as part of its campaign to build, maintain and deepen its international relationships. Since 1964, the country has sent an estimated 15,000 doctors to 47 African countries, and these doctors have treated an estimated 180 million people (127). Much of China's current influence on the continent has been credited to this long-term initiative (127). Former US Senate Majority Leader William H. Frist argued for a similar use of global health diplomacy in the American context: "The fight for global health can be the calling card of our nation's character in the eyes of the world. We have the opportunity to become heroes in countless societies by increasing what we know and sharing what we have learned" (128). It is also for this reason that former US Secretary of Health and Human Services Tommy Thompson argued that global health diplomacy "can be hugely successful, and much less expensive, as a means of fighting terrorism" (129). When it is hearts and minds that matter, health can help deliver (125, 130).

Addressing emerging global issues with a health perspective can help enhance the fading 'Canadian brand' and leverage its enhanced influence for other political priorities. Placing HIV/AIDS at the centre of its approach to Africa certainly enhanced the reputation of George W. Bush's administration at a time when America's global image was affected by activities in Iraq and elsewhere. Likewise, the delivery of healthcare services has been a cornerstone of Cuba's diplomacy efforts. Health can similarly be a common goal that bridges regional divides and strengthens the country's civic identity. Citizens are likely to be enthusiastic supporters. Indeed, an Angus Reid Public Opinion poll in January 2010 showed that 89% of Canadians wanted their country to become a global leader in health research (131). Championing health in both domestic and global forums would help to promote Canadian values and gain political support at home and abroad. These developments in turn will reduce health risks domestically.

Link health to Canada's economic goals

There are also potential economic benefits to be obtained from giving greater attention to emerging global issues using a health lens. In today's challenging economic climate, addressing global issues is an opportunity to build the constituent elements of the world's interdependent and globalized economy (7, 97). Healthy

populations are necessary for productive workforces, which innovate and manufacture better products that can more easily be marketed domestically and abroad. Greater international trade can be beneficial for all parties, but is only possible if there are healthy people capable of buying and procuring the goods and services to be exchanged. As the U.K. government articulated so well: "In our interdependent world, we cannot guarantee environmental, physical or economic security in the U.K. without promoting it overseas. Poor health is more than a threat to any one country's economic and political viability – it is a threat to the economic and political interests of all countries. Working for better global health is integral to the UK's modern foreign policy (7, p. 14)." For the same reasons it can be argued that efforts to address the global issues that affect health can serve as a core part of Canada's economic policy.

Further investment in health-based approaches to emerging global issues may also help Canada develop its own knowledge-based 'global health industry' of researchers, educators, practitioners, consultants and entrepreneurs with the aptitudes, skills and expertise necessary to implement health interventions around the world (20). The country can share best practices and learn from the experiences of others in overcoming common policy challenges.

2. Clearly articulate the value-for-money proposition

Addressing emerging global issues has the potential to have significant impacts on the health of Canadians. However, potential is not enough. Case studies are needed about how, and under what conditions, action to protect Canadians from emerging global issues has been both effective and cost-effective. Case studies from other countries might be instructive as well. New empirical research is also needed to measure the benefits and costs of policy and program options. These case studies and empirical researcher needed to be knitted together, in turn, into a business case for international activities that can benefit the health of Canadians.

3. Communicating benefits to Canadians

As citizens of the 'globalization nation,' Canadians are well aware of how emerging global issues can affect their health. However, the benefits of the preferred option(s) need to be communicated effectively to Canadians so they can appreciate that our open borders bring significant benefits, and that the negative consequences of these open borders can be addressed, or their risks mitigated in significant ways. Federal government leaders can shoulder part of the burden for such communication. However, civil society should also speak to Canadians about how emerging global issues are affecting them. Canadians would then have a second motivation for supporting international action. Their first motivation, altruism, will then have a helpful complement. A political coalition focused on communicating the benefits to Canadians of international action would be a way to harness the energy in civil society to address these issues. At present, no such coalition exists, at least not in a visible way like health-focused political coalitions, such as those focused on cancer and heart disease.

Looping back to our understanding of the problem

Given the Canadian federal government's particular interest in better understanding emerging global issues that may affect the health of Canadians, it's important to ask what can be gleaned from a review of these implementation considerations that could affect our understanding of these issues. Three points seem most striking.

First, the communication of these emerging global issues, their real and potential impacts on the health of Canadians and the business case for specific actions to address these impacts needs to be understood as a current part of the problem, and an important part of a future response. With the First Ministers' Accord on Health Care Renewal set to expire in 2014, Canadians need to know that a strengthened health system is one

key component of an investment in their health, but that there are many others as well. Moreover, they can become part of the country's risk-monitoring strategy given their connections to friends and family abroad.

Second, the communication of the win-win potential for sectors that can achieve their own objectives while also having a positive impact on the health of Canadians needs to be understood as part of the problem and part of the future response as well. What are emerging now as global issues that can affect Canadian's health will be the 'new normal' in months or years. Canada needs a dynamic approach to monitoring and engaging with these issues. No one has a better grasp of emerging global issues than sector specialists. What is lacking is a way to engage them periodically in assessing which of these issues has health consequences and where win-win opportunities can be found in addressing them.

Third, an appreciation of the scale and complexity of the potential problems and of any actions needed to address these problems is another part of the problem and future response. Working 'across government' on risk identification and management has become essential. The ability to 'connect the dots' requires a good understanding of where the dots are and what they mean. Again, Canada needs a dynamic approach to monitoring and engaging with emerging global issues. The scale and complexity of the issues involved require it.

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