PROTECTING OUR COLLECTIVE FUTURE:
Renewing Canada's Role in Global Health

MARCH 2025

Protecting our Collective Future: Renewing Canada's Role in Global Health

Report of the Canadian Academy of Health Sciences and the Royal Society of Canada

Expert Panel on Canada's Role in Global Health

March 2025

Project Lead
William Ghali

Expert Panel
Tim Evans (Co-Chair)
Kelley Lee (Co-Chair)
Chantal Blouin
Nadine Caron
Jocalyn Clark
Robert Greenhill
Joanne Liu
Francis Omaswa
Jane Philpott
K. Srinath Reddy

Secretariat
Prativa Baral
Gatien de Broucker
Daniel Eisenkraft Klein
Leah Shipton

Peer Reviewers
Robert Armstrong
Margo Greenwood
Lynn McIntyre
Peter Singer

Suggested citation for Policy Briefing Report
Evans, T., Lee, K., Blouin, C., Caron, N., Clark, J., Greenhill, R., Liu, J., Omaswa, F., Philpott, J., Reddy, K. *Protecting our Collective Future: Renewing Canada's Role in Global Health.* Royal Society of Canada and Canadian Academy of Health Sciences. 2025

The opinions expressed in this report are those of the authors and do not necessarily represent those of the Royal Society of Canada or the Canadian Academy of Health Sciences.

FOREWORD

The Canadian Academy of Health Sciences (CAHS) and Royal Society of Canada (RSC) are delighted to jointly release this report, titled *"Protecting our Collective Future: Renewing Canada's Role in Global Health"*. The work for this report was commissioned by the two organizations in June 2023, as Canada and the world emerged from the COVID-19 pandemic. An overriding goal for this work is to identify opportunities for Canada to enhance its leadership in advancing health globally, while also contemplating some key questions.

What impact has the pandemic had on Canada's engagement in global health? What are some of the urgent next steps as we emerge from the pandemic, so that Canada can be true to its announced values of equity, human rights, and global citizenship? How can we learn from the history of Canada's engagement in global health and the COVID pandemic to shape future strategies and opportunities?

To address these questions, our two organizations tasked Dr. William Ghali (University of Calgary) to convene an expert panel for this work and to provide peer review oversight. Two Canadian leaders in the realm of global health — Dr. Kelley Lee (Simon Fraser University) and Dr. Tim Evans (Concordia University) — were appointed as panel co-chairs, and they in turn worked with the convenor, CAHS and RSC to invite and appoint a diverse group of expert panellists who bring deep and diverse expertise to the work and questions outlined above. These experts were supported by a project secretariat composed of Canada's future leaders in global health — a cadre of talented and dynamic Canadians pursuing graduate studies relating to global health.

We are indebted to the expert panel and Secretariat members, as they all volunteered time and expertise, participating in regular meetings spanning more than 15 months. The result of their work and effort is a compelling report that uses a combination of historical and contemporary data to answer the questions stated above in a comprehensive manner.

This report is yet another product arising from the fruitful collaboration between CAHS and RSC. This partnership continues to contribute invaluable insights into the health issues and strategic grand challenges of our time. We close by again thanking all individuals involved in this report for their service to Canada and, indeed, the world.

Alain-G. Gagnon, President, Royal Society of Canada
Trevor Young, President, Canadian Academy of Health Sciences
William Ghali, Vice President Research, University of Calgary

EXECUTIVE SUMMARY

As we near the second quarter of the twenty-first century, the global health terrain is shifting in important ways. The COVID-19 pandemic, accelerating climate crisis, rising geopolitical instability, displacement of populations, alarming wealth and income inequalities, and greater economic instability, among other major concerns, are coinciding to create what is being described as a "polycrisis." Together, these crises demonstrate the clear connections between global and domestic health and well-being, and the even greater importance of effective cooperation across countries.

It is in this context that an Expert Panel was jointly convened by the Royal Society of Canada (RSC) and the Canadian Academy of Health Sciences (CAHS) to provide strategic insights and advice on Canada's role in global health over the next two decades. We approached this task not as an exhaustive search of the literature, as one would for a systematic review of evidence on the effectiveness of a clearly defined intervention, nor as a research study informed by immutable facts or truths. While we drew upon existing literature and evidence, we were also informed by a myriad of external consultations and the collective and diverse expertise, experience and explicitly stated values of Panel members. These were brought together as a strategic opportunity to reflect upon Canada's past, present and future role in global health. The findings from this undertaking led to our recommendations, which we were ultimately tasked to provide, to renew Canada's global health role amid a rapidly changing world facing interconnected challenges.

Our starting point was that Canada is a vital part of this changing world and must thus continue to actively engage in global health cooperation **to advance health and well-being both at home and abroad.** For the purposes of this report, the Panel defines global health as an interdisciplinary field of study, policy and practice that encompasses the health and well-being of human and other forms of life on a planetary scale. Advancing global health, in turn, depends on three perspectives: a) the need for intergenerational protection and promotion of all life and of the earth's ecosystems that sustain life (planetary); b) the need to address unfair, avoidable or remediable differences between groups of people, whether those groups are defined socially, economically, demographically, geographically or by other dimensions of inequality (equity); and c) the need to move from siloed to holistic thinking and practice (integration). Most importantly, our definition of global health emphasises the close connection between the global and domestic spheres.

KEY FINDINGS AND RECOMMENDATIONS

For more than a century Canada has held a distinguished track record in contributing positively to health cooperation across the world. Since the ground-breaking discovery of insulin in 1922, Canadians have helped to advance the health and well-being of people around the world through an array of distinctive contributions.

The Panel's analysis found that over the last two decades, sustained, high-level leadership and financing through efforts like the Muskoka Initiative for Maternal Neonatal and Child Health (MNCH) and the Feminist International Assistance Policy (FIAP) decade of action have led to impressive improvements in reproductive, maternal and child health and nutrition, and the control of infectious diseases globally. There remain, however, important persistent challenges across multiple dimensions of health and wellbeing and the life-courses of populations around the world, as well as with capacities and resilience of national health systems, especially in low- and middle-income countries. It is the Panel's view that more concerted policy, research, and investment attention are needed from Canada and its global partners to improve health and health equity in the years ahead. Of particular attention are health challenges like non-communicable diseases, including mental health and the social and commercial determinants of health, that have been relatively absent from the mainstream of Canadian global health investment despite important pioneering research and innovation efforts of the Canadian Institutes of Health Research (CIHR) and Grand Challenges Canada.

The Panel also considered the implications of the COVID-19 pandemic that stress-tested Canada's domestic capacity to respond to a major public health emergency and, at the same time, to participate in the global response to controlling the worldwide spread of a novel coronavirus. This experience revealed the inseparability of domestic and global health through, for example, the issue of equitable access to COVID-19 vaccines. The

importance of policy coherence to advancing Canada's international standing, and the challenges of advancing collective action in an increasingly divided world, were also clearly demonstrated.

Building on an analysis of the last twenty years including the COVID-19 pandemic; recognizing the country's history of colonisation and nation-building, and ongoing processes of reconciliation with Indigenous Peoples; and responding to profound shifts in commitment to multilateralism impacting the global landscape over the next two decades, the Panel identified seven key findings. The first four findings set out **"what"** issue areas require priority attention and where Canada's leadership could make a substantial contribution. Importantly, each issue area embodies domestic-global interconnectedness by recognizing that health in Canada cannot be provided, protected or promoted without engaging in global cooperation. The remaining three findings concern **"how"** Canada can effectively take forward these priority issue areas through clear strategy, targeted investments in research and innovation systems, and capacity building to support Canadian leadership.

THE "WHAT" — FOUR PRIORITY ISSUE AREAS

1. Build Equitable Universal Health Systems Centred on Women and Primary Care

As countries work to achieve the Sustainable Development Goals in health, there is growing policy convergence around universal health coverage (UHC) and primary healthcare (PHC) campaigns. The UHC/PHC momentum could be strengthened through Canada's leadership and high yielding investments in women's and children's health and nutrition, recognizing this constituency to unify health systems across the lifespan and all causes of illness (infectious, chronic, or injury-related). Furthermore, Canada's commitment to improve the health and rights of women and girls around the world and other social drivers of health as central considerations to UHC/PHC policy and programs should continue to be reinforced.

The UHC/PHC policy nexus represents an opportunity for Canada to align its development assistance across the range of global health initiatives (Gavi, the Vaccine Alliance (GAVI), the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM), the Global Financing Facility (GFF), Nutrition International (NI)) as well as to make more deliberate connections to the domestic challenges it is facing with respect to UHC and PHC. In this regard, the Panel finds that Health Canada and Global Affairs Canada, in collaboration with other partners, could establish an **"accelerated UHC/PHC strategy"** that catalyses learning systems for UHC/PHC with a triple focus on women's health, the health workforce and innovative financing.

As a key driver of this strategy, Canada could build on an impactful domestic breakthrough that provides universal contraceptive coverage to catalyse a commensurate international effort as part of women's PHC worldwide. Whether part of Canada's G7 presidency, or a global coalition of countries from the global North and South, the target would be to provide at least 100 million more women, thereby more than halving unmet need among women and adolescents to a full range of modern contraception by 2032.

2. Advance One Health Security through Sustainability and Equity

The reality of Canada's deep global connectedness, the lessons from the COVID-19 pandemic, and the rapidly evolving polycrises, all inform the Panel's finding that a new approach to health security is urgently needed that embeds both sustainability and equity as core principles. To achieve this, the Panel identifies three key opportunities.

First, there is an imperative for a more holistic notion of **One Health Security** that: a) centrally locates the interconnectedness of human, animal and environmental security; b) is informed by primary prevention and mitigation measures; and c) is held accountable by metrics for sustainability and equity. Second, and central to this framework, is a **rebalancing of risk assessment and mitigation practices** that span upstream drivers of risk, leading to pathogen spillover such as livestock management practices or climate change mitigation, and downstream preparedness and response measures such as increased investments in domestic biomanufacturing and other medical countermeasures. Third, the Panel recognises the need to **catalyse and consolidate core capacities** for One Health Security including nurturing a standing workforce with readiness to respond to health emergencies as part of broader humanitarian and disaster relief. This also requires investing

in essential state and non-state actors, from the local to global levels, that enable key functions of society to operate during emergencies.

Canada has timely opportunities to advance a new sustainability and equity-focused approach to health security by leveraging the wisdom of Canada's Indigenous peoples of prioritising inter-generational protection and promotion of health and well-being, recognizing our acute and growing vulnerabilities to climate change, and ongoing efforts to reduce social and health inequities. A One Health Security framework, for example, could guide Canada's commitments to the Conference of the Parties (COP) 28 focused on climate change and health, and ongoing efforts to prevent and prepare for emerging pandemic threats including the WHO pandemic agreement currently under negotiation.

3. Renew Canadian Leadership in Health Promotion and Protection through a focus on Well-being

Building on a distinguished legacy, the Panel concludes that Canada should renew its leadership in health promotion and protection through support for the wellbeing movement. Canada's active participation in the Well-Being Economy Alliance, seeking to advance "an economy to serve people and planet", offers a strategic entry-point for a host of increasingly important health agendas. This includes new actions to mitigate the harms, and amplify the benefits, arising from the **commercial determinants of health (CDOH)**, defined as "the systems, practices, and pathways through which commercial actors drive health and equity". Building on the pathfinding WHO Framework Convention on Tobacco Control, this could take the form of supporting policy diffusion and learning across countries about the effective governance and regulation of health-harming industries.

Recognizing the major challenges arising from substance use and abuse, with nearly 300 million people worldwide using illicit drugs, Canada should lead a **new global task force addressing the toxic drug crisis**. The task force would focus largely on opioids (including fentanyl), and identifying opportunities to tackle the complex mix of global and domestic factors driving this crisis.

4. Urgently Tackle the Health Workforce Crisis

The Panel finds that the health workforce constitutes the most important resource to enable countries to meet rapidly growing needs and emerging challenges be it universal healthcare, one health security or health promotion, protection and well-being. Yet the health workforce remains woefully neglected as a primary focus for policy and research. All countries are facing chronic and acute crises with severe repercussions for population health and well-being. There are multiple manifestations of this crisis ranging from severe shortages of health personnel in areas of greatest need, to systemic shortfalls in salary, safety and support of women who constitute the majority of the health and care workforce, to within and cross-country health worker migrations that are exacerbating health and social inequities.

Canada's acute and chronic health workforce crisis shares these symptoms with a growing reliance on internationally educated health workers who now constitute nearly 15% of the country's health workforce. This reliance encompasses an explicit pro-health worker immigration policy fuelled by federal funding and immigration fast-tracking that risks breaching the WHO Code of Conduct for Ethical Recruitment of Health Workers. Evidence generated for the Panel suggests that Canada realizes more than CDN$1 billion training subsidy annually from not paying for the training of these workers. This is more than half of what Canada spends on development assistance for health each year.

In response, the Panel believes that Canada should be the first country to place the health workforce as a flagship priority to usher in a new era of global health capability defined by intrepid innovation, joint learning, solidarity and collaborative multilateralism. The Group of Seven (G7) meeting hosted by Canada in 2025 provides a timely opportunity to announce a **"Canadian Emergency Workforce for Health Innovation Program (CEWHIP)" with a goal of achieving Net Zero Poaching by 2035**. This intersectoral and intergovernmental initiative could catalyse a decade of innovation in the training, recruitment, and retention of health workers in partnership with institutions in low and middle-income countries (LMICs). CEWHIP would position Canada as a leader in the

generation of health workforce solutions that reconcile domestic with international labour market realities. These solutions are desperately needed in all countries to reach and sustain their health goals.

THE "HOW" — THREE STRATEGIC AREAS OF ACTIONS

1. Set a Clear Global Health Strategy

The current polycrises pose profound threats to the health workforce, universal health coverage, One Health Security, and health promotion and well-being across all societies. All countries, including Canada, require a clear overall strategy to navigate this rapidly evolving and complex context. Most importantly, the COVID-19 pandemic reminded us how health in Canada is inextricably linked to events and drivers far beyond our national borders. Advancing domestic and global health together, not as trade-offs, but as interconnected policy goals is thus essential. The many players, competing priority issue areas, and varied initiatives shaping the global health policy environment also challenge Canada to be more coherent in its overall priorities, principles, and activities. An overall strategy would thus guide Canada's positioning across these different domains and define Canada's distinct contributions to global health.

We therefore support the calls by other Canadian scholars for **an explicit and coherent strategy setting out a clear vision, priorities, governance, resources and monitoring**. A Canadian global health strategy would include a compelling rationale that federal, provincial, territorial, and Indigenous governments can support in a non-partisan way. The strategy would then guide targeted investments in priority issues areas such as the health workforce, universal health coverage, One Health Security, and health protection and promotion.

2. Bolster Research and Innovation Systems for Global Health

There is a need for a complementary strategy focused on research and innovation systems. Beyond the transformative importance of science and technology to improve health, this strategy recognises that Canada needs to be more explicit about how it is engaging in the increasingly global landscape of life sciences and digital innovation to improve health. Strategic considerations should include finding resources for critical priorities such as the health workforce or One Health; redressing imbalances in research capacity in LMICs and among Indigenous communities; and protecting public trust.

These considerations should be incorporated into a Canadian strategy that embraces the interdependence of domestic and global health, giving particular attention to research agendas linked to universal health coverage/ primary healthcare, one health security, and health promotion and well-being. Such a strategy should include partners from across the public, private and academic sectors, with whom strategic alignment can inform targeted investments. **Such a strategy might be entitled "ARRISE": Accountable and Responsive Research and Innovation Systems including in Emergencies**, informed by exemplars in other countries and regions such as the EU Horizons Strategy.

3. Fortify Leadership Capacity in Global Health

Canadian capacity to lead in global health, to advance strategic priorities, requires people with appropriate technical knowledge and content expertise; leadership, negotiation and collaboration skills; and experience of working in global health settings and with diverse constituencies. The Panel finds that Canada's leadership capacity to effectively engage in global health should be strengthened in three ways.

First, Canada should **appoint a Global Health Ambassador**. This high-profile role would serve as a leader and coordinator for effectively advancing Canada's global health strategy, facilitating cross-ministerial and cross-jurisdictional collaboration, and for achieving Canadian objectives through engagements with domestic and global partners.

Second, a **Canadian Global Health Hub (CG2H)** should be formed, chaired by the Global Health Ambassador, to maximize the use of available resources. By providing a mechanism for convening wide-ranging expertise , the CG2H could mobilize timely evidence synthesis and other inputs to inform policy and decision making when

needed. The experiences of the global health hub in Germany and the Scientific Advisory Committee on Global Health in Canada could help to inform the appropriate institutional arrangements for such a hub.

Third, the Panel identifies the need to more purposefully train next-generation Canadian leadership in global health through a **Global Health Diplomacy and Innovation Program**. With an explicit mandate to deepen Canada's global health expertise and leadership, and informed by similar programs in Thailand and Europe, this program would develop a cadre of highly-qualified personnel capable of advancing Canada's global health strategy.

7 KEY FINDINGS

WHAT

Equitable UHC: Women & Primary Care

Catalyse learning systems for UHC/PHC with a triumvirate focus on women's health, including universal contraceptive coverage, the health workforce and innovative financing.

One Health Security: Sustainability & Equity

Implement a new One Health Security framework prioritizing sustainability, equity, and prevention, balancing upstream and downstream risks across humans, animals, and the environment, with a standing responsive workforce.

Health Protection & Promotion: Wellbeing

Renew leadership in health promotion by advancing the well-being movement, addressing the commercial determinants of health, and leading a new global task force on the toxic drug crisis.

Health Workforce Crisis

Transform the health workforce from a constraint to a catalyst through a Canadian Emergency Workforce for Health Innovation Program (CEWHIP) with a goal of achieving Net Zero Poaching by 2035.

HOW

Clear Global Health Strategy

Develop and implement a coherent global health strategy that aligns domestic and global health goals, sets clear priorities, and ensures targeted investments in the health workforce and the "what".

Research & Innovation Systems

Bolster a new strategy towards Accountable and Responsive Research and Innovation Systems including in Emergencies (ARRISE) to harness life sciences and digital innovation, align global health priorities, and strengthen partnerships across sectors.

Leadership Capacity

Strengthen Canada's global health leadership by appointing a Global Health Ambassador, creating a Canadian Global Health Hub, and developing a Global Health Diplomacy and Innovation Program.

LAND ACKNOWLEDGEMENT

The Convenor, Expert Panel and Secretariat members based in Canada, who wrote and contributed to this report, respectfully acknowledge that the lands on which we work are the homelands of First Nations, Inuit, and Métis Peoples. Specifically, this work was conducted in the following locations:

Montreal, Quebec which is situated on the traditional territory of the Kanien'kehà:ka. This place has long served as a site of meeting and exchange amongst many First Nations, including the Kanien'kehá:ka of the Haudenosaunee Confederacy, Huron/Wendat, Abenaki, and Anishinaabeg.

Vancouver, British Columbia which is situated on the unceded and traditional territories of the Coast Salish, in particular the xʷməθkʷəy̓əm (Musqueam), Sḵwx̱wú7mesh Úxwumixw (Squamish), səlilwətaɬ (Tsleil-Waututh), q̓íc̓əy̓ (Katzie), kʷikʷəƛ̓əm (Kwikwetlem), Qayqayt, Kwantlen, Semiahmoo and Tsawwassen peoples.

Calgary, Alberta which is situated on the traditional territories of the peoples of Treaty 7. These peoples include the Blackfoot confederacy: Siksika, Kainai, Piikani, îethka Nakoda Nations: Chiniki, Bearspaw, Goodstoney and Tsuut'ina Nation. We acknowledge that this territory is home to the Otipemisiwak Métis Government of the Métis Nation within Alberta Districts 5 and 6.

Kingston, Ontario which is situated on the the traditional homeland of the Anishinaabe, Haudenosaunee and the Huron-Wendat.

ACKNOWLEDGEMENTS

The Expert Panel wishes to thank Russel MacDonald (Royal Society of Canada) and Gladys We (Bridge Research Consortium) for their administrative assistance in producing this report.

LIST OF ABBREVIATIONS

ABS	access and benefits sharing
ACT-A	Access to COVID-19 Tools Accelerator
CAGH	Canadian Association for Global Health
CAHS	Canadian Academy of Health Sciences
CEPI	Coalition for Epidemic Preparedness Innovations
CIC	Canadian International Council
CIDA	Canadian International Development Agency
CIHR	Canadian Institutes of Health Research
COVAX	COVID-19 Vaccines Global Access
COVID-19	coronavirus disease 2019
CRCC	Canada Research Coordinating Committee
CSO	civil society organisation
ENHR	essential national health research
DAC	Development Assistance Committee
DIF-H	Development Innovation Fund - Health
FCTC	Framework Convention on Tobacco Control
FGHI	Future of Global Health Initiatives
G7	Group of Seven countries
GAC	Global Affairs Canada
GACD	Global Alliance on Chronic Diseases
GAVI	Global Alliance on Vaccines and Immunization
GBD	global burden of disease
GCC	Grand Challenges Canada
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GFF	Global Financing Facility
GHI	global health initiative
HIV/AIDS	human immunodeficiency virus/acquired immunodeficiency syndrome
IDA	International Development Agency
IDRC	International Development Research Centre
IEHW	internationally educated health workers
IHR	International Health Regulations
IMF	International Monetary Fund
INSPQ	Institut National de Santé Publique du Québec
LMIC	low- and middle-income country
MDG	Millennium Development Goal
MNCH	maternal, neonatal and child health
MSF	Médecins Sans Frontières
NCD	non-communicable disease
NFRF	New Frontiers in Research Fund
NGO	nongovernmental organisation
NI	Nutrition International
NIH	National Institutes of Health (US)
NRC	National Research Council of Canada
NSERC	Natural Sciences and Engineering Research Council of Canada
NSF	National Science Foundation (US)
ODA	official development assistance
OECD	Organisation for Economic Cooperation and Development
PAHO	Pan American Health Organization
PHAC	Public Health Agency of Canada
PHC	primary health care

PPE	personal protective equipment
RSC	Royal Society of Canada
SAC-GH	Scientific Advisory Committee - Global Health
SDG	Sustainable Development Goal
SSHRC	Social Sciences and Humanities Research Council
STD	sexually transmitted disease
UHC	universal health coverage
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNCED	UN Conference on Environment and Development
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNODC	UN Office on Drugs and Crime
USAID	United States Agency for International Development
WEF	World Economic Forum
WHA	World Health Assembly
WHO	World Health Organization
WTO	World Trade Organization

LIST OF BOXES, TABLES AND FIGURES

Box 1: Our core values and principles
Box 2: A Canadian health initiative gone global
Box 3: Indigenous practices as model for One Health Security
Box 4: Equity and sustainability in the spread of highly pathogenic avian influenza (H5N1)
Box 5: Canadian leadership to tackle the global opioid crisis
Box 6: The Global Challenge of Population Aging
Box 7: The de facto "subsidy" to Canada's health system from not paying for the training of internationally educated health workforce in Canada
Box 8: Skills Mobility Partnerships for Global Skills Development
Box 9: Grand Challenges Canada: Leveraging leadership roles in multilateral initiatives to accelerate scale of investments in innovation

Figure 1: Total ODA disbursements related to gender equality (US$)
Figure 2: Canadian official development assistance for health, 1997-2023
Figure 3: Canadian total flows of global health financing, 1990-2023
Figure 4: Global mortality rates and number of deaths by age, 1990–2022
Figure 5: Total fertility rate, globally and by global burden of disease super-region, 1950–2100
Figure 6: Official development assistance as a percentage of gross national income for Canada and all DAC countries, 1960-2020
Figure 7: CIHR funding of global health research by primary focus, 2000–2015
Figure 8: Vaccine doses paid for by Canada from December 2020 to May 2022

Table 1: Summary of available global health strategies of selected countries

TABLE OF CONTENTS

1.0 Introduction 13

2.0 The Work of the Joint RSC-CAHS Expert Panel 13

3.0 Global Health Definition, Values and Principles 15

3.1 Defining Global Health 15

4.0 Canada's Contributions to Global Health 16

4.1 The emergence of "global health" 16

4.2 Canada during the MDG and early SDG periods 17

4.3 Contributions to global health research and innovation 24

4.4. Lessons arising from the twenty year retrospective analysis 25

5.0 Lessons from Canada's Global Health Role During the COVID-19 Pandemic 26

5.1 Domestic Response 26

5.2 Global Response 28

6.0 Key Findings and Recommendations 30

Conclusion 44

Appendix A: Expert Panel and Secretariat Biographies 46

Appendix B: Engagement Activities of the Expert Panel 50

Appendix C: Comparison of Global Health Strategies of Selected Countries 51

Appendix D: Summary of Previous Reports, Articles and Statements on Canada's Role in Global Health 54

References 57

1.0 INTRODUCTION

COVID-19 is a defining global crisis, disrupting and transforming the world with profound consequences for governments, institutions, cities, communities, families, and individuals. …COVID-19 pandemic recovery is about much more than the ability to contain and control the disease; it is symbolic of the commitment and courage to challenge the status quo, envision what it means to thrive as people and planet, and go beyond building back better to deliver the future that is wanted and needed.

Aragón de León et al., 2021[1]

As we near the second quarter of the twenty-first century, the global health terrain is critically shifting. An increased risk of pandemic events such as COVID-19, growing climate crisis, rising geopolitical and economic instability, alarming wealth and income inequalities, among other large-scale challenges, are coinciding to create what is being described as a "polycrisis." Importantly, this "cluster of related global risks with compounding effects, such that the overall impact exceeds the sum of each part,"[2] transcends national borders, inextricably linking the domestic and the global. This includes factors shaping health and well-being in every country.

At a time when collective and collaborative action is essential to confront these threats, the capacity for societies to work together is constrained by increased social polarisation, and decreased trust in public institutions, big business, and scientific expertise. This includes a declining commitment to institutions underpinning global health governance led by the World Health Organization (WHO), the UN's specialised agency for health. In short, at a time when humanity must work more cooperatively together to address simultaneous crises and severe threats, the processes and actions that enable collective ways forward are far from clear.

2.0 THE WORK OF THE JOINT RSC-CAHS EXPERT PANEL

In this context, and as the COVID-19 pandemic was subsiding, this Expert Panel was jointly convened in April 2023 by the Royal Society of Canada (RSC) and Canadian Academy of Health Sciences (CAHS). The Panel was composed of two co-chairs and eight members selected to contribute a broad range of disciplinary expertise and experience from government, academia, healthcare and public health practice, scientific publishing, and civil society. The Panel assembled a wealth of lived and professional experience from a wide range of settings in Canada and worldwide, spanning local communities to global health institutions. All Panel members served in an individual capacity without compensation. The Panel was helpfully supported by a small part-time Secretariat composed of four Canadian doctoral students from three universities (see Appendix A for biographies).

The Panel was tasked with providing strategic insights on Canada's distinctive role in global health and identifying opportunities to enhance its leadership. A key audience targeted for this report is the Canadian federal government and relevant agencies, notably Global Affairs Canada and Health Canada including the Public Health Agency of Canada. However, aligned with our conclusion that global health is a whole-of-government endeavour, as illustrated by COVID-19, other federal departments and portfolios including Public Safety Canada; Innovation, Science and Technology; Agriculture, Environment and Climate Change; Transport; and Finance are highly relevant. In addition, given the devolved nature of Canada's health system, and the domestic impact of global health, provincial/territorial and local levels of government are also essential target audiences. Moreover, the Panel also emphasises the need for a whole-of-society approach which requires involvement of diverse constituencies outside of government including academia, civil society organizations, community groups, and the private sector.

The work of the Panel was guided by three overarching questions:

- How can we characterise Canada's role in global health since the late twentieth century?
- What lessons can we learn from the COVID-19 pandemic?

- How can Canada strategically enhance its future participation in global health over the next 20 years?

To fulfil this task with the resources available, this undertaking was not conducted as a research study supported by an exhaustive search of the existing literature, and data collection and analysis. Instead, our methodological approach was shaped by the nature of the Panel's assigned task to give expert advice, supported by evidence, alongside acknowledgement of different perspectives and normative frameworks. While key literatures were critically reviewed, and available primary and secondary data were gathered to inform our analysis, our methodology prioritised a process of engagement, discussion, consultation and dialogue for more than a year. Our findings and recommendations arose from this iterative and discursive process.

Our deliberations began with virtual Panel meetings held between April 2023 and June 2024. The meetings were initially focused on the first two questions — Canada's role in global health since the late twentieth century, and the lessons learned from the COVID-19 pandemic. This was followed by a more prospective assessment of how Canada should position itself on priority global health challenges and opportunities in coming decades. These meetings were supported by the important work of the Secretariat which reviewed relevant scholarly, policy and other literature, and gathered data to inform deliberations. In the course of these discussions, the Panel agreed on the importance of explicitly setting out its definition of global health, and the values and principles that underlie the Panel's positioning (see below).

This initial analysis from Panel deliberations were then used as the basis for engaging a broad range of individuals and organizations concerned with global health, in Canada and internationally, from 2023 to June 2024. Insights gathered were used to support an iterative process that substantially shaped the findings and recommendations of this report. Importantly, the Panel recognised the importance of reviewing a broad range of data sources and engaging with diverse constituencies to inform its deliberations. Given available resources, the inputs to this report include:

A. Grey and peer-reviewed literature

- previous studies and reports on Canada's role in global health;[3,4,5,6]
- policy statements and reports related to Canada's role in global health; and
- editorials, commentaries and evaluations relevant to specific findings.

B. Original analyses

- an assessment of the de facto education subsidy Canada receives through recruitment of Internationally Educated Health Workers (see Box 7);
- boxes illustrating specific Canadian activities in global health; and
- review of global health strategies of other countries.

C. Consultations (see Appendix B)

- Secretariat-led semi-structured interviews with Panel members;
- Secretariat-led semi-structured interviews with 18 key experts identified by Panel members and snowball technique;
- focus group discussion by global health students and early career scholars in Canada (capped at 32 participants);
- open engagement sessions with members of the RSC (in-person) and CAHS (virtual); and
- presentations and discussions with groups including CanWaCH, the Scientific Advisory Committee on Global Health (SAG-GH)7; Global Affairs Canada; Public Health Agency of Canada (PHAC); the Permanent Mission of Canada in Geneva; World Health Organization in Geneva; and Science Council of the Canadian Institutes of Health Research (CIHR).

D. Peer Review

The draft report underwent peer review in September 2024 by subject experts selected by the RSC and CAHS. The Panel thanks the reviewers for their comments and feedback which were used to revise and finalise this report.

These extensive deliberations, diverse sources, broad engagements, and peer review process have led to seven key findings with recommendations. These are intended to encourage reflection, inform discussion, and motivate action to renew Canada's role in global health during turbulent times. While an analysis of this kind might be expected to go broader and deeper, the seven key findings are intended to be directional for research, policy, and practice. All will require further engagement and reflection to become roadworthy.

3.0 GLOBAL HEALTH DEFINITION, VALUES AND PRINCIPLES

Given a rapidly changing world, and the evolving discourse on what constitutes global health, the Panel defined its terms and framework as follows:

3.1 Defining Global Health

The Panel's working definition of global health is informed by planetary, integrative and equity-based perspectives. A *planetary perspective* recognises "the fundamental and existential importance of the interconnectedness of all life — other humans, nonhumans, and the earth."[8] This perspective draws upon Indigenous ways of being-knowing-doing which, while encompassing diverse and complex knowledge systems, share a worldview that reality is "an open, infinitely complex, interconnected, self-organising, dynamic and self-renewing system of life."[9] Humans, in turn, are "part of this system and are the designated custodian species of this reality whose role it is to sustain creation by caring for and looking after all of creation on earth, in the sky and in between both. … all entities, including ourselves, interact in reciprocal relationships and thus each interaction impacts the whole system."[5] Importantly, this custodial responsibility extends across many generations, leading to the prioritising of longer-term, forward-looking, and sustainable action.[10] In the era of Anthropocene, however, there is a widespread failure to recognize this custodial responsibility with growing recognition that the consequences are dire for planetary health. From this perspective, the Panel defines global health as dependent upon the intergenerational protection and promotion of all life, and the earth's ecosystems that sustain life.

Second, the Panel defines global health from an *integrative perspective*. There are unprecedented opportunities for true interdisciplinarity that mobilises multi-level "cell to society" evidence and knowledge from across the biomedical, clinical, engineering, applied and social sciences, and the humanities.[11] Concerted action must move beyond singular institutional silos to whole-of-government, whole-of-society and whole-of-planet approaches. Collective action that engages state, market and civil society across multiple jurisdictions, from local to global, is vital to advancing global health. Finally, mitigating global health threats in an integrative way harnesses scale efficiencies and generates shared benefits that make economic sense. For these reasons, the Panel's definition of global health supports complex systems thinking and innovative institutional arrangements that more closely integrate research, policy and practice.

Third, the Panel definition of global health is informed by an *equity perspective*. While many of the drivers and consequences of human health are worldwide in scale, health and disease patterns are not distributed evenly within and across societies. Sizable population-level reductions in health inequalities have been achieved in many countries,[12] and there are notable gains on key indicators (e.g., near halving of the rich-poor gap in health service coverage among women, newborns and children in low- and middle-income countries in a decade[13]). However, substantial health differentials persist. Many are driven by structural and systemic factors, within societies and across countries, that unfairly disadvantage some population groups by virtue of their sex/gender, race/ethnicity, age, socioeconomic status, geography, employment, education and other factors. As a result, despite the COVID-19 pandemic demonstrating that no one's health is protected unless we are all protected, inequities remain a core challenge to address in global health.

Informed by the above, the Panel thus defines global health as *the interconnected physical, mental, social and ecological well-being of individuals, communities, and populations across the world. Global health concerns the intricate relationships between human, animal and planetary health, and the need to address inequities and disparities that arise from the intersection of economic, environmental and social factors.*

Through the course of its deliberations, the Panel identified a set of core values and principles shared by members that shaped the analysis and findings presented in this report (Box 1).

Box 1: Our core values and principles

Respect for and preservation of the **diversity** of living things, ecosystems, and humanity are foundational to advancing global health and well-being.

Sustainability, whereby meeting current needs must not harm, and preferably advance, the ability of future generations to meet their needs, should be prioritised in global health. This is aligned with Indigenous ways of being-knowing-doing which emphasise intergenerational custodianship and the interconnectedness of all life.

Global health is advanced through **solidarity** whereby there is unity of action and mutual support based on common interests. Solidarity is fundamental to achieving collective action and shared solutions to global health problems.

Meaningful partnerships through allyship, inclusiveness and authentic engagement are essential to advancing health and well-being at home and abroad. Co-creation of knowledge, for example, through partnership aligns with Indigenous ways of being-knowing-doing which emphasises mutual respect, reciprocity, and humility.

Strengthening **good governance**, including transparency and accountability, are essential to public trust of science, public institutions, private business and other communities seeking to advance global health.

National governments are sovereign and thus responsible for the health of their populations, but are supported and strengthened by global health structures.

Health is a fundamental **human right** to be upheld and protected. This includes the priority importance of the rights of women and children as enshrined in global treaties.

Global health cannot be advanced without **equity**. Every person should have a fair and just opportunity to attain optimal health and well-being regardless of race, ethnicity, Indigeneity, sex, gender identity, sexual orientation, age, ability, socioeconomic status, geography, preferred language or other factors.

4.0 CANADA'S CONTRIBUTIONS TO GLOBAL HEALTH

Canada has achieved a distinguished track record in positively contributing to international health cooperation for more than a century. Since the groundbreaking discovery of insulin by scientists at the University of Toronto in 1922,[14] Canadians have helped to advance the health and well-being of people worldwide through an array of distinctive contributions.[15]

4.1 The emergence of "global health"

This Panel's assessment focuses on the more recent history of Canada's contributions to "global health." The term itself marked an important shift in thinking and practice in the late 1990s, distinct from "tropical medicine" and then "international health," historically focused on the potential spread of disease outbreaks from, and then development assistance for low- and middle-income countries (LMICs).[16] Prompted by the growing HIV/

AIDS (human immunodeficiency virus/acquired immunodeficiency syndrome) pandemic, and recognition of the deepening interconnectedness of health determinants and outcomes among populations worldwide, the term "global health" began to be increasingly used. New patterns of health and disease, experienced by populations not necessarily defined by citizenship (e.g., rise in NCDs) were observed. This brought attention to key drivers of these emerging trends, many of which lay beyond the health sector, with many spilling across, or even disregarding, national borders. These included accelerating globalization of the world economy, worsening climate change, threatened species, rapid technological advances, and large-scale population movements. At the same time, profound health inequities persisted within and across societies,[17] a marker of a shared struggle by all countries to advance health and well-being domestically.

The shift to global health accelerated with the new millennium and the establishment of the Millennium Development Goals (MDGs) in 2000, with three of the eight agreed goals focused on health — child mortality, maternal mortality, and infectious diseases (HIV/AIDS, tuberculosis and malaria) — and several other goals complementary to health. The new focus on timebound results, coupled with growing concerns about the WHO's fit-for-purpose in the twenty-first century,[18] led to a mushrooming of new and ambitious initiatives, at a scale of financing previously unimagined, under the banner of global health. These include the GAVI, the Vaccine Alliance, the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM), and the US government's Presidential Emergency Plan for AIDS Relief (PEPFAR). Together, these marked a "millions to billions" financing transition. In this changing context, amid an increasingly crowded and complex institutional landscape to address global health challenges, the Panel reviewed Canada's contributions.

4.2 Canada during the MDG and early SDG periods

Contributions to building global health initiatives (2000–2006)

Canada entered the new millennium on the heels of a 33% cut in its official development assistance (from 0.45% to under 0.30% of gross domestic product).[19] Notable were missed leadership opportunities such as the 2002 Group of Eight (G8) Summit held in Kananaskis, Alberta where, despite plummeting life expectancy in sub-Saharan Africa from HIV/AIDS, health was barely mentioned in the endorsed African Action Plan for the New Partnership for Africa's Development (NEPAD). The G8 was also notably silent on the Doha Declaration on the TRIPS Agreement and Public Health, adopted by the World Trade Organization (WTO) in 2001, to address the urgent issue of access to essential medicines. Nor did G8 leaders germinate the seed planted at the previous G8 Genoa Summit in 2001 to establish the GFATM (later funded through other channels).

Nevertheless, Canada rallied to contribute to a rapidly evolving global health context. In 2002, at the UN International Conference on Financing for Development, Prime Minister Jean Chrétien committed Canada to doubling ODA by 2011 (an increase of 8% per year), with health as a key spending priority.[20] This corresponded with multi-year, multi-million dollar commitments to GAVI, the Advanced Market Commitment for Pneumococcal Vaccines, and the GFATM, alongside leadership in creating the Stop TB Partnership and its Global Drug Facility. In 2003, Canada's International Trade and Industry Ministers announced legislation to allow generic drug manufacturers in Canada to manufacture generic versions of antiretrovirals for export to LMICs.[21] By 2004, Canada was seen as "a world leader in fighting AIDS in developing countries." Largely due to effective and timely lobbying by Stephen Lewis, the UN Secretary General's Special Envoy for HIV/AIDS, Prime Minister Paul Martin announced a C$100 million commitment to support WHO's call to accelerate access to HIV treatment known as the "3 by 5" strategy (to treat 3 million people by 2005).[22] From 2005-2008, Canada's former Minister of Health and Welfare Monique Bégin served as a Commissioner on the WHO Commission on the Social Determinants of Health. Canada became both a primary sponsor of the Commission work, and supporter of the landmark 2008 report's recommendations.[23]

Canada focuses its global health leadership and investments (2006–2015)

From 2006 onwards, Canada's contributions in global health under the incoming Conservative government of Prime Minister Stephen Harper became arguably more distinct and visible. The commitment by the previous government to double ODA by 2011 was upheld. In addition, a process of untying Canada's food aid, from 90%

tied in 2005 to 100% untied by 2008, enabling important health and nutrition benefits at a time of record food prices, was achieved.[24]

At the same time, Canada's contributions were shaped by what Brown calls an increased "instrumentalization of foreign policy" in four ways: a) aid influenced by security rather than poverty alleviation considerations; b) increased alignment of aid recipients and channels with foreign policy goals; c) the commercialisation of ODA; and d) increased policy coherence and institutional change, notably the amalgamation of CIDA with the Department of Foreign Affairs and International Trade (DFAIT).[25]

Box 2: A Canadian health initiative gone global

Nutrition International (NI) is a Canadian initiative based in Ottawa operating in more than 60 countries, mainly in Asia and Africa. It is a leader in improving the nutritional status, health and well-being of people living in vulnerable conditions worldwide, notably women, adolescent girls, and children.

Founded in 1992 as the Micronutrient Initiative to eliminate vitamin and mineral deficiencies, the initiative was rebranded in 2017 as Nutrition International to reflect its expanding scope, reach and impact. With support from Canadian and other governments and philanthropic donors, NI works alongside governments and other multilateral partners such as the African Development Bank, World Food Program, World Bank, WHO and UNICEF to advance evidence-informed policies and programs that have reached over 1 billion people with nutrition interventions resulting in:

- 23 million cases of anaemia averted
- 12.5 million cases of stunting averted
- 3 million mental impairments averted
- 1 million births protected from neural tube defects
- $30 billion in future economic benefits

A further example of NI's leadership is the scaling up of vitamin A supplementation. Between 1997–2014, with Canadian funding, more than eight billion doses of vitamin A were provided and are estimated to have saved seven million children's lives.

Importantly, the reach of Canada's leadership in supporting Nutrition International has extended beyond the health sector. By integrating the delivery of nutrition with other essential services, close engagement with other sectors such as agriculture, education, development, and social policy has extended Canadian impact.

Sources: Micronutrient Initiative. Canada's Investment in Micronutrient Initiative will Sustain Life-saving Nutrition Programs around the World. News Release, Ottawa, 30 November 2014. https://web.archive.org/web/20141218234730/http://www.micronutrient.org/English/view.asp?x=656&id=128#; Nutrition International. *About Us*. Ottawa, 2024. https://www.nutritionintl.org/about-us/; Nutrition International. Partners. https://www.nutritionintl.org/about-us/partners/

Given the above efforts, when Canada hosted the G8 Summit in 2010, in stark contrast with the 2002 Summit,[26] global health was given high prominence with the launch of the Muskoka Initiative for Maternal Neonatal and Child Health (MNCH). Alongside existing commitments of C$1.75 billion over five years, the government added a further C$1.1 billion (total of C$2.85 billion) for MNCH 1.0. Canada then hosted the Saving Every Woman, Every Child: Within Arm's Reach Summit in 2014, committing an additional C$650million per year for MNCH 2.0. This decade-long leadership on MNCH (2010–2020), totalling C$6.5 billion,[27] corresponded with Canada becoming a lead investor in the Global Financing Facility (GFF) to support Every Woman Every Child. Initial multi-million dollar commitments to the GFF were announced by Prime Minister Harper alongside Norwegian Prime Minister

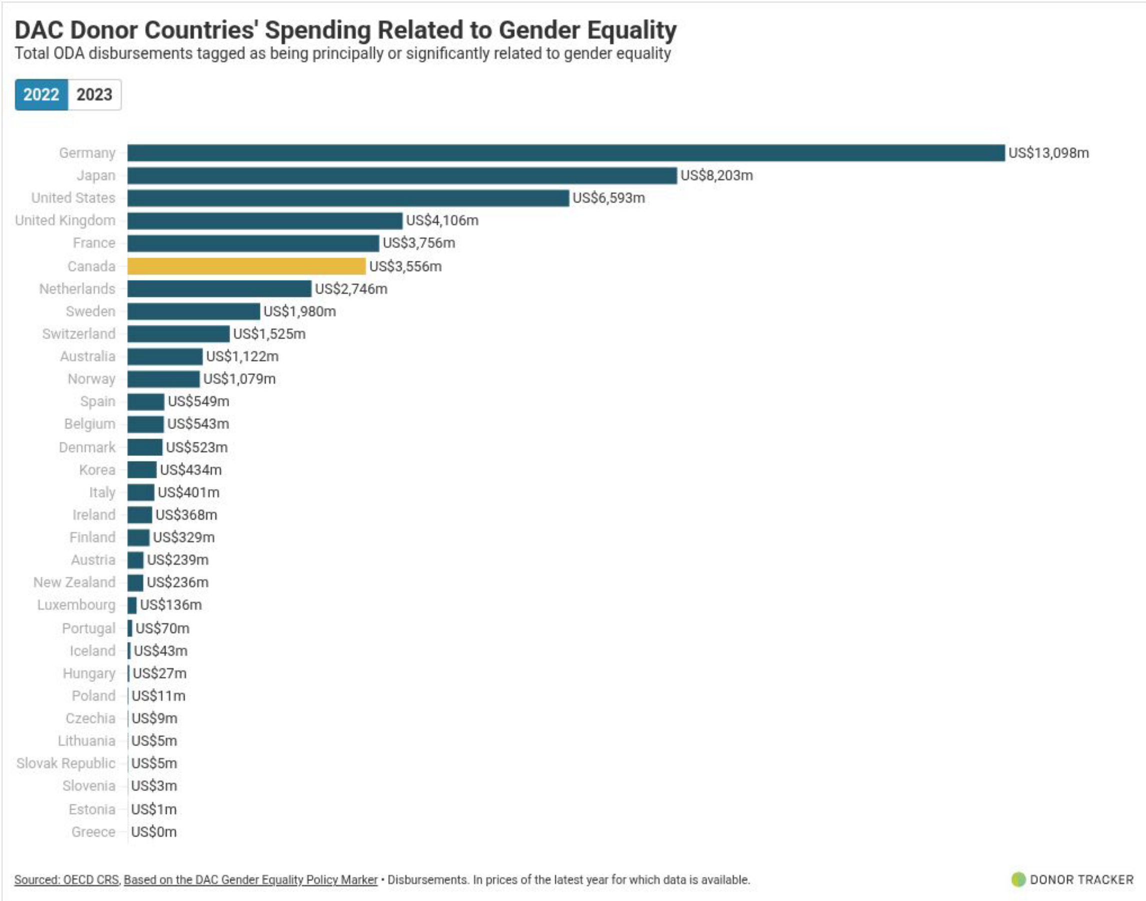
Erna Solberg at the UN General Assembly in September 2014.[28] The GFF was then officially launched as a new billion-dollar fund at the Financing for Development Summit in Addis Ababa in 2015 with its explicit strategy to use development assistance to mobilise domestic financing for universal health coverage.[29]

Alongside the MNCH agenda, Canada demonstrated notable leadership on infectious diseases and nutrition. Canada hosted the Fifth Replenishment of the GFATM in 2016,[30] committing C$650 million for 2014–2016. Canada continued to be a core contributor to the Global Polio Eradication Initiative, committing a further C$250 million for 2013–2018.[31,32]

On nutrition, Canada built on pioneering work by the Micronutrient Initiative at the IDRC conducted during the mid 1990s,[33] to catalyse the Scaling Up Nutrition (SUN) Movement in 2010.[34] SUN has served as an umbrella partnership to bring together, coordinate and support the efforts of diverse UN agencies, governments and other partners to end malnutrition.[35] To further amplify this work, Canada provided substantial and sustained funding to Nutrition International (see Box 2).

Overall, Canada's spending on global health increased substantially during this period, focused on selected issue areas, countries and organizations which aligned with foreign policy goals.[36] The adoption of the Sustainable Development Goals (SDGs) in 2015, however, challenged major donors including Canada to increase overall levels of ODA to fund the new goals. As United Nations Development Program Administrator Helen Clark argued, "[d] eveloping countries will want to see developed countries renew their commitment to [spending] 0.7 per cent [of GDP] and put a time frame on it."[37] In 2014, Canada's ODA fell considerably short at 0.24% of GDP. In response, the Harper government expressed concern that the broad nature of the 17 SDGs did not detract from a focus on MNCH. A ministry spokesperson also suggested an initiative to increase private sector funding of aspects of the SDGs, a proposal met with concerns by the development community in Canada about "the most marginalised and vulnerable."[38]

Figure 1: Total ODA disbursements related to gender equality (US$)



Source: https://donortracker.org/donor_profiles/canada/gender

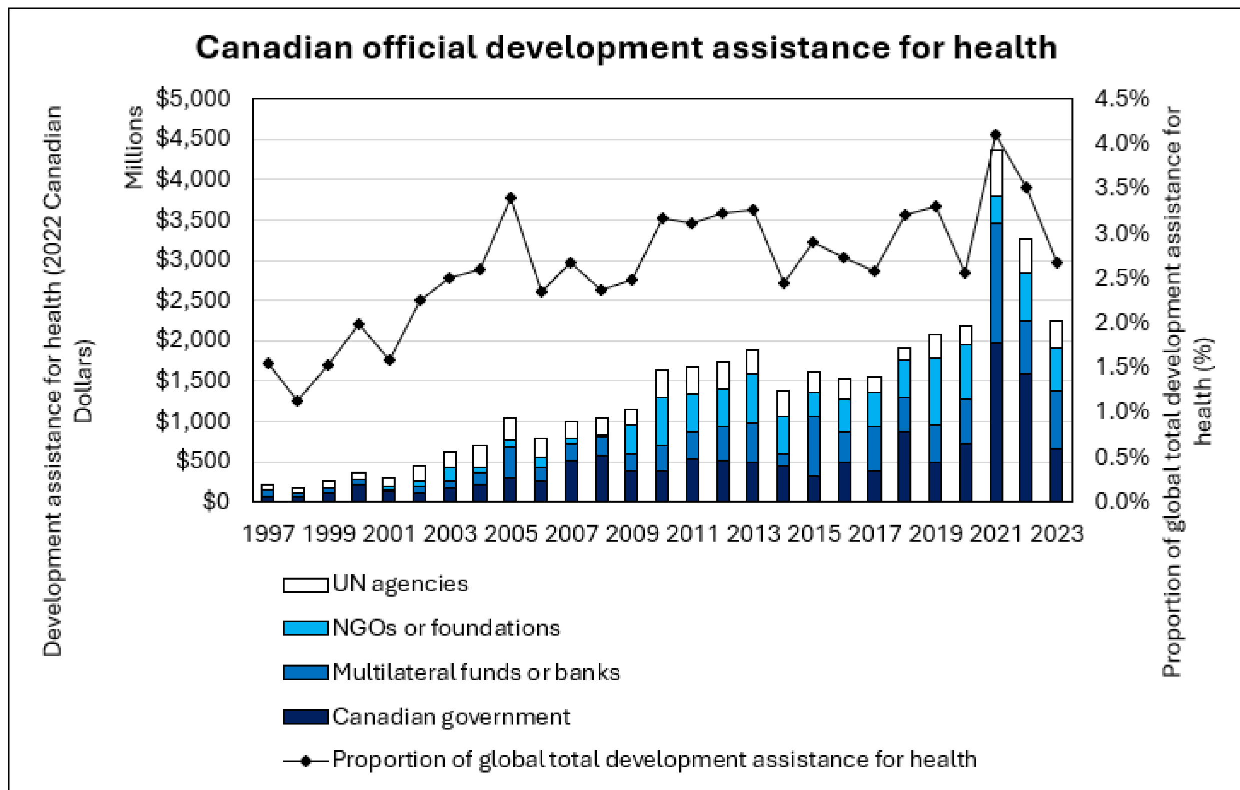
Canada remains among largest funders of women's rights and gender equity in global health

Canada's commitment to MNCH was sustained, and indeed strengthened, despite the change of government in 2015. Under Prime Minister Justin Trudeau, the Liberal government adopted a Feminist International Assistance Policy (FIAP) in 2017 which shifted attention to poverty alleviation and, in particular, gender equality and the empowerment of women and girls. Sexual Reproductive Health and Rights (SRHR) thus became a core component of Canada's aim "to become a leading voice for progressive international assistance while advancing the implementation of the 2030 Agenda for Sustainable Development."[39] Increased financial commitments followed, with Canada becoming the leading donor on gender equality in 2021 (see Figure 1). This included an announcement of a further C$1.4 billion annually, to support women's and girl's health worldwide over the next decade, at the 2019 Women Deliver Conference.

Canada flows global health funding through diverse channels

Canada's ODA for global health more than doubled between the early 2000s and 2023, to over US$1 billion annually. By 2022, Canada was among the largest funders of global health among OECD countries (sixth among thirty countries) in absolute terms. The country was first among global health donors, as a proportion of total ODA (30%) in 2021, and third (18%) in 2023.[40] This growth in health ODA was distributed not only through multilateral initiatives, but NGOs, UN organizations and bilateral channels (see Figure 2).

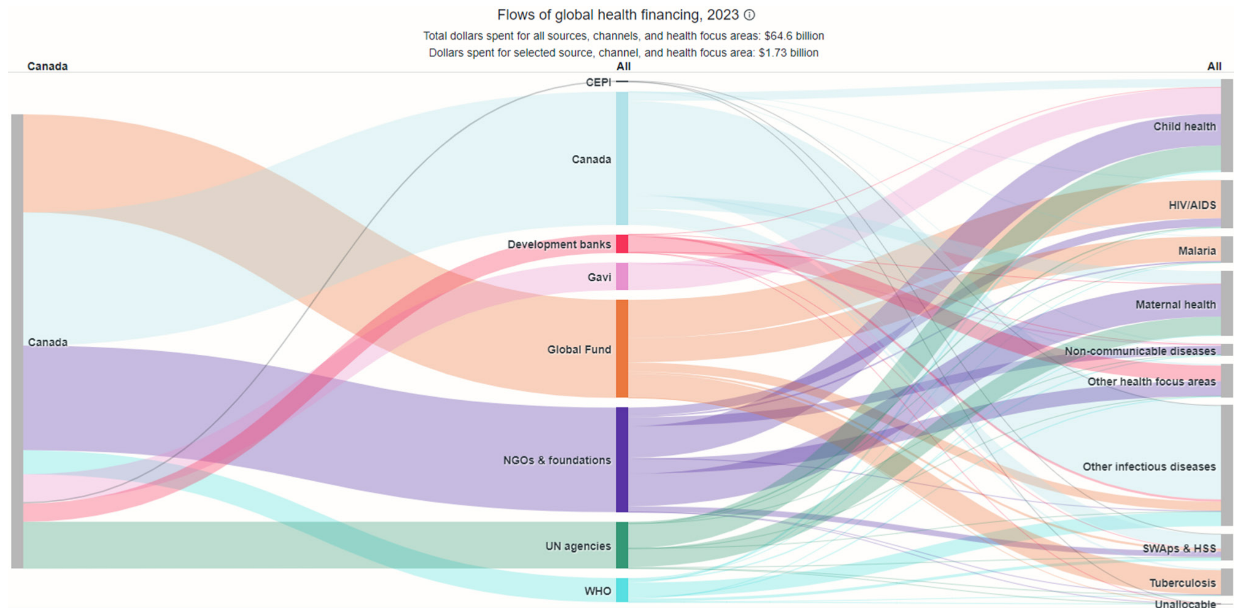
Figure 2: Canadian official development assistance for health, 1997-2023



Source: All figures adjusted to constant 2022 Canadian Dollars. http://vizhub.healthdata.org/fgh/ [41]

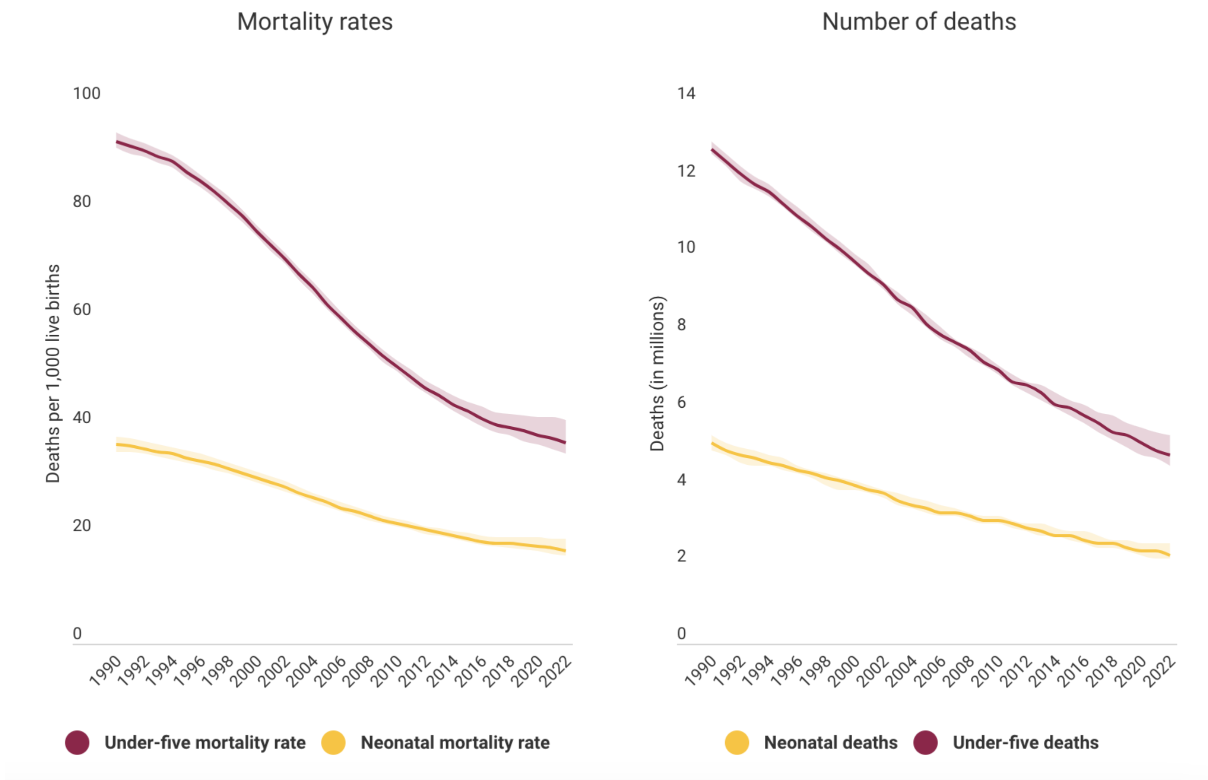
Figure 3 shows aggregated global health financing by Canada from 1990 to 2023 by health focus area. Canada directed around one-quarter through global health initiatives (GHIs) such as GAVI, the GFATM, GFF and Nutrition International. Another one-quarter was channelled to support UN organizations such as the WHO, Pan American Health Organization (PAHO), the Joint UN Programme on HIV/AIDS (UNAIDS), UN Population Fund (UNFPA), and UN Children's Fund (UNICEF). Canadian-based NGOs, working on the MNCH/SRHR agendas, also received one-quarter of this funding during this period. Finally, Canada directly channelled around one-quarter of ODA funding for global health bilaterally to priority countries.

Figure 3: Canadian total flows of global health financing, 1990-2023



Source: Canada, Flows of global health financing, 2023 (in 2022 USD). Institute for Health Metrics and Evaluation. *Financing global health visualization*. Seattle, WA: IMHE, University of Washington; http://vizhub.healthdata.org/fgh/ (accessed September 30, 2024)

Figure 4: Global mortality rates and number of deaths by age, 1990–2022



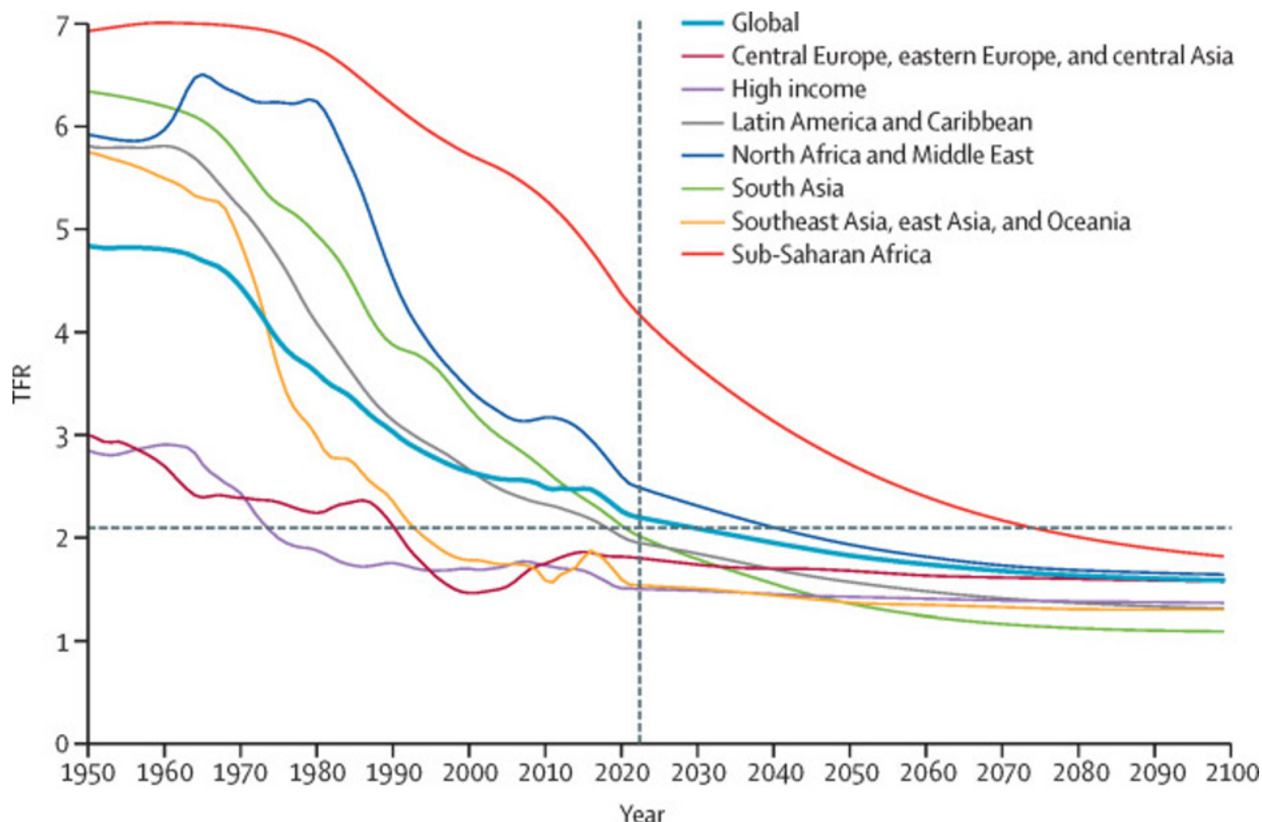
Note: All figures are based on unrounded numbers. The solid line represents the median estimate and the shaded area represents the 90 per cent uncertainty bound around the median value.

Source: United Nations Inter-agency Group for Child Mortality Estimation (UN IGME), Report 2023. Levels and Trends in Child Mortality. *United Nations*. 12 March 2024. https://data.unicef.org/resources/levels-and-trends-in-child-mortality-2024/

Canada's investments in global health achieve impact

Canada's sustained support for GHIs during this period supported a broader movement to accelerate the achievement of results under the MDG and SDG agendas. Under the MNCH agenda, there was promising evidence of sustained declines in child and maternal mortality (Figures 4 and 5). While multiple factors contributed to this progress, these gains were strongly associated with increased access to vaccination, contraception, prevention and treatment of malaria, improved nutrition, and increased rights for women and children. This progress notwithstanding, there remains a considerable unfinished agenda related to zero-dose children,[42] unmet needs for contraception,[43] unattended deliveries,[44] and sustaining or extending services to populations in emergency settings such as pandemic events, conflict, forced migration and climate change.

Figure 5: Total fertility rate, globally and by global burden of disease super-region, 1950–2100



Note: The dashed horizontal line indicates replacement TFR (2·1), and the dashed vertical line indicates the year 2022 (the first forecast year).

Source: Bhattacharjee, NV et al. GBD 2021 Fertility and Forecasting Collaborators. Global fertility in 204 countries and territories, 1950–2021, with forecasts to 2100: A comprehensive demographic analysis for the Global Burden of Disease Study 2021. *Lancet* 2024; 403(10440): 2057–2099. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(24)00550-6/fulltext

Sustaining impact requires addressing persistent challenges in health systems development

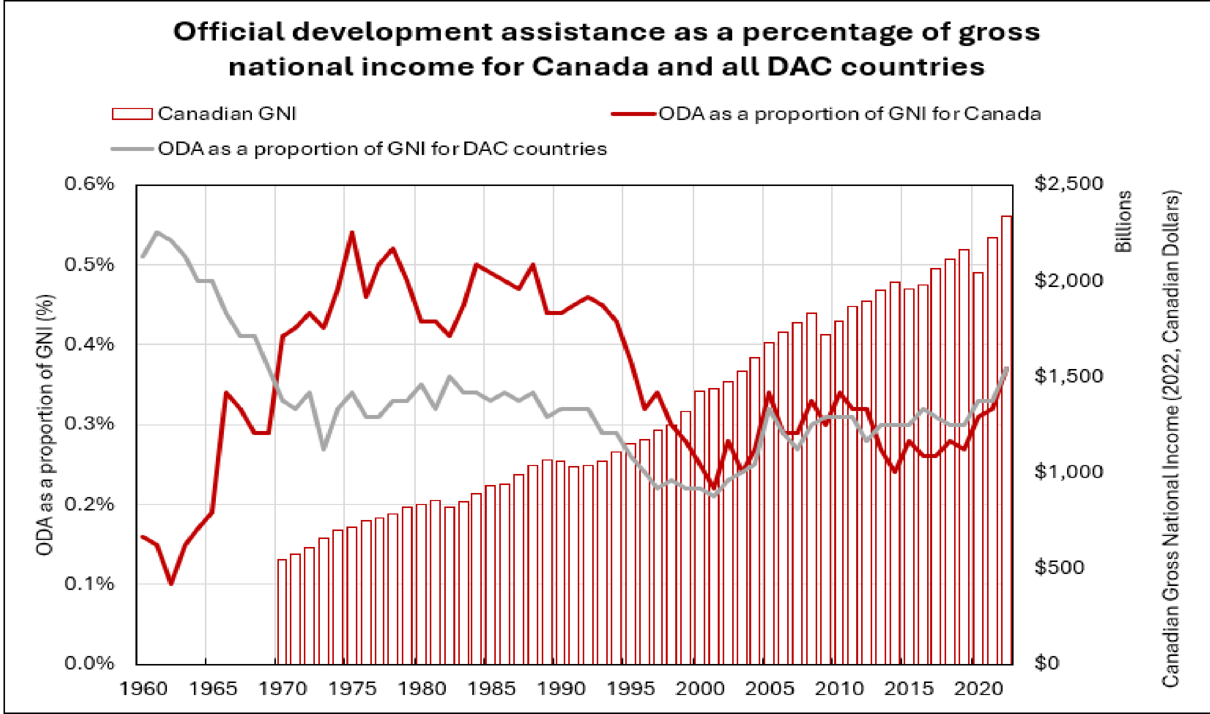
Linked to this unfinished agenda are more fundamental questions about the effectiveness of health ODA (especially via GHIs) with respect to strengthening the health systems of recipient countries. Indeed, the health sector has been a sentinel focus of multiple OECD policy fora on improving development effectiveness.[45] Several assessments of the impact of GHIs on national health systems have been conducted which point to areas of progress (e.g., laboratory testing systems) but also blind spots and bottlenecks such as supply chains, health workforce and domestic financing.[46,47,48] Canada's leadership was particularly important on at least two occasions. The first is Prime Minister Harper's leadership on the Commission on Information and Accountability

(2011–2012) which recognised the importance of information systems in countries to reliably measure results, and global frameworks to ensure development partners followed through on commitments.[49] More recently, Canada has taken a leadership role in the Lusaka Agenda that aims to align development partners around a common agenda of strengthening recipient national health systems for UHC.[50] Despite this growing recognition, evidence of progress remains in short supply. Moreover, all countries (not just LMICs) appear to be struggling with the complexities of health systems especially where their dynamics transcend national boundaries (e.g., health workforce). Generating knowledge and know-how to address these shared systems challenges, which include significant interdependencies across countries, is central to the global health agenda moving forward. These challenges are further discussed in our findings and recommendations below (especially 1 and 2).

Canada continues to underinvest in ODA

While ensuring the effectiveness of health ODA remains essential, more fundamental questions about ODA fail to garner the attention they deserve. Despite Canada's impressive financial commitments to MNCH/SRHR, total ODA remained around 0.2–0.4% of GNI from 2000–2020, roughly aligned with the OECD average of 0.39% (see Figure 6).[51] This follows two decades (1970–2000) when Canada was above the OECD average. Current levels also continue to fall short of the 0.7% of GDP/GNI[52] target put forth by the 1969 Commission on International Development led by Prime Minister Lester Pearson (known as the Pearson Commission) which envisaged "development for all by the year 2000."[53] Adopted by UN Resolution 2626 in 1970 as the minimum standard for "each economically advanced countries ... by the middle of the decade,"[54] and encouraged by the OECD Development Assistance Committee (DAC), virtually all donor countries including Canada have failed to meet this target.

Figure 6: Official development assistance as a percentage of gross national income for Canada and all DAC countries (1960–2020)



Source: Generated by https://public.flourish.studio/story/2150513/ using OECD data on ODA (2023). https://www.oecd.org/en/topics/finance-for-sustainable-development.html

This persistent failure over many decades, when other countries have gotten much closer to 0.7% and in several cases reached this target, questions Canada's seriousness about its international development and health commitments. More fundamentally, it may be time to rethink and redesign the multilateral financing

frameworks of the 20th century such that they are more fit-for-purpose to the realities of the 21st century. Although not the mandate of this panel, our redefinition of global health along with this report's findings and recommendations would support such a reframing with a view to mobilising sufficient and sustained spending based on the shared interests of all countries in protecting and promoting human, animal and environmental health on a planetary scale.

4.3 Contributions to global health research and innovation

Canada's commitments to health ODA have extended to research funding.[55] Historically, Canada has supported a different funding model, with the IDRC embracing recommendations put forth in the 1990 report of the Commission on Health Research for Development (COHRED), advocating for "essential national health research."[56] The IDRC proceeded to support groundbreaking research on tobacco control,[57,58,59] micronutrients,[60] insecticide treated bed nets[61] and evidence-based planning for district health priorities,[62,63] much of it led by local scientists, and much of which informed global health policies and funding priorities. Moreover, the IDRC was an early advocate of multisectoral approaches to development which became a "prime vehicle" for implementing Agenda 21 of the UN Conference on Environment and Development (UNCED) known as the Earth Summit.

A new approach to investing in health research

This broader thinking was evident in the bold reform of the Medical Research Council to create the Canadian Institutes of Health Research (CIHR) in 2000. The CIHR broke new ground by establishing a unique set of institutes, notably for Gender and Health, Indigenous People's Health, Health Services and Policy Research, and Population and Public Health.[64] This reform increased the legitimacy and priority given to previously underserved areas of health research. In addition, CIHR supported partnerships with other funding agencies such as the Global Alliance on Chronic Diseases (GACD). Notably, the GACD goes beyond the traditional ODA model, supporting research on "the growing burden of NCDs in LMICs and in underserved groups experiencing health disparities such as Indigenous populations in high-income countries (HICs)."[65]

Diverse efforts to strengthen global health research

In 2001, a Global Health Research Initiative (GHRI) was formed to align the interests of four Canadian federal agencies (IDRC, CIHR, CIDA/GAC, Health Canada), shape a global health research agenda, encourage policy coherence, and facilitate information sharing for global health practice. From 2005–2013, following Canada's policy statement to increase ODA, with health as a key priority, the GHRI established the C$25 million flagship Teasdale-Corti Global Health Research Partnership Program (named to honour Lucille Teasdale and Piero Corti who dedicated their lives to providing healthcare in Uganda). The program was intended "to provide long-term investment that supports teams of researchers and research users as they develop, test and implement innovative approaches to strengthening institutional capacity, especially in LMICs."[66] A second GHRI program, Innovating Maternal and Child Health in Africa, was funded from 2014–2022. Closely aligned with Canada's priority to MNCH, the C$36 million program funded "research to strengthen equitable health systems to improve maternal, newborn, and child health outcomes in sub-Saharan Africa."[67] Between 2000 and 2016, Canada's funding for health development research (excluding Grand Challenges Canada) grew from about C$2.5 million to over C$30 million annually.[68]

New funding for health development research supporting innovation

In 2008 the Canadian government pledged C$225 million over five years to create Grand Challenges Canada (GCC), a non-profit organization co-founded by Peter Singer, Joseph Rotman and Abdallah Daar. Informed by the Gates Foundation's Grand Challenges in Global Health model, GCC's stated objectives were to: a) identify and prioritise profound health challenges facing the developing world; b) mobilise scientific communities in Canada and the rest of the world, including the developing world, to address these health challenges through competitive selection and funding of projects; and c) facilitate the affordable implementation and commercialisation, in the developing world, of solutions that emerge. While a review of the GCC in 2015 found

that it was making progress on these objectives[69] the current GCC leadership is pointing to the need to focus on the scaling up of innovations that have proved value-added.[70]

An expanded definition of global health research put forth by CIHR

While Canada has made important contributions to the funding of health development research, what constitutes global health research began to be questioned by CIHR, led by Steven Hoffman, then Scientific Director of the Canadian Institute for Population and Public Health. This was prompted by awareness of the narrow definition prevailing within CIHR focused on health development (i.e., international health). In 2019, in an effort to broaden the scope and support increased funding of global health research, without downplaying the importance of health development research, CIHR set out a clarifying definition extending the scope of research to include globalization, health equity, neglected conditions, and transnational risks.[71] This was supported by a joint email by CIHR President Michael Strong and Hoffman stating that global health research defined in this way is considered a "core part of CIHR's legislated mandate," namely "to contribute to the improvement of people's health in Canada and the world."[72] Strategic partnerships by CIHR with, for example, the GACD and Healthy Life Trajectories Initiative were provided as examples of the CIHR's support for global health research.[73] In 2022, a *CIHR Framework for Action on Global Health Research* was published setting out the rationale and parameters for global health research. The framework set out an expectation that global health research is potentially relevant to the mandates of all 13 CIHR institutes. As discussed in Section 6.6 below, the Panel argues that a further shift in how global health research is defined and operationalised across the CIHR, and by other Canadian research funding agencies, is urgently needed over the next two decades.

Figure 7: CIHR funding of global health research by primary focus, 2000-2015

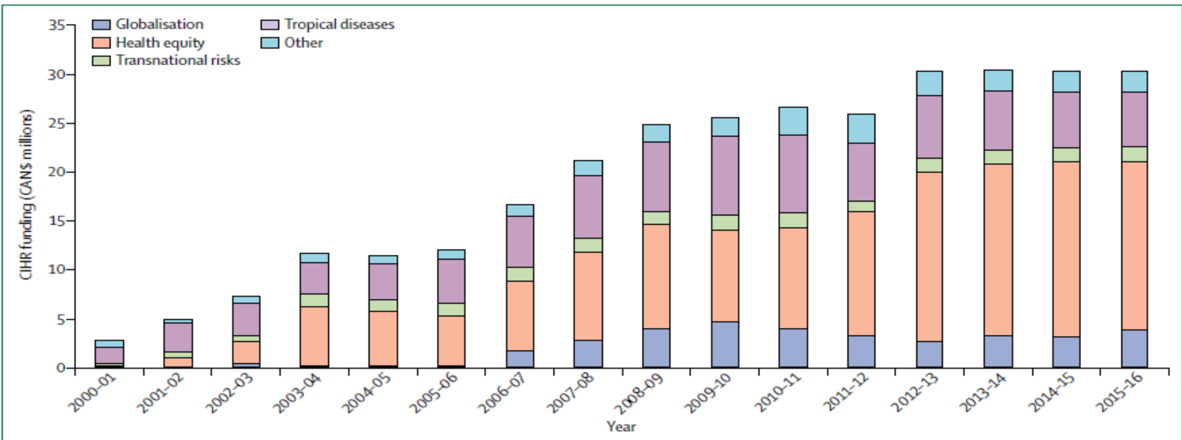


***Figure 2:* Canadian Institutes of Health Research (CIHR) funding of global health research by primary focus, 2000–15**
Data provided by the CIHR on June 6, 2017.

Source: Nixon S, Lee K, Bhutta Z, Blanchard J, Haddad S, Hoffman S, Reading J, Tugwell P. Canada's role in global health: Supporting equity and global citizenship as a middle power. *Lancet* 2018; 391(10131): 1736–1748. Data provided by CIHR on 6 June 2017.

4.4. Lessons arising from the twenty year retrospective analysis

While the sections above have drawn attention to the evolution of Canada's role in global health over the last twenty years, there are a number of lessons that help to inform Canada's prospective role.

The first lesson is that high-level political leadership is essential but also needs to be non-partisan. The Muskoka Agenda on Maternal Neonatal and Child Health backed by Prime Minister Harper and linked to the Canada-hosted G8 meeting in 2010 positioned Canada as a clear global leader. This agenda was then sustained despite the change of government in 2015 through the Feminist International Assistance Policy, combined with a decade of financing commitments. This leadership across political parties enabled Canada to build and sustain leadership.

The second emerging lesson is that MNCH/SRHR as a Canadian global health priority has been implemented through a variety of initiatives (GFF, GAVI, NI and GFATM) and types of institutional channels (multilateral, bilateral, NGO). Concrete results have been achieved only by working in partnership. While it is important to be cautious about (over-) attribution, evidence of the tangible benefits and real world impacts from working cooperatively with other countries and organizations on multiple fronts is essential to communicate to the Canadian public at a time of retreat by some countries to isolationism.

The third lesson is that the constraints encountered, related to national health systems, whether related to domestic financing or health workforce, have been unyielding to piecemeal approaches. Moreover, failure to address these systemic issues are likely to stall or even erode hard won gains. Growing concerns about national ownership and leadership of health systems, as well as the increased interdependence of health systems across countries in key areas related to health workers and access to life saving products, support the need for a more explicit and concerted focus to strengthen health systems.

Linked to the third lesson, and especially visible in the fallout of the pandemic, is the realisation that further progress in women's and children's health and nutrition is by no means a given. Canada must address fast emerging domestic and global challenges in tandem associated, for example, with NCDs, health emergencies, climate change, and other crises. While some of Canada's research institutions — especially CIHR, IDRC and GCC — have pioneered targeted efforts on these fronts, it is the view of the Panel that Canada now needs to adapt its knowledge systems, strategies, policies, and priority actions in an era of polycrisis.

5.0 LESSONS FROM CANADA'S GLOBAL HEALTH ROLE DURING THE COVID-19 PANDEMIC

> *COVID-19 is a global pandemic, spread by a virus that knows no borders. No country will be able to fully recover until we beat it all around the world. We must work together, and Canada is contributing to this fight. Canadian and international researchers are racing to develop diagnostics, treatments, and vaccines that will save lives, protect the health and safety of people everywhere, and lay the groundwork for a sustainable worldwide economic recovery.*
>
> Prime Minister Justin Trudeau, 4 May 2020[74]

The COVID-19 pandemic stress-tested Canada's domestic capacity to respond to a major public health emergency and, at the same time, to actively engage in a global response to controlling the worldwide spread of a novel coronavirus. An overarching lesson was that effectiveness in each domain — local and global — was necessary and reinforcing of the other. Shortcomings in global pandemic governance impacted the ability of countries to slow the introduction and onward transmission of the virus, procure essential supplies such as vaccines, treatments and personal protective equipment (PPE) in a timely manner, and sustain public support for public health measures. Weaknesses in domestic pandemic responses, in turn, led to higher rates of infection and death especially in vulnerable communities. These conditions enabled the emergence and global spread of variants of concern, and ultimately a more prolonged and severe pandemic. Recognizing this interdependence, the panel has reflected both on Canada's domestic and global response during the pandemic.

5.1 Domestic Response

Following the SARS (severe acute respiratory syndrome) outbreak of 2003, the Canadian government established the Public Health Agency of Canada (PHAC) with an ambitious mandate to strengthen Canada's public health functions including, but not limited to, future pandemic preparedness and response.[75] The H1N1 pandemic in 2009 posed the first such challenge for the agency but, in practice, the COVID-19 pandemic was its first major stress test.

A key pillar of PHAC's pandemic plan was the Global Public Health Intelligence Network (GPHIN), an innovative early warning disease surveillance system pioneered by Canada in the late 1990s. Despite integration with WHO's Global Outbreak Alert and Response Network (GOARN), to support the identification of disease outbreaks with pandemic potential, GPHIN was reportedly incapacitated during the decade leading up to the COVID-19 pandemic. Its challenges mirrored concerns about PHAC as a whole, related to underfunding, broad mandate, and deteriorating culture. The lack of appropriate balance between effective administrative management and essential scientific and technical expertise and experience was especially problematic.[76,77] These problems were identified in an internal report commissioned by PHAC leadership in 2018,[78] and confirmed by the Auditor General's Report on Canada's Pandemic Preparedness, Surveillance, and Border Control Measures (2021) during the COVID-19 pandemic:

> The Public Health Agency of Canada's Global Public Health Intelligence Network did not issue an alert to provide early warning about the virus. Although the agency prepared rapid risk assessments, these did not consider the pandemic risk of this emerging infectious disease or its potential impact — information necessary to guide decision makers on the public health measures needed to control the spread of the virus.[79]

A full assessment of Canada's domestic response to COVID-19 is beyond the capacity and mandate of this Panel. There also has not been a national public inquiry in Canada following the pandemic to draw lessons from, as occurred after SARS (2003), and unlike other countries.[80,81,82] However, drawing on comparative studies, the Panel identified lessons that may inform future preparedness and response:

1. A comparison of Group of 10 countries shows Canada "performed better than most in terms of percentage of the population receiving 2 doses of a SARS-CoV-2 vaccine, and on measures assessing the direct effect of the pandemic: number of people infected, number who died from COVID-19 and total excess deaths."[83] A comparative analysis of excess mortality over the four years of the pandemic similarly ranks Canada in the top quintile of performance.[84] What are the underlying factors that explain Canada's relatively strong performance on these indicators?
2. Canada ranked first among OECD countries for the number of lives lost among persons living in long-term care facilities. What can Canada learn from other countries where long-term care residents fared better?
3. Canadians adhered exceptionally well overall with public health countermeasures including mask wearing, physical distancing, lockdowns and work/school closures. However, variation over time in practice and stringency across provinces/territories led to public confusion and a decline in trust in some populations.[85] What are the lessons for public policy making and communications during future pandemics to prevent social polarisation, sustain public trust, and support the public health response?[86]
4. Canada's roll-out of COVID-19 vaccines was rapid and achieved very high population coverage beginning with most-at-risk groups such as the elderly and Indigenous persons. While aggregate coverage was well over 90% by June 2022, First Nations and black populations achieved just over 80% vaccination coverage[87]. Are there lessons from this experience that can inform more equitable access to vaccines or other essential medicines?
5. Canada's data and surveillance systems struggled to provide real-time, national monitoring and reporting during the pandemic including morbidity and mortality, acute infections, immunity, and a broad range of social and behaviour factors influencing risk. How can we generate and analyse national data to inform decision making amid a highly decentralised Canadian public health system? What investments and incentives are needed for provincial/territorial and federal systems to deliver more effective real-time integrated health information?

5.2 Global Response

Strong supporter of multilateral cooperation

Assessments of Canada's global health role during the pandemic have elicited mixed reviews. The Canadian federal government was a vocal supporter of multilateral cooperation from the beginning of the pandemic. Theresa Tam, the Chief Public Health Officer of Canada, participated in the International Health Regulations Emergency Committee (as an adviser) when it deliberated on declaring COVID-19 a public health emergency of international concern on January 30, 2020.[88] For most of the pandemic, and especially during the early months of 2020, Canada worked closely with and adhered to WHO technical guidance on the unfolding pandemic. Over the course of the pandemic, the Scientific Director of the CIHR Institute of Immunity and Infection, Charu Kaushic, chaired the Global Research Collaboration for Infectious Diseases Preparedness (GLOPID-R), formed in 2020 to bring together funders worldwide investing in COVID-19 research.[89]

A major financier of the global response to COVID-19

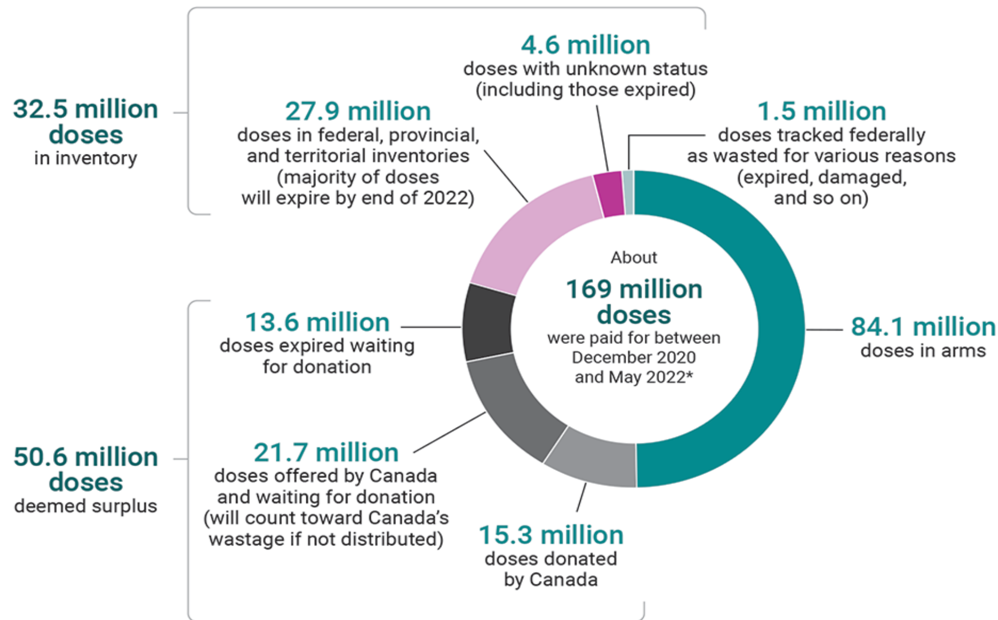
Canada was a major funder of the Access to COVID-19 Tools Accelerator (ACT-A), a global collaboration by "governments, scientists, businesses, civil society, and philanthropists and global health organizations" to speed the development, production and equitable access to COVID-19 vaccines, therapeutics and diagnostics.[90] Canada was the second largest contributor to the ACT-A with a total of C$2.1 billion distributed across its four pillars: vaccines (C$1.272 billion); therapeutics (C$.29 billion); diagnostics (C$.265 billion) and health systems and response connector (C$.310 billion). Within the vaccines pillar, Canada was the leading donor with a contribution of C$840 million for the COVID-19 Vaccine Global Access (COVAX) Facility in support of vaccine procurement and the dose sharing mechanism. In addition, Canada provided a further C$1.4 billion dollars through multilateral institutions like the IMF and UNICEF[91] to support response and recovery of specific countries with a focus on the needs of the poorest and marginalised populations, and women and girls under Canada's Feminist International Assistance Policy.[92]

Canada falls short on vaccine equity

Despite Canada's relatively generous contributions to the global response, the government faced widespread criticism regarding global vaccine equity.[93] Criticisms focused on the use of Advanced Purchasing Agreements (APAs) to procure an (over) abundance of imported vaccines for domestic use (169 million doses),[94] while failing to be more proactive in ensuring equitable global access.[95] This critique was based on at least four concerns: a) Canada was the only G7 country to draw vaccines from the COVAX mechanism even when its domestic supply was not in question; b) Canada failed to support a waiver under the World Trade Organization (WTO) Agreement of Trade-Related Aspects of Intellectual Property Rights (TRIPS) that would have increased vaccine manufacturing by other producers;[96] c) Canada did not support the COVID-19 Technology Access Pool to provide a one-stop shop for scientific knowledge, data, and intellectual property to be shared equitably by the global community;[97] and d) Canada was slow to release surplus vaccines for urgent use by other countries, administering almost 96 million doses at home while delivering fewer than 29 million abroad by the end of 2022. As Houston et al. describe, "the government of Canada has a history of providing financial support for global health programmes and initiatives, but its record of sharing scarce commodities is less impressive."[98]

Sharp criticisms of Canada's "vaccine nationalism," in turn, harmed the country's credibility and standing in global health and foreign policy more broadly. In response, the Canadian government created CanGIVE (Canada's Global Initiative for Vaccine Equity) in June 2022, a C$317 million "signature initiative to bolster COVID-19 vaccine delivery, strengthen health systems and increase regional vaccine manufacturing capacity."[99] However, interviews conducted by the Panel suggest CanGIVE has failed to change perceptions of harm from Canada's vaccine nationalism during the pandemic.

Figure 8: Vaccine doses paid for by Canada from December 2020 to May 2022



Source: Office of the Auditor General of Canada. *Report 9. COVID-19 pandemic.* 2022. https://www.oag-bvg.gc.ca/internet/English/parl_oag_202212_09_e_44175.html

African countries punished for sharing public health information

Another concern during COVID-19 was Canada's response to the efforts of South African scientists to alert the world to the emergence of the Omicron variant of concern in November 2021. Rather than appreciating this rapid and open sharing of vital information, a core principle underpinning the IHR (2005), Canada joined other countries in effectively punishing reportedly affected countries with targeted travel restrictions. With little scientific evidence to support the reactive use of targeted restrictions to mitigate the introduction of what was already a globally circulating variant of concern and, given previous decisions not to apply such measures against the UK upon the emergence of the Alpha variant of concern in November 2020, Canada's policies were interpreted globally as discriminatory and racist.[100,101,102]

"Panic and neglect" and separation of domestic and global responses

In the aftermath of the pandemic, Canada (and the world) appears to be already falling into a previous pattern of "panic and neglect." First, there has been insufficient investment in learning the lessons from the response. What has Canada learned from the C$3.5 billion invested in the global response? Is the evaluation of ACT-A in 2022[103] sufficient to inform how Canada might direct its response resources in a future pandemic? How have the efforts to support countries through the IMF, for example, helped to sustain access to essential services for mothers and children and uphold Canada's FIAP? Canada's national response to COVID-19 would benefit from a sober independent review and provide a critical complement to the evaluation of our global investments.

Second, ongoing negotiations around the WHO pandemic accord are stalling around key issues like benefits sharing, technology transfer, and intellectual property. If the accord is watered down to vague principles, what are the priority policy and investment avenues Canada should be pursuing and with what partners? A case in point for example is the Pandemic Fund. Although, G20 Finance Ministers — including Canada's — agreed in 2021 that preventing the next pandemic required a 5-year commitment of between C$40–50 billion, the paltry C$1.3 billion committed to the Pandemic Fund launched in September 2022 (although a reflection of the tight fiscal climate[104]) is difficult to take seriously. Moreover, it is not clear what Canada's C$50 million commitment to this fund is likely to yield nor is it clear how this investment links to other global and domestic efforts to

strengthen pandemic preparedness and response such at the newly announced Federal agency entitled Health Emergencies Readiness Canada.[105]

Bridging this disconnect between domestic and global health appears to be one of the critical legacy lessons for Canada to address. For example, while there may be several reasons why Canada prioritised domestic over global vaccine access, including uncertainties over the effectiveness of different vaccines, competition for scarce supplies, and partisan politics, the gap between "fine words" and concrete actions caused considerable reputational harms to the country's standing in global health. Moreover, the trade-off between domestic and global health needs is a false one. Leaving large segments of the world's population without access to the vaccines simply sustained the conditions for SARS-CoV-2 to spread and continue to evolve. Vaccine equity during the pandemic, in short, demonstrated how the health of Canadians is inseparable from the health of populations worldwide. By contrast, Canada has partnered with GAVI to donate 200,000 doses of mpox vaccines to the Democratic Republic of the Congo, amid supply shortages to respond to outbreaks.[106,107] thus highlighting the imperative for more effective global structures that avoid leaving issues of equitable access to vaccines and other tools to the decisions of nation states during emergencies.

6.0 KEY FINDINGS AND RECOMMENDATIONS

Building on Canada's important contributions to global health to date; recognizing the country's history of colonisation and nation-building, as well as its ongoing process of reconciliation with Indigenous peoples; and responding to profound shifts in the global landscape over the next two decades, our Expert Panel identifies seven key findings. The first four findings set out **what** issue areas require priority attention and where Canada's leadership could make a strong contribution. Importantly, each issue area embodies how domestic and global health are closely interconnected, recognising that health in Canada cannot be provided, protected or promoted without attention to the global landscape. The remaining three findings concern **how** Canada can effectively take forward these priority issue areas through the adoption of a clear global health strategy, investing in research and innovation and ensuring capacity for Canada to meaningfully engage in global health partnerships and collaborations.

Key finding #1: Build equitable universal health systems centred on women and primary care

A core principle of Canada's healthcare system is universal health insurance for medically necessary care. As set out in the *Canada Health Act* (1984), the health system should be universal, publicly administered, comprehensive in coverage, portable across provinces, and accessible. These principles closely align with the commitment by the world's governments, under Sustainable Development Goal #3, to accelerate progress towards universal health coverage (UHC). Building on the more narrowly defined MDGs, the SDG targets for universal access can point to some very encouraging signs of progress such as annual childhood deaths descending below 5 million[108] (Figure 4), and global fertility rates (Figure 5) reaching all time lows linked to increased access to education and to contraceptives,[109]. The bigger picture related to UHC is less encouraging with evidence of widespread stalling, or reversals, in progress[110] including in Canada[111] where our system has been characterised recently as "the least universal, universal health system"[112].

The ambition of UHC has provoked a renewed focus on primary healthcare (PHC)[113,114,115] and its realisation through best-buy policies,[116] financing,[117] digital information systems, and front line workers such as community health workers,[118] nurses and midwives.[119,120] This policy convergence could be strengthened through Canada's leadership and sustained investments in women's and children's health and nutrition, recognizing that a focus on this constituency is a nidus that unites health systems across all causes of illness be they infectious, chronic, or injury-related and across the lifespan from cradle to grave. Moreover, Canada's commitment to FIAP helps to ensure that women's rights and other social drivers of health are central considerations, rather than afterthoughts, to UHC/PHC policy and programs.

The UHC and PHC policy clarions represent an important opportunity to align Canada's development assistance for health across diverse global health initiatives (GAVI, GFATM, GFF, NI). Beyond time-bound targets linked to the SDGs, there is a growing need to clarify how global financing is enabling and empowering recipient

countries to marshal national resources to improve the performance of their health systems. It also represents an opportunity to recognize that Canada also faces similar challenges with its universal health system. Whether it is the health workforce crisis, equitable access to primary care in diverse settings, especially among newcomers to Canada, or the suitability and sustainability of the financing architecture, paths forward on all these issues have global-local relevance and interdependencies that should not be overlooked. The Expert Panel finds that Health Canada and Global Affairs Canada, in collaboration with other partners, could establish an "accelerated UHC/PHC strategy" that catalyse learning systems for UHC/PHC[121,122] with a triumvirate focus on women's health, the health workforce and innovative ways to build and sustain domestic financing capacity.

To move this strategy forward, the Panel believes it would be important to identify time-bound targets related to universal access (e.g. HPV vaccines, or Vitamin A supplements), and systems strengthening (e.g. supported front-line providers), that Canada would champion. Such sentinel focus could build on our recent domestic breakthrough in providing universal contraceptive coverage[123] and catalyse the financing of universal contraceptive coverage as an integral part of primary care available to women everywhere. This builds on Canada's acknowledged and sustained leadership and could form part of Canada's G7 agenda and/or a global coalition of like-minded countries from the global North and South. The target would be to provide at least 100 million more women with rights-based access to a full-range of modern contraception by 2032, thereby more than halving unmet need[124] in time for Canada's next G7 presidency.

Key finding #2: Advancing "One Health Security" through sustainability and equity

Canada's exceptional interconnectedness, through population mobility, social and cultural ties, trade and investment, and scientific and technological infrastructure, with the rest of the world[125] makes global cooperation vitally important to the country's health security. However, lessons from the COVID-19 pandemic, alongside the evolving polycrisis, point to the need for critical reflection about what we mean by, and how we can best advance, health security.[126] The danger is that we continue to manage threats singularly, reactively and with short-termism, thereby falling into the established pattern of panic and neglect.[127] How the pandemic was experienced differentially and disproportionately within and across countries must also be recognized in future planning.[128,129] There is thus an important opportunity, as part of Canada's renewed role in global health, to better prevent, prepare for, respond to and recover from future public health emergencies.

For this purpose, the Panel concludes that Canada would benefit from advancing a new approach to health security which embeds both sustainability and equity as core principles. To achieve this, the Panel identifies three key opportunities: a) stewarding One Health Security as a new policy framework; b) strengthening primary prevention to achieve better balanced risk management; and c) catalysing capacities to tackle more diverse risks to health security at home and abroad.

Advancing the concept of One Health Security

> *Parents used to be able to comfort their children by saying 'Everything's going to be alright; we're doing the best we can and it's not the end of the world.' But you can't say that to us anymore. Our planet is becoming worse and worse for all future children. Yet we only hear adults talking about local interests and national priorities.*
>
> Severn Suzuki, Age 12, Earth Summit, Rio de Janeiro, 1992[130]

Canada has been among the first movers on critical issues related to global environmental change including the landmark 1987 Montreal Protocol on Substances that Deplete the Ozone Layer,[131] the 1988 World Conference on the Changing Atmosphere: Implications for Global Security on Global Warming,[132] the 1992 UN Conference on Environment and Development (known as the Earth Summit),[133] and 2001 Stockholm Convention on Persistent Organic Pollutants.[134] Since hosting the inaugural meeting of the Global Health Security Initiative in 2001, which brought together 9 countries and the European Union "after the September 11, 2001 terrorist attacks to exchange information and coordinate practices within the health sector for confronting new threats and risks to global health,"[135] Canada has also played an active role on varied fronts to strengthen health security as part of the Global Health Security Initiative.

The imperative now is to move from a health security agenda framed in largely military and biomedical terms, with a tendency to focus on national interests and selected health threats,[136] towards a more holistic notion of One Health Security focused on the interconnectedness of human, animal and environmental health.[137,138] To advance such an approach, and consonant with the Truth and Reconciliation Commission process, Canada should reorient its health security approach around the values Indigenous peoples place on intergenerational equity (i.e., Seven Generations Principle), and sustainable coexistence with the Earth and all living things (see Box 3).[139] The approach is summarised in this widely quoted phrase, "We do not inherit the earth from our ancestors; we borrow it from our children."

There are several important and timely opportunities to advance a One Health Security approach: the ongoing negotiations on the WHO pandemic agreement,[140] the follow-up to the Conference of the Parties (COP) 28 focused on climate change and health, and the One Health Quadripartite Agreement including efforts to prevent and prepare for emerging zoonotic threats such as H5N1 (see Box 4). In each of these forums, Canada should champion the inclusion of sustainability and equity goals backed by core metrics,[141,142] The Panel recommends that Canada seize these opportunities, following the COVID-19 pandemic and evolving polycrisis, to advance a One Health Security framework with public and private partners.

Risk management from primary prevention to recovery of core functions in societies

The activities of the Global Health Security Initiative, and the revisions to the International Health Regulations agreed in May 2024, are skewed towards "downstream" threats. Similarly, the draft WHO pandemic agreement only "refers to post-spillover secondary pandemic prevention, which focuses on actions taken after a pathogen has spilled over from animals to humans, which is often referred to as preparedness and response."[143]

The Panel acknowledges that strengthening preparedness and response capacities worldwide ahead of the next pandemic is critical. In Canada, as described in Section 5.1, COVID-19 revealed major vulnerabilities in pandemic planning related to, for example, the lack of standardised health data systems, domestic manufacturing of vaccines, therapeutics and personal protective equipment (PPE), and effective management of risks in long-term care facilities. For example, investments by the Canadian Biomedical Research Fund and Biosciences Research Infrastructure Fund in 19 projects under Canada's Biomanufacturing and Life Sciences Strategy, aims to increase preparedness "for future pandemics by increasing domestic capacity through investments and partnerships across the academic, public, private and non-profit sectors to produce life-saving vaccines and therapeutics."[144] The creation of Health Emergency Readiness Canada (HERC) in 2024, within Innovation, Science and Economic Development Canada, is similarly intended to enhance domestic medical countermeasures capabilities.[145] However, we argue that focussing largely downstream skews risk management, and thus spending and operational priorities, towards a narrower range of pathogens and certain types of core capacities to detect and respond to them.[146]

The Panel concludes that a One Health Security approach would encompass a fuller and more balanced assessment and mitigation of risks spanning prevention, preparedness, response and recovery. This approach would address the neglect of upstream (distal) determinants which influence the likelihood of pandemic events occurring in the first place. This requires a greater focus on primary prevention and mitigation of risks for human, animal and environmental health, and policy changes required for better recovery and adaptation.[147] The Quadripartite's One Health High-Level Expert Panel,[148] for example, identifies upstream investment opportunities to mitigate pathogen spillover including changes in livestock management, wild animal trade and consumption regulation, and climate change and biodiversity efforts. The integration of the STEEP (social, technological, economic, environmental, political) framework by the Global Preparedness Monitoring Board (GPMB) also identifies a fuller range of threats requiring risk mitigation in pandemic planning.[149] There are also untapped opportunities to harness big data and new data science technologies (e.g. AI) to create real-time monitoring, modelling and managing (3M) of upstream determinants and risk assessment.[150]

Catalysing and consolidating core capacities

Among the challenges inherent in the existing global health security agenda is that threats are multifactorial, mutually reinforcing, transboundary, and accelerating faster than the generation of effective risk management

options. Mobilising to manage these risks demands capacities that are not only urgent, but in short supply. The Panel recommends that Canada catalyse One Health Security capacities along at least two axes.

First, building on Key Finding #1, there is a need to strengthen the workforce for upholding One Health Security. Canada has historically and prominently contributed to humanitarian efforts worldwide through its armed forces[151] and NGOs. However, a review of the adequacy and appropriateness of existing surge capacity at a time of polycrisis is needed. The current capacity to respond to public health emergencies is particularly limited. Allocating scarce resources for rare but potentially catastrophic events is always challenging. To broaden the utility of standing capacity, this workforce could be created under a broader remit of humanitarian assistance and disaster relief for use at home and abroad. In addition to pandemic events, Canadian personnel could be deployed during severe weather events, wildfires, earthquakes, large population displacements, and other catastrophic events which are expected to become more frequent. This requires Canada to have a well-trained workforce in reserve during "peacetime" which can then be deployed during public health emergencies.

The creation of One Health Security core capacities requires not only redressing the anaemic supply of training programs spanning prevention, preparedness, response and recovery, but also integrating the roles of important organizations like Médecins Sans Frontières (MSF), the Canadian Red Cross and Canadian military — groups which mobilise and manage "reserves" in emergencies and disasters both at home and abroad. In addition to the health sector, this workforce should span essential services and supplies that maintain societal functioning. Canada must invest in and manage this workforce as an essential national capacity. For this purpose, the Panel supports increased investment to build upon Public Safety Canada's report, *Supporting a Humanitarian Workforce to Respond to COVID-19 and Other Large-Scale Emergencies Program*.[152] The panel also recommends prospective thinking about how to engage training institutions like universities in strengthening and sustaining education opportunities in this relatively neglected area.[153]

Box 3: Indigenous practices as a model for One Health Security

Professor Malek Batal's research focuses on understanding how the environment, food systems, and the health of animals and humans are linked. The successful efforts of the Syilx Okanagan Nation in British Columbia to revitalise the salmon population, as a cornerstone of the community's cultural and spiritual identity, offers an example of Indigenous practices of stewardship from which One Health Security can learn. Through restoration initiatives, encompassing measures such as waterway undamming, water quality monitoring, and the release of fish fry over a decade, there has been a resurgence in salmon stocks. This, in turn, has supported local diets, reaffirmed cultural ties and ceremonial practices, and revitalised commercial fishing activities. Wider benefits have been created for wildlife that reinforce the interconnectedness of environmental stewardship, animal welfare, and health and well-being of communities.[154,155]

In Ecuador, Indigenous women farmers similarly bring together agricultural and ecological practices to diversify crops and apply organic farming techniques that preserve soil health and protect biodiversity. Professor Batal's research found that, by minimising agrochemicals and instead embracing sustainable agricultural practices, these women play a pivotal role in mitigating environmental degradation and safeguarding environmental, animal and human health. For instance, households adopting agro-ecological practices had greater dietary diversity and consumption of nutrient-rich foods compared to those using conventional farming methods. Socioeconomic benefits include empowerment of small-scale farmers, increased local food sovereignty, and greater social and health equity within rural communities.[156,157]

Second, advancing One Health Security should not reside solely within the authority or responsibility of government at the federal and provincial/territorial levels. Risk management for One Health Security requires a plurality of state and non-state actors, spanning the human, animal and environmental health sectors.[158] Critically, local communities and leaders are an essential component of future pandemic readiness and key economic sectors are critical to the success of One Health Security. Accordingly, Canada should create mechanisms to engage diverse actors in collective action. This includes a range of concerted policy initiatives and financing that address the longstanding underinvestment in PHAC and other institutions concerned with One Health Security.

Box 4: Equity and sustainability in the spread of highly pathogenic avian influenza (H5N1)

The highly pathogenic avian influenza A virus (H5N1) was originally discovered in domestic waterfowl in southern China in 1996. Human infections of H5N1 have occurred sporadically from direct or indirect exposure to infected animals. Globally, from January 2003 to March 2024, 888 cases of human infection were reported from 23 countries, resulting in 463 deaths (case fatality rate of 52%).[159] No sustained human-to-human transmission has occurred to date.

Concerns about this potential eventuality have grown since 2020 when the virus was associated with large and deadly outbreaks in wild and farmed bird populations across multiple continents. Alongside this wider geographical spread has been reports of infection in more than 40 mammalian species. These reports include large outbreaks in fur farms, in which transmission between mammals could not be excluded, and US dairy farms.[160]

Growing concerns about the potential for H5N1 to cause a human influenza pandemic have triggered urgent attention to such measures as increased surveillance, vaccine production, and stockpiling of antivirals. In addition, a planetary approach to pandemic planning for H5N1 requires greater attention to equity and sustainability. Equitable access to vaccines and antivirals, based on need rather than wealth, would prioritise agricultural workers, frontline healthcare workers and other populations at higher risk. Working and living conditions that increase the risk of infection or prevent access to healthcare by, for example, migrant farm workers, should be urgently addressed.

Sustainability requires urgent attention to the risks of spillover and transmission created by large-scale commercial rearing of livestock. A medium-term strategy for improved regulation to control such conditions, and a longer-term strategy of reducing meat consumption should be developed.

Key finding #3: Renew Canadian leadership in health promotion and protection through a focus on wellbeing

Upon the half century anniversary of the groundbreaking Lalonde Report,[161] the Panel recognises Canada's contributions to health promotion worldwide through its active support for the Ottawa Charter for Health Promotion (1986), WHO Framework Convention on Tobacco Control (2003), and WHO Commission on the Social Determinants of Health (2008). However, Canada along with countries worldwide are grappling today with a new and multi-faceted challenge, the sharp and global increase in non-communicable diseases (NCDs) which now account for 74% of all annual deaths globally.[162] The main drivers of NCDs globally are tobacco and alcohol use, unhealthy diets, and low levels of physical activity.[163] With recognition of the growing burden of NCDs associated with a globalised world,[164] and the struggle by healthcare systems and societies more broadly to meet these needs, the Panel finds that Canada could build on a strong legacy to provide renewed leadership in health promotion and protection.

Health promotion and protection in a globalised world: The commercial determinants of health

Canada could lead new action to mitigate the harms arising from what are now known as the commercial determinants of health (CDOH).[165] CDOH can be defined as "the systems, practices, and pathways through which commercial actors drive health and equity."[166] CDOH have become key drivers of health and wellbeing both at home and abroad. This is because transnational corporations (TNCs) with global reach are now the main producers of goods and services in the world economy. While some, such as tobacco products, are inherently harmful to health, others have the potential for either positive or negative impacts on health. For instance, the globalisation of food production and consumption has changed what and how much people eat and drink.

Box 5: Canadian action to tackle the global opioid crisis

While opioids are commonly used for the treatment of pain, their use without medical supervision can lead to dependence and other health problems. Between 2016 and 2024, there have been more than 47,000 opioid-related deaths reported in Canada, more than all other major causes of accidental deaths combined.[167] Indigenous peoples continue to be disproportionately impacted.[168] In 2019, there were approximately 600,000 deaths worldwide from drug use, of which 80% were related to opioids.[169]

This worldwide opioid crisis was created, in large part, by the commercial determinants of health. While currently-driven by illicit supplies of unsafe drugs,[170] aggressive marketing and promotion of prescription opioids to healthcare providers by pharmaceutical companies in the mid 1990s created the problem.[171] Opioid manufacturers minimised the risks and addictive potential of their products, made deceptive marketing claims, manipulated scientific evidence, funded opioid-friendly advocacy and professional organizations, and lobbied policymakers.[172] Additionally, regulators failed to expeditiously respond by neglecting to monitor prescriptions, enforce strict prescription guidelines, and prohibit misleading marketing.[173] Efforts to restrict access to prescription opioids has fuelled a global market illicitly supplying potentially unsafe and toxic drugs.[174] According to the UN Office on Drugs and Crime (UNODC), record volumes of illicit drug supply are being enabled by agile global trafficking networks. This global drug economy, in turn, is exacerbating other criminal activities such as money laundering, illegal logging and mining, and illegal land occupation including lands of Indigenous peoples.[175] This is a serious crossborder issue that cannot be solved by individual countries alone.

To address the opioid crisis, Canada must work cooperatively with other countries to spearhead a new global initiative that includes: 1) improving transparency and accountability measures surrounding opioid advocacy groups; 2) improving post-market surveillance of drugs at risk of abuse; 3) stricter oversight of pharmaceutical marketing, including industry sponsorship of healthcare professionals' education events and conferences; and 4) implementation of measures (modelled on The Physician Payments Sunshine Act) that mandates all healthcare professionals to disclose any funding from pharmaceutical or medical device companies.

While the commercial for-profit sector will remain an essential part of all societies, effective checks and balances to ensure markets serve people and the planet are needed to protect and promote human health. Canada could support action on the CDOH by championing regional and multilateral efforts to share policy innovations and strengthen regulatory frameworks. Crossborder policy diffusion and learning are essential given the interconnectedness of global drivers and domestic impacts from the CDOH. For example, Canada could provide funding to advance the findings of the *WHO Global Report on the Economic and Commercial Determinants of Health*. These efforts should be underpinned by stronger federal and provincial/territorial legislation to hold industries to account for harms to health and wellbeing. For example, amid increased polarisation in public discourse, new legislation on conflicts of interest and funding by think tanks, research

institutes and advocacy groups would strengthen transparency and public trust. New measures akin to Canada's commitment to the FCTC (Article 5.3) are needed at all levels of government to protect health research, policy, and practice from undue influence from commercial interests. Similarly, the proposed Framework Convention on Food Systems by the Lancet Commission on Obesity "would provide the global legal structure and direction for countries to act on improving their food systems so that they become engines for better health, environmental sustainability, greater equity, and ongoing prosperity."[176]

Global toxic drug crisis

Canada could use its considerable convening power to lead a new global task force on substance use focused on the toxic drug crisis (see Box 5). In 1974, the Lalonde Report warned of "a significant increase in alcoholism and drug addiction."[177] In the twenty-first century, substance use has grown exponentially in magnitude and complexity. Globally, over 296 million people used illicit drugs in 2021, an increase of 23% over the previous decade. The number of people (39.5 million) who suffer from drug use disorders has risen by 45% in 10 years. In Canada, there are substantially elevated numbers of opioid-related deaths and other harms since 2016. Between 2022 to 2023, opioid-related deaths in Canada rose by 8%, and hospitalizations by 13%.[178] The crises arise from an interconnected mix of global and domestic drivers, and thus require cooperation across countries and sectors to tackle effectively.

Box 6: The Global Challenge of Population Aging

The expansion of multimorbidity and disability with population ageing poses an important challenge for health systems around the world. Yet most countries lack adequate information sources to evaluate the effectiveness, efficiency, and value of healthcare for older adults.

Professor John Hirdes at the University of Waterloo co-leads the interRAI network of more than 140 clinicians, researchers, and policy experts in over 40 countries,dedicated InterRai systems support person centred care planning and outcome measurement at the patient level to improve quality of care and quality of life of vulnerable populations, including older adults, individuals with disabilities, and those affected by mental illness.

Canada has almost 30 years of experience in implementing interRAI systems in home care, long term care homes, mental health, and post-acute care settings. To date, over 23 million interRAI assessments have been completed, informing shared decision-making and resource allocation across most provinces. For example, the Canadian Institute for Health Information (CIHI) publicly reports interRAI data, including quality indicators in long-term care, underscoring interRAI's impact on health system accountability. Notably, interRAI data informed efforts that reduced physical restraint use in care facilities from over 40% in facility-based care in the early 1990's to below a national average below 5% today. This partnership between interRAI and CIHI is internationally regarded as an exemplary prototype for scaling up rigorous health research to drive change at the national level.

Professor Hirdes and other interRAI colleagues have also adapted interRAI systems for use in other countries recognizing the ubiquitous challenge of ageing populations. For example, the Pan-African Utilisation of Lay Assessment Systems (PAULAS) project implemented in 13 countries in Africa demonstrated the feasibility of obtaining high quality geriatric assessment data that can be used to support improved clinical care, yielding better health outcomes for older Africans. The PAULAS project also builds capacity for future applied research on health and ageing in Africa with the establishment of an African-led research network within the larger interRAI collaborative.

Advancing health promotion and protection by championing the well-being approach

In 2021, the Department of Finance introduced Canada's *Quality of Life Strategy* [179]as part of the global movement towards well-being economies advocated by countries, private companies, and civil society organizations.[180] Recognizing shortfalls in traditional economic measures of societal wealth and wellbeing e.g. growth in GDP, the strategy aims to value non-economic aspects of quality of life such as the environment and individual measures of well-being such as "happiness" pioneered by Canadian economist John Helliwell.[181] This approach aligns well with the World Wellbeing Movement, a coalition of global leaders from business, civil society, and academia that have come together to help put wellbeing at the heart of decision-making in both business and public policy.[182] This has led to a broad range of initiatives including the Well-Being Economy Alliance that advocates for an economy designed to serve people and the planet, not the other way around. Rather than treating economic growth as an end in and of itself and pursuing it at all costs, a Wellbeing Economy puts our human and planetary needs at the centre of its activities, ensuring that these needs are all equally met, by default.[183]

The Panel finds that a wide variety of health promotion and protection needs in the twenty-first century could be brought into sharper focus through the concept of wellbeing.

A promising example includes Canada's leadership in brain health that aligns neurologic, mental and social health across the life course with a focus on primary prevention and community-based, context-specific delivery.[184] Similarly, recent findings from the Lancet Standing Commission on Dementia, points to 14 risks across the life course that could be managed to reduce dementia cases by nearly 50%.[185] In the global context of rapid demographic change, the promotion of Brain Health, the prevention of dementia and the re-orienting of systems to promote healthy ageing and wellbeing (see Box 6) within and across nations are amongst the opportunities for revitalising the health prevention agenda within a broader framework of the Wellbeing Economy.

Key Finding #4: Urgently Tackle the Health Workforce Crisis

Throughout its consultations and deliberations the Panel consistently returned to the primacy of the health workforce in seizing opportunities and surmounting challenges be it with respect to frontline services for women and children, access to mental health services, timely pandemic response, tackling commercial determinants of health or stewarding innovations from the bench to the bedside. Despite growing evidence over the last 20 years on the central importance of the health workforce to achieving health goals,[186] be it the MDGs,[187,188,189] transforming health system in an interdependent world,[190] the SDGs,[191] or the MNCH/SRHR agenda,[192] concerted and innovative actions that are commensurate with needs both within and across countries remain in short supply. In the post-pandemic period, Canada and many other high-income countries are struggling with acute and chronic workforce crisis characterised by dire shortages, high burnout with early retirements and a growing dependence on recruitment of health workers from LMICs.

Growing shortfalls in the number and distribution of health workers reflect demographic forces[193,194] related to widespread fertility declines and population ageing, combined with increasing demands and needs for healthcare and the failure of national health workforce training institutions to respond. These rising pressures on the workforce reflect and express longstanding gender inequalities and the relative lack of value placed on women's work more generally. Around 70% of health and healthcare work is delivered by women, many in informal or underpaid roles, exposed to unsafe work conditions, and/or hindered from career progression.[195,196,197,198] While the crisis has multiple complex dimensions, it reflects most fundamentally a failure of health systems to invest in the workforce in ways that meet growing and changing needs to provide, protect and promote health. Despite mounting evidence on the importance of the health workforce as a major driver of progress in global health, it has failed to register as a priority for either domestic investment or development assistance.[199]

Box 7: The de facto "subsidy" to Canada's health system from not paying for the training of internationally educated health workforce in Canada

In 2022, an estimated 78,569 internationally educated health workers (IEHW) were employed in Canada (licensed and practicing). This constitutes about 14.5% of the Canadian healthcare workforce although this proportion varies according to professions from as many as 35% and 31% for pharmacists and physicians respectively, to as low as 10% and 6% of nurses and physiotherapists respectively. Should these IEHWs have been trained in Canada, the Canadian health system would have paid just under $22 billion (C$21,943,000) for their training, drawing on the average costs of training by professional groups. Assuming the average duration of a career for IEHWs is 20 years, the net present value on an annual basis of the education training costs averted in the Canadian system amounts to more than C$1.1 billion/annum.

Costs are in 2023 Canadian Dollars.

Professional [a]	*Number of IEHWs and % of Canadian healthcare workforce (2022)*	*Training costs IEHWs in Canada ('000s)* [b]	*Total training costs averted (millions)*	*Total training costs averted/annum (millions)*
Total	***78,569 (15%)***		***$ 21,943***	***$1,156***
Physicians	*24,967 (27%)*		*$ 12,242*	*$611*
Family medicine physicians	*14,303 (31%)*	*$405K*	*$ 5,791*	*$289*
Specialists	*10,664 (23%)*	*$605K*	*$ 6,451*	*$322*
Regulated nurses [c]	*33,425 (10%)*		*$ 5,739*	*$286*
Nurse practitioners	*366 (5%)*	*$231K*	*$ 84*	*$4*
Registered nurses	*33,059 (10%)*	*$171K*	*$ 5,655*	*$283*
Occupational therapists	*1,239 (6%)*	*$225K*	*$ 279*	*$14*
Physiotherapists	*6,469 (23%)*	*$193K*	*$ 1,252*	*$63*
Pharmacists	*12,469 (35%)*	*$195K*	*$ 2,431*	*$122*

Notes:

[a] Note that the number of IEHW includes Canadian citizens who did their studies abroad (CIHI & OECD data).
[b] The cost per IEHW in Canada is based on the estimated total training cost *plus* the fees associated with credentialization.
[c] Regulated nurses exclude registered psychiatric nurses and licensed practical nurses due to data quality issues. There are an estimated 9,716 internationally educated licensed practical nurses in Canada in 2022 (CIHI).

Sources:
- Canadian Institute for Health Information. (2022). Health Workforce Database. https://www.cihi.ca/en/the-state-of-the-health-workforce-in-canada-2022/internationally-educated-health-professionals;
- Health Canada. (January 2008). Overview of the Cost of Training Health Professionals. https://publications.gc.ca/collections/collection_2009/sc-hc/H29-1-2009E.pdf
- National Nursing Assessment Service. (2024). Application fees. https://www.nnas.ca/application-fees/
- Canadian Occupational Therapy Regulatory Organizations. (2024). https://acotro-acore.org/seas/
- Canadian Alliance of Physiotherapy Regulators. (2024). https://alliancept.org/internationally-trained/credentialing-overview/
- Pharmacist Gateway Canada. (2024). https://www.pharmacistsgatewaycanada.ca/

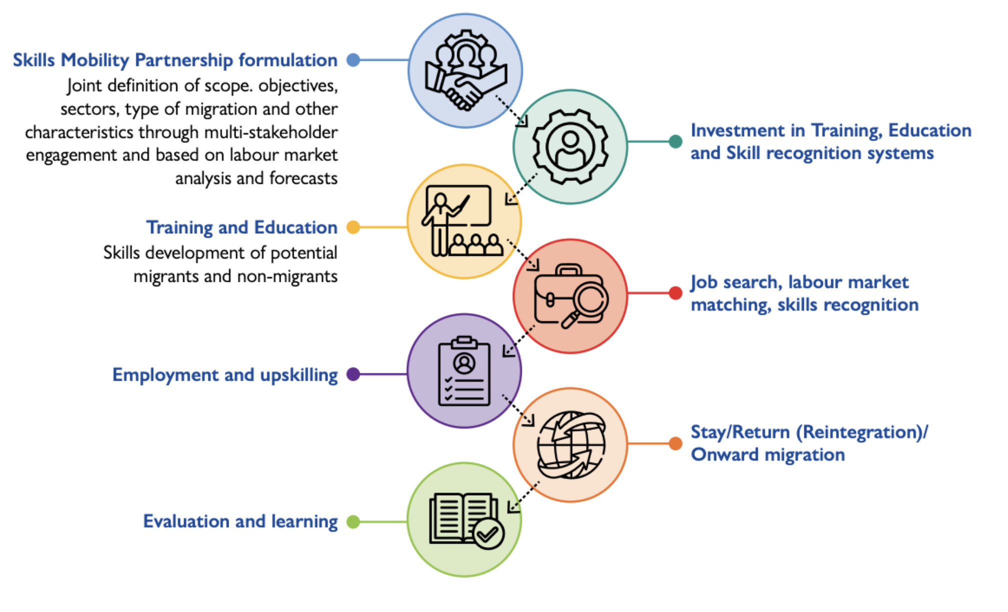
The generalised health workforce crisis is manifested in many countries, including Canada, and is marked by large flows of health workers across borders. More than a quarter of health workers in Canada are immigrants,

including 36% of physicians, 23% of nurses and 37% of pharmacists.[200] While millions of Canadians do not have access to primary care providers, thousands of internationally trained health professionals residing in Canada are unable to obtain credentialing that might help to bridge these gaps. This dependence in Canada on health workers who have migrated and/or who are internationally educated appears to be growing over the past decade,[201] as it is in many other countries worldwide.[202]

In the wake of the COVID-19 pandemic, the Government of Canada has adopted health worker immigration policies[203] that were said to support a sustainable health workforce as an integral part of the Federal/Provincial/Territorial C$200 billion, 10-year "Working Together to Improve Health Care for Canadians Plan." These policies operate at the level of provincial and territorial governments,[204] and among other things, provide overdue attention to the importance of expeditiously getting residents who completed health worker training outside Canada registered for work in the health sector. The policies, however, rely heavily on recruitment of health workers residing in other countries, raising concerns that Canada is poaching health workers,[205,206] and thereby in breach of its commitment to the WHO Global Code of Practice on the International recruitment of Health Personnel.[207] Furthermore, because the country does not invest in the costs of training health workers recruited to Canada, the Canadian healthcare system realises more than a C$1 billion training subsidy annually — more than half of what Canada spends in development assistance for health each year (see Box 7).

Box 8: Skills Mobility Partnerships for Global Skills Development[208]

In 2018, as part of the Global Compact for Safe, Orderly, and Regular Migration, Heads of State and governments committed to building global skills partnerships to promote sustainable migration. Objective 18 of the Compact specifically calls on countries to invest in skills development, recognize qualifications and competencies, and form partnerships that enhance the training capacities of national authorities and other relevant stakeholders. In follow-up, the International Organization for Migration, in 2019, introduced Skills Mobility Partnerships (SMPs) frameworks to enable origin and destination countries to share the advantages of migration in contributing to economic growth and development outcomes through a structured and collaborative approach to skills mobility. SMPs tend to vary in form, modality, and sectoral focus, adapting to different types of mobility and levels of stakeholder involvement, but tend to include the essential components highlighted by the figure below.



Source: International Organization for Migration. Skills mobility partnerships: Recommendations and guidance for policymakers and practitioners. IOM, Geneva, 2023.

The magnitude and pervasive nature of the health workforce crisis across all countries, its important gender dimensions, and the concerns about poaching workers from LMICs, make this a timely and urgent springboard issue to advance Canada's role in global health over the next twenty years. The Panel believes the timing is propitious recognizing pioneering philanthropic efforts such as the Mastercard Foundation's Africa Higher Education Health Collaborative (AHEHC) that aims to strengthen health education systems in Africa through partnerships with universities, increased access to quality education, and improved health training programs,[209] as well as their Young Africa Works Strategy to enable 30 million young people in Africa to secure dignified and fulfilling employment by 2030,[210] much of which has direct relevance to the health sector.

Specifically, the Panel proposes that an emergency program potentially named "Canada's Emergency Workforce for Health Innovation Program (CEWHIP) be developed immediately to address the health workforce crisis. The program would draw on diverse sectors (health, education, employment, immigration, foreign affairs), key health workforce actors (training institutions, employers, recruiters) and levels of government (F/P/T). CEWHIP would have an explicit domestic-global focus with time-bound targets of Net Zero Poaching and Net Workforce Gains[211] by 2035 ushering in a decade of innovation in the training, recruitment and retention of health workers. CEWHIP would aim to mobilise new funding at a level commensurate with the de facto annual subsidy Canada receives through recruitment of internationally educated health workers i.e., C$1 billion annually (less than 0.3% of annual domestic health expenditure). Calls for proposals would encourage Canadian and international partner institutions alike to develop intrepid, "win-win" programs to address critical health workforce challenges related to training, deployment, or retention in key geographies, professions, or communities, underpinned by core values of gender equity and solidarity. Annual forums would assess progress towards the Net Zero Poaching and Net Workforce Gains targets, foster joint learning among implementers, align with multilateral efforts such as the Institute of Migration's Skills Mobility Partnerships (see Box 8) and identify emerging issues requiring further attention. As a flagship initiative, the CEWHIP should aspire to be a defining pillar of Canada's global health and diplomatic leadership, especially if announced at the time of the Canada-hosted G7 Summit in 2025.

Key Finding #5: Set a clear global health strategy for Canada

The present context of polycrisis poses in all societies profound threats to universal health coverage, One Health Security, health promotion and wellbeing while placing a premium on a fit-for-purposes workforce for health. All countries, including Canada, thus require health strategies that address the interconnectedness of domestic and global health challenges. Importantly, the COVID-19 pandemic demonstrated how health in Canada is inextricably linked to events and drivers beyond our national borders. The pandemic aftermath suggests that this crucial lesson, underpinning active engagement in global health, has not been learned. There is even a danger of Canada shifting away from global health engagement to what are perceived as domestic priorities. However, the key finding of this report is that health provision, promotion and protection in Canada cannot be effectively achieved without active engagement in global health. Advancing domestic and global health are not trade-offs but interconnected policy goals. We therefore support recent calls for a coherent strategy "with a clear vision, priorities and governance, dedicated resources, and ongoing monitoring and evaluation."[212] A clear Canadian global health strategy is needed to set out this rationale, for government and beyond, in a non-partisan way, and guide targeted investments in priority areas such as the health workforce, gender equality, universal health coverage, health security, and health protection and promotion. The Panel notes that Key Findings #1–4, as described above, constitute important issues and axes that should be drawn upon in the development of a Canadian global health strategy.

Many countries have already recognized the importance of an overall global health strategy in recent decades, with several adopting new strategies since the COVID-19 pandemic. Canada and Italy are now the only Group of Seven (G7) countries without such a strategy. Based on our comparative review of existing global health strategies (see Table 1 below and Annex 1), and consultations conducted by the Expert Panel, we suggest the following elements are needed for an effective Canadian global health strategy:

A clear and consensual definition of global health;

- Statement of agreed values, principles and rationale for Canada's engagement in global health;
- Current and regularly updated environment scans of priority global health challenges for Canada;
- Knowledge of Canada's strengths and potentially distinct contributions to global health;
- Strategic framework with priority goals, targets, milestones and timelines;
- Whole-of-government and whole-of-society institutional plan for implementation of the strategy;
- Metrics and processes for tracking and evaluating progress in achieving goals over time; and
- Plans for meaningful engagement, collaboration and partnership with key stakeholders, priority populations and the public including Indigenous Peoples.

Table 1: Summary of available global health strategies of selected countries

Explicit global health strategy	Global health strategies vary widely in their scope and detail, from broader frameworks emphasising health equity and universal health coverage (Sweden and France), to more focused strategies on health security and pandemic preparedness (EU and Japan). Our analysis of strategies points to growth in interest in this area, even if many strategies remain quite broad or lack clear implementation, accountability or evaluation mechanisms. Many also did not explicitly state how the strategy was developed.
Time Frame	Many countries have created or revised their global health strategies in the "post-COVID" era, with implementation periods such as 2022–2030 for the European Union, 2023–2027 for France, 2022–2030 for Japan, 2021–2027 for Thailand, and 2023–2030 for the Netherlands.
Definitions of global health	Most strategies did not include explicit global health definitions. Instead, the rationale for a global health strategy, with a variety of principles, and focus areas were listed.
Rationales	Rationales vary from country to country and point to a diversity of reasons for a strategy including to: address evolving health challenges; strengthen partnerships; contribute to worldwide health goals; enhance national and global security; improve public health outcomes; and provide leadership and expertise in international health diplomacy and development.
Governance	Global health strategies appear to be typically managed by several ministries and departments (e.g., France's strategy is coordinated by the Ministry for Europe and Foreign Affairs, Ministry of Health and Prevention, and Ministry of Higher Education and Research, and Japan's approach is promoted by the Cabinet Secretariat, MOFA, MHLW, MOF, and other relevant ministries and agencies.)
Key Principles	Common principles across countries include a focus on components of equity, and human dignity. For example, Sweden emphasises leaving no one behind as one of their key principles whereas Germany prioritises democracy, partnership, human dignity, diversity, and respect for human rights as some of their key principles.
Key Priorities	Strategies share common priorities such as advancing universal health coverage, combating pandemics, and reducing health inequalities. However, they differ in their emphasis, with some countries like the United States focusing on protecting and promoting their national health through global action and leadership. Others, such as Sweden and France, advocate for a more comprehensive approach that integrates health, environmental sustainability, and social justice.

Note: Countries/regions assessed include European Union, France, Germany, Japan, Thailand, Netherlands, Sweden, Switzerland, United Kingdom, and the United States. The countries we reviewed were selected based on whether we were able to find explicit documents referring to the country's global health strategy. We recognize that many countries may have operational global health strategies even if not defined and specified into a document. Though we did not conduct a review of existing strategies systematically, we were unable to identify explicit documents with global health strategies from LMICs. We also sought to identify global health strategies for BRICS countries without success. While there are analyses of the increased provision of development assistance for health, notably by China, as part of broader foreign policy, we could not identify an explicit policy or strategy guiding these efforts.[213,214] See Appendix D for country-specific assessments of the strategies.

Key Finding #6: Bolster Research and Innovation Systems

Closely complementing and informing a global health strategy for Canada (Key Finding #5), and building on previous recommendations[215] and recent efforts of CHIR[216],the Panel finds there is a need for a complementary strategy focused on research and innovation systems. The need for a strategy not only reflects the instrumental importance of research and innovation in tackling global health challenges, it also recognizes important opportunities and challenges that merit strategic consideration, three of which are noted here.

The first of these relates to the boundless and rapidly emerging opportunities for research and innovation to improve health with science and emerging technologies that are transcending disciplines, sectors and national borders. These opportunities, especially with respect to life sciences and digital health, are increasingly being harnessed through transnational partnership or corporate mechanisms that afford important scale, scope, speed and other efficiencies both in peacetime and emergencies. Joining a chorus of other recommendations to strengthen Canadian science and innovation,[217,218,219,220,221] Canada needs to be clearer on how it is effectively engaging in this rapidly changing global landscape: "It's not about competing, but rather about becoming essential."[222]

Second, the surge in new technologies especially related to digital health and artificial intelligence requires clearer agreements on principles and criteria to measure value accompanied by regulatory rigour to rule out various biases and ensure ethical conduct.[223,224] These systems need to be set up and/or strengthened seizing cross-jurisdictional efficiencies where appropriate. They should also be complemented by production and procurement systems geared to meet global needs based on market mechanics of higher volumes and lower margins as well as regulatory contingencies to minimise the spectre of global inequities in access to life saving products as was seen in the context of COVID-19 vaccines. Patient and public engagement throughout the research and innovation system complemented by research and regulation to redress hesitancy, disinformation, and distrust, are essential ingredients to the governance of research systems everywhere but are in short supply.[225,226,227,228]

A third strategic consideration is related to structural skews in research systems that constrain the scope, scale, speed, relevance and quality of research. Research priorities and their funding may not match current or prospective needs.[229] The crisis that Canada, and the world is facing, with respect to the health workforce, for example, reflects massive underinvestment in research and innovation in this critical dimension of health systems[230]. Similarly, the dearth of data with respect to animal health reflects a massive evidence gap that is holding back breakthroughs in "one health." Nor can meaningful assessments be made of the magnitude, trends, or effectiveness of interventions for commercial determinants of health without commensurate investments in research. Research policy makers need to make sure these and other critical emerging areas for research find meaningful budget space.

A further axis of this skew relates to countries — especially LMICS — or communities e.g. Indigenous, with a dearth of research capacity that effectively shuts them out from research opportunities, especially in times of emergencies. Given Canada's legacy leadership related to essential national health research (ENHR),[231] the panel finds it would be timely to review progress in strengthening ENHR with a focus on cross-cutting research systems issues like financing, infrastructure, infostructure and the workforce. The review may provide insights on how to more effectively and equitably strengthen health research and innovation systems nationally and sub-nationally especially with respect to equity deserving communities.

Incorporating the three observations above (as well as other issues), such a strategy might be entitled "ARRISE": Accountable and Responsive Research and Innovation Systems including in Emergencies. Like the global health

strategy, ARRISE needs to embrace the growing global convergence and interdependence in drivers of health with attention to the relative specificity of research agendas linked to universal health coverage, One Health Security and Health promotion, protection and well-being. It should be informed by some exemplars from other countries or regions such as the EU Horizons strategy[232] that combines objectives with respect to excellence in science and technologies, with societal goals such as the SDGs and security, and with economic aspirations concerning greater competitiveness.

In crafting such a strategy, it would be critical to engage and identify roles for the wide diversity of actors and partners from across government,[233] academia, the private sector/industry, and civil society that correspond with the spectrum of issues the strategy aims to tackle. With respect to research for pandemic prevention and response, for example, ARRISE needs to align Canada's national research reforms[234,235,236] with transnational research strategies emerging from the G7 and G20 e.g. the 100 Days Mission,[237] the WHO International Health Regulations[238], and initiatives like CEPI.[239] The objective of this alignment should be to achieve greater strategic coherence and to inform the nature and level of investments across key institutional actors be they national or global. On another front, such as Universal Health Coverage and SDG3 achievement, ARRISE, drawing on the experiences of the Global Innovation Clusters[240] and Grand Challenges Canada,[241] might forge a Grand Challenges coalition around Learning Health Systems that aims to stimulate, source and scale innovations in primary care to accelerate equitable coverage of services in Canada and other countries.

Box 9: Grand Challenges Canada: Leveraging leadership roles in multilateral initiatives to accelerate scale of investments in innovation

Canada's strategic financing of global health initiatives, combined with GCC's innovative investments, presents a powerful opportunity to enhance the reach and impact of Canada's contributions to global health as seen through to the two examples below.

As a pioneering investor in the Global Financing Facility (GFF) in 2015, Canada has contributed $477 million USD as of October, 2023 in support of its mission to advance maternal, child and adolescent health. These resources provide catalytic grants to support the development, implementation, and monitoring of government-led health investment cases backed by World Bank IDA credits. In parallel the Government of Canada has provided similar support to GCC since its inception in 2010, enabling funding of over 1,400 innovations in more than 100 countries, focusing primarily on reproductive, maternal, child, and adolescent health. Through this partnership between an innovation pipeline such as that produced by GCC, and multilateral initiative like the GFF, innovations are supported to scale from one million to 100 million people, thus moving the needle on the SDGs. These innovations are projected to save up to 1.78 million lives and improve up to 64 million lives by 2030.

On another front, GCC has linked its portfolio of medical oxygen innovations, crucial for addressing paediatric hypoxemia in LMICs, to WHO's efforts to improve access to oxygen therapy during the COVID-19 pandemic. For example, the solar-powered oxygen delivery system, SPO2, developed by Canadian paediatric infectious disease specialist Dr. Michael Hawkes, has been pivotal in addressing oxygen supply challenges in Somalia. SPO2 has provided reliable oxygen supply for treating COVID-19, birth asphyxia, pneumonia, asthma, and trauma from armed conflict. By August 2023, five additional SPO2 systems were set up across Somalia, treating over 1,000 patients. This success has inspired Somalia to adopt solar-powered oxygen therapy more broadly, contributing to a less carbon-intensive health system.

Key Finding #7: Fortify Canada's leadership in global health

Canadian capacity to lead in global health, and thus advance strategic priorities and goals, requires appropriate technical knowledge and content expertise, leadership, negotiation and collaboration skills; and experience of

working in global health settings and diverse constituencies. Importantly, future practitioners must progress from the top-down framing of global health as predominantly about the developing world. Meeting future challenges requires new understandings of the planetary interconnectedness of the challenges faced, and the array of local, national and supra-national solutions needed to address them effectively and equitably.

The Expert Panel finds that Canada's capacity to effectively engage in global health should be strengthened in three ways. First, the appointment of a **Global Health Ambassador** is needed to provide a high-profile focal point for Canadian leadership in global health. The Ambassador, appointed at the deputy minister-equivalent rank in government, would have overall responsibility to advance Canada's Global Health Strategy. Their role would be cross-ministerial, and cross-jurisdictional (F/P/T). They would also engage across the public and private sectors (i.e., civil society organizations, business, academia) to support coherence in Canada's global health activities. The Ambassador would need a combination of technical knowledge and diplomatic experience. Responsibilities would include communicating with Canadians on the rationale for Canada's active engagement in global health; monitoring progress on agreed targets and priorities; supporting Canadian involvement in G7, G20 and other intergovernmental meetings; building meaningful partnerships globally; and advocating for Canadian-led initiatives in global health.

Second, we recommend the creation of a **Canadian Global Health Hub (CG2H)** chaired by the proposed Global Health Ambassador. The CG2H could provide technical and other support to the federal government through a roster of wide-ranging expertise spanning academia, civil society, business, foundations, and other organizations such as the RSC and CAHS. As needed, working groups could be formed to provide timely evidence synthesis[242] and other inputs on priority topics to inform strategy and policy decisions. The CG2H could also play important roles in forging greater understanding of local global connections amongst diverse Canadian publics, reviewing progress on global health targets and helping to identify future priorities. In developing such a hub, it would be important to draw upon the experience of the recently created Global Health Hub in Germany[243] and our own country's experience with the Scientific Advisory Committee on Global Health,[244] the Canadian Coalition on Global Health Research (CCGHR), and the Canadian Association of Global Health (CAGH).[245]

Third, the panel recognizes the need to nurture next generation leadership in global health through a **Global Health Diplomacy and Innovation Program** that will provide a robust reservoir of talented individuals able to navigate, negotiate and innovate for global health amidst the complex realities of the 21st century. The design of such a program could draw upon Thailand's longstanding experience with the International Health Policy Program,[246] or the more recent efforts of Germany,[247] Sweden[248] and Switzerland.[249] The program should aim to redress the underrepresentation of women in global health leadership as described in the *Global 50/50 Report*[250] and draw insights from the intrepid efforts of *WomenLift in Health*.[251] The program's operationalization would benefit from leadership from multiple federal ministries — Foreign Affairs, Health, ISED - with incentives to training institutions across Canada to develop specific programs.

CONCLUSION

The task of this Expert Panel has been to reflect on Canada's century-long commitment to international health cooperation, and contributions to global health since the late 1990s. Over the past twenty-five years, Canada has navigated a changing and increasingly complex landscape, as health determinants and outcomes have become increasingly impacted by forces and drivers beyond national borders. The COVID-19 pandemic exemplified this important lesson, demonstrating the interconnectedness of domestic and global health, and the critical importance of equity as a foundational principle to the protection and promotion of population health.

Based on this review, the Expert Panel concludes that Canada's active engagement in global health cooperation remains an imperative. However, in the context of polycrisis, these efforts must be based on careful strategic consideration. The Panel puts forth seven key findings and related recommendations to renew Canada's role: building equitable universal health systems centred on women and primary care, advancing One Health Security through sustainability and equity, renewing Canadian leadership in health promotion and protection with a focus on well-being, urgently tackling the health workforce crisis, setting a clear Canadian global health strategy,

bolstering research and innovation systems, and fortifying leadership capacity in global health. These findings serve Canada's needs as a diverse and globally connected country; build on Canada's distinct strengths and core values; and provide a solid foundation for much needed leadership at a time of uncertainty.

APPENDICES

APPENDIX A: EXPERT PANEL AND SECRETARIAT BIOGRAPHIES

CO-CHAIRS

Tim Evans
Dr. Tim Evans is the Vice-President, Research, Innovation and Impact at Concordia University since January 2025. Previously (2019-2024), he was the Director and Associate Dean of the School of Population and Global Health (SPGH) in the Faculty of Medicine and Associate Vice-Principal (Global Policy and Innovation) at McGill University and the Executive Director of the COVID-19 Immunity Task Force from April 2020 through to March 2023. His career includes roles as the Senior Director of the Health, Nutrition and Population at the World Bank Group (2013-19); the Dean of the James P. Grant School of Public Health at BRAC University (2010-13); Assistant Director General at the World Health Organization (2003-2010); and Director of the Health Equity Theme at the Rockefeller Foundation (1997-2003). Earlier in his career, Dr. Evans was an attending physician in Internal Medicine at Brigham and Women's Hospital in Boston and an Assistant Professor in International Health Economics at the Harvard School of Public Health. He received a BSocSci from the University of Ottawa, MD from McMaster University, and DPhil in Agricultural Economics from the University of Oxford. He is a Fellow of the National Academies of Medicine.

Kelley Lee
Dr. Kelley Lee is Professor and Canada Research Chair Tier 1 in Global Health Governance in the Faculty of Health Sciences, Simon Fraser University. Her research focuses on globalisation and collective action to mitigate risks to population health. She is the Co-Director of the Bridge Research Consortium to support Canada's Immuno-Engineering and Bio-manufacturing Hub; Principal Investigator for the Pandemics and Borders Project on the use of travel measures during public health emergencies; and a Commissioner for the NUS-Lancet PRIME (Pandemic Readiness, Implementation, Monitoring and Evaluation) Commission. She is also Adjunct Professor in the School of Psychology and Public Health, LaTrobe University and a British Columbia Centre for Disease Control Investigator. She was previously Professor of Global Health Policy at the London School of Hygiene and Tropical Medicine where she co-founded the WHO Collaborating Centre on Global Change and Health, and led the Guildford Archiving Project to secure public access to millions of internal tobacco industry documents. She is the author of 15 books including the Oxford Handbook on Global Health Politics (OUP, 2020). She holds a BA in English Literature and International Relations from the University of British Columbia, a Master of Public Administration from the University of Victoria, and Master of Arts and DPhil in International Political Economy from the University of Sussex. Dr. Lee is a Fellow through Distinction of the UK Faculty of Public Health, and Fellow of the Canadian Academy of Health Sciences and Royal Society of Canada.

EXPERT PANEL MEMBERS

Chantal Blouin
Dr. Chantal Blouin is a Senior Scientific Advisor at the Institut National de Santé Publique du Québec (INSPQ) working on health-promoting public policies and chronic diseases prevention. She is also Adjunct Professor at the Department of Political Science and Research Associate at the Graduate School of International Studies, Laval University. Since the 2000s, she has been conducting research on global health governance, in particular, on the impact of trade treaties on the capacity of health authorities to adopt health-promoting public policies. She has been a member of the list of leaders of Canadian Women in Global Health since 2018 and was a member of the Lancet-University of Oslo Commission on Global Governance for Health. Dr. Blouin's latest publication examines the impact of trade treaties on the adoption of alcohol policies in Canada.

Nadine Caron
Dr. Nadine Caron is a member of the Sagamok Anishnawbek First Nation. She is a Professor at the University of British Columbia (UBC) Northern Medical Program and Department of Surgery, Director and Founder of UBC's Centre for Excellence in Indigenous Health, the First Nations Health Authority Chair in Cancer and Wellness at

UBC and Special Advisor on Indigenous Health at UBC's Health and Faculty of Medicine. She merges her passion in Indigenous health, rural health services, equity in access to health services and the research that drives her clinical and public health training. She completed her medical school and surgical residency at UBC, an Endocrine surgery fellowship at the University of California, San Francisco, and an MPH from Harvard University. Dr.Caron was inducted into the Canadian Medical Hall of Fame in 2024.

Jocalyn Clark
Dr. Jocalyn Clark is an award-winning Canadian public health scientist and professional journal editor. Over a 20-year career, her editorial leadership has helped globalise and diversify top medical journals, reshaping the scientific literature to be more inclusive of global health content, women, and experts from low and middle income countries. She was appointed International Editor of The BMJ in 2022. Previously she was an Executive Editor of The Lancet (2016-2022); Executive Editor at icddr,b in Dhaka, Bangladesh; and Senior Editor at PLOS Medicine. She is an advisor to Global Health 50/50 and WomenLift Health, co-founder of Canadian Women in Global Health and WGH Canada, and has been a resident fellow of the Rockefeller Foundation Bellagio Center, the Brocher Foundation, and the Salzburg Global Seminar. Dr. Clark holds a PhD from the University of Toronto where she is an adjunct professor of medicine. She is also an honorary associate professor at the Institute for Global Health at University College London, an elected Fellow of the Royal College of Physicians of Edinburgh, and a Fellow of the Canadian Academy of Health Sciences.

Robert Greenhill
Robert Greenhill is Executive Chair of Global Canada, an NGO focused on enhancing Canada's positive global impact, and Senior Fellow at the Centre for International Governance Innovation (CIGI). Previous roles include Federal Deputy Minister and President of the Canadian International Development Agency (CIDA); President of the International Group of Bombardier Incorporated; Managing Director and Chief Business Officer of the World Economic Forum; Brookings Nonresident Senior Fellow; and Professor of Practice at McGill University. He holds a BA from the University of Alberta, MBA from INSEAD in France, and MA from the London School of Economics and Political Science.

Joanne Liu
Dr. Joanne Liu is a practising paediatric emergency physician and Professor of Clinical Medicine in the School of Population and Global Health, McGill University where she focuses on polycrisis and health emergencies. Prior to joining McGill University, she was the International President of Médecins Sans Frontières/Doctors Without Borders from 2013-2019. Dr. Liu is a former member of the Independent Panel on Pandemic Preparedness and Response, established by the World Health Organization (WHO), to provide an evidence-based path to ensure countries and global institutions effectively address future health threats. She is Chair of the Board of the Centre for Humanitarian Dialogue. Dr. Liu is also on the international advisory board of two Lancet Commissions: NUS-Lancet Pandemic Readiness, Implementation, Monitoring and Evaluation (PRIME) Commission and the Health, Conflict and Displacement CHH-Lancet Commission.

Francis Omaswa
Dr. Francis Omaswa is the founder and Executive Director of the African Centre for Global Health and Social Transformation in Uganda. He was Special Adviser to the WHO Director General and founding Executive Director of the Global Health Workforce Alliance from 2005–2008. Before joining GHWA, he was the Director General for Health Services in the Ministry of Health, Uganda where he was responsible for coordinating and implementing major reforms in the health sector, including quality assurance and decentralisation. Among his many accomplishments and leadership roles in the global health community, he was founding chair, and later Vice Chair, of the Global Stop TB Partnership; one of the architects of the Global Fund to Fight AIDS, TB and Malaria; chair of the portfolio and procurement committee of the Global Fund board; member of the Steering Committee of the High Level Forum on Health-related MDGs; and participant in the drafting the Paris Declaration on Aid Effectiveness. Dr. Omaswa is a graduate of Makerere Medical School, Kampala, Uganda, a Fellow of the Royal College of Surgeons of Edinburgh, founding President of the College of Surgeons of East, Central and Southern

Africa, Senior Associate at the Johns Hopkins Bloomberg School of Public Health, and an overseas member of the US National Academy of Medicine.

Jane Philpott
Dr. Jane Philpott is Dean of the Faculty of Health Sciences, Director of the School of Medicine, Queen's University, and CEO of the Southeastern Ontario Academic Medical Organization in Kingston, Ontario. She is a medical doctor, a Professor of Family Medicine, and former Member of Parliament. From 2015 to 2019 she served as Canada's Minister of Health, Minister of Indigenous Services, President of the Treasury Board and Minister of Digital Government. Prior to politics, Dr. Philpott spent the first decade of her medical career in Niger, West Africa and then worked as a family doctor with Markham Stouffville Hospital for 17 years, including six years as Chief of Family Medicine. Jane has recently published her first book called Health for All: A doctor's prescription for a healthier Canada (Signal, 2024).

K. Srinath Reddy
Dr. K. Srinath Reddy, a cardiologist and epidemiologist by training, is the founder and past President of the Public Health Foundation of India (2006–2022). He presently serves as an Honorary Distinguished Professor of PHFI. Under his leadership, PHFI established five Indian Institutes of Public Health to advance multi-disciplinary education and research for multi-sectoral application. He was earlier Head of Cardiology at the All Institute of Medical Sciences, New Delhi. Professor Reddy was the first Bernard Lown Visiting Professor of Global Cardiovascular Health at Harvard (2009–13) and is presently an Adjunct Professor at Harvard, Emory, Sydney, and Pennsylvania universities. He is the first Indian to be elected as an International Member of the US National Academy of Medicine. He was President of the World Heart Federation (2013–2014) and is co-chair of the Health Thematic Group of the UN Sustainable Development Solutions Network. He chaired the High-Level Expert Group on Universal Health Coverage constituted by the Planning Commission of India (2010–11). He is a member of the Global Panel on Agriculture and Food Systems for Nutrition. He has served on several expert panels of the World Health Organization, Indian, and international scientific agencies. He is an Advisor on Health to the state governments of Odisha and Andhra Pradesh, with a cabinet rank. Dr. Reddy has 581 scientific publications in peer reviewed Indian and international journals. He is the author of two books, Make Health in India — Reaching a Billion Plus (Orient Swan, 2019) and Pulse to Planet: Long Lifeline of Human Health (2023). His honours include a WHO Director General's Award and the Luther Terry Medal of the American Cancer Association for 'outstanding contributions to global tobacco control, the Queen Elizabeth Medal for Health Promotion, and the prestigious Padma Bhushan civilian award conferred by the President of India.

SECRETARIAT

Prativa Baral
Dr. Prativa Baral completed her PhD from Johns Hopkins Bloomberg School of Public Health in 2024, where she was a Pierre Elliott Trudeau Foundation Scholar and a Canadian Institutes for Health Research Doctoral Foreign Student Award recipient. She is currently an epidemiologist and a faculty associate at the Johns Hopkins Bloomberg School of Public Health. She has previously worked with OpenAI, the United Nations, Bill & Melinda Gates Foundation, the World Bank, and the Global Pandemic Monitoring Board and more, operating at the intersection of global health policy and advocacy, while investigating risks of health emergencies, early warning and surveillance systems, and health systems resilience, particularly during crises. She is the co-founder of Let Science Connect, a science communications training consultancy. She is also an alumna of Columbia University and McGill University.

Gatien de Broucker
Gatien de Broucker is a health economist and Ph.D. candidate at the Johns Hopkins Bloomberg School of Public Health. He investigates the factors that enable people to access healthcare, particularly the psychosocial and financial access to healthcare. He evaluates the economic burden of diseases, highlighting the patients'

and caregivers' experiences and identifying where financial risk protection is lacking. He is an alumnus of the University of Ottawa (2014) and Johns Hopkins University (2015).

Daniel Eisenkraft Klein
Dr. Daniel Eisenkraft Klein completed his PhD at the University of Toronto in 2024 where he was a Social Sciences and Humanities Research Council Doctoral Fellow. He is currently a postdoctoral research fellow at the Program on Regulation, Therapeutics and Law at Harvard Medical School and Brigham and Women's Hospital. His program of work primarily focuses on the political economy and regulation of medicines, with a particular emphasis on the role of interest groups in opioid and psychedelic policy settings. Daniel previously served as a Policy Analyst for Health Canada. He holds a Master of Science from the University of Toronto and a Bachelor of Arts from McGill University.

Leah Shipton
Leah Shipton is completing her PhD at the University of British Columbia. She holds a Master of Public Health from the University of Toronto, and Bachelor of Health Sciences from the University of Calgary. She studies global health governance and global environmental politics, and her work includes a co-edited book (with Peter Dauvergne), Global Environmental Politics in a Turbulent Era, and several journal publications on the topics of transnational advocacy networks, norm diffusion, corporate social responsibility, and strengthening the health workforce. Her current research program spans her dissertation project on public-private partnerships in global health, which includes case study research on the partnership that governed the global COVID-19 response, and a Canada-wide collaborative project examining provincial COVID-19 policy for testing and regulation of public space. Her research and teaching fuses her training and professional experience in global and public health governance, environmental politics, and disability studies.

APPENDIX B: ENGAGEMENT ACTIVITIES OF THE EXPERT PANEL

Organization / Event	Place	Date
Semi-structured interviews with Expert Panel members	Virtual	June 2023–October 2023
Semi-structured interviews with 18 global health experts	Virtual	June 2023–January 2024
CanWaCH Board Meeting	Virtual	September 12, 2023
Global Canada's Canada as a Consequential Country event	Montreal, QC	October 30, 2023
McGill University's Global Health Program International Council / Executive Council Joint Meeting	Montreal, QC	November 8, 2023
Open engagement session with Royal Society of Canada members	Waterloo, ON	November 18, 2023
Scientific Advisory Committee on Global Health (SAC-GH)	Ottawa, ON	November 21, 2023
Focus group discussion among global health students and early career scholars capped at 32 participants	Virtual	December 6, 2023
Office of International Affairs for the Health Portfolio, Public Health Agency of Canada	Virtual	February 2, 2024
Public Health Agency of Canada	Ottawa, ON	February 29, 2024
Canadian Mission and World Health Organization	Geneva, Switzerland	March 7, 2024
Open engagement session with Canadian Academy of Health Sciences	Virtual	March 19, 2024
Global Affairs Canada	Ottawa, ON/ Virtual	May 10, 2024
Canadian Institutes of Health Research Science Council	Virtual	June 20, 2024

APPENDIX C: COMPARISON OF GLOBAL HEALTH STRATEGIES OF SELECTED COUNTRIES

Country	Years	Government Leads	Rationale	Principles	Priorities
European Union[252]	2022–2030	Health and Food Safety Directorate-General	To provide a new, coherent, effective, and focused EU health policy that reflects … rapidly evolving circumstances"	• One Health • Health in all policies	• Better health and well-being • Advancing universal health coverage • Combatting health threats including pandemics
France[253]	2023–2027	Coordinated by Ministry for Europe and Foreign Affairs, Ministry of Health and Prevention, and Ministry of Higher Education and Research	To address global health challenges by calling on all French and international actors and by building on long-term multilateral and bilateral partnerships	• Health for All • One Health • Human rights • Gender equality • Scientific results and methods-driven approach • Joint design, ownership and sustainability • Coherence and complementarity	• Contribute to achieving the Sustainable Development Goals, in particular SDG3 • Reduce health inequalities, working on all social and environmental aspects • Strengthen One Health approach to better prevent and prepare for future global health emergencies • Address the health consequences of climate change and the environmental impact of health systems • Promote French values, expertise and research, innovation and partnerships
Germany[254]		Federal Ministry of Health	To ensure that Germany's engagement in the field of global health is effective and sustainable to make an important contribution to the health of all people worldwide by 2030	• Democracy • Partnership • Human dignity • Rule of law • Stability • Freedom • Diversity • Solidarity • Respect for human rights	• Promote good health, preventing diseases and developing adequate responses • Holistic approaches to the environment, climate change and public health • Strengthen health systems • Protect health — addressing cross-border health threats • Advance research and innovation for global health
Japan[255]	2022–2030	Promoted by the Cabinet Secretariat, MOFA, MHLW, MOF and other relevant ministries, agencies and organizations	To help stabilise global society as a whole and contribute to improving the safety of the country and its people	• Strengthening global health architecture • Cross-sectoral approach	• Contribute to developing resilient global health architecture for international health security and strengthening PPR (Prevention, Preparedness, and Response) for public health crises; • Accelerate the efforts to achieve more resilient, equitable, and sustainable universal health coverage (UHC).
Netherlands[256]	2023–2030	Jointly coordinated by Ministry of Foreign Affairs and Ministry of Health, Welfare and Sport	To contribute in a coordinated and targeted way to improving public health around the world, and thus also in the Netherlands	• One Health • Health in all Policies • policy coherence for development • Do no harm • Context-specific and demand-driven approach	• Strengthen the global health architecture and national health systems • Improve international pandemic preparedness and minimising cross-border health threats • Address the impact of climate change on public health and vice versa

Sweden[257]	2018–2030	*Jointly led by Ministry of Health and Social Affairs and Ministry for Foreign Affairs, with role in implementation by Public Health Agency of Sweden and Swedish National Board of Health and Welfare*	*To provide a clear picture of Sweden's overall action for global health in the context of the SDG 2030 Agenda*	• Universality • Integrated and indivisible SDGs • Health equity • Leaving no one behind	• Create conditions in society for good and equitable health • Build health systems that are effective, sustainable and resilient • Develop better preparedness and capacity to detect and manage outbreaks and other international threats to health
Switzerland[258]	2019–2024	*Jointly led by Department of Foreign Affairs, Department of Home Affairs (Office of Public Health)*	*To ensure global health issues are addressed coherently and effectively through cross-sectoral cooperation between actors concerned and formulation of common approach*	• Human rights • Health equity • Solidarity • Building bridges and facilitating dialogue • Comprehensive approach • Consultative and coherent	• Health security and humanitarian crisis • Access to medicine • Sustainable healthcare and digitalisation • Determinants of health • Governance in the global health regime • Addiction policy
Thailand[259]	2021–2027	*Ministry of Public Health, in collaboration with relevant agencies*	*To ensure that Thailand is health secure, safe from public health threats and moving steadily forward in socio-economic and sustainable development with a constructive role in global health cooperation*	• Health security • Leadership in global health • Balance and coherence between public health policies and trade and investment interests • Resilient and equitable health system • Strong and healthy health workforce	• Enhance health security • Promote Thailand's leading role, image and responsibilities for global health • Enhance coherence between health and public health policies at both national and international levels • Strengthen resilient and equitable health systems • Enhance the capacity, competence, morality, ethics, and quality of life of personnel and organization

United Kingdom[260]	*2023–2025*	*Jointly led by Department of Health and Social Care and Foreign, Commonwealth and Development Office plus Department for Environment, Food and Rural Affairs on One Health, and Departments for Business and Trade, and Science, Innovation and Technology*	*To improve global health outcomes ... [and] contribute to the UK's own ability to handle health threats and strengthen our life sciences sector*		• *Strengthen global health security through improved preparedness and response to future epidemics, pandemics, drug-resistant infections, and climate change* • *Reform global health architecture including through a strengthened WHO, driving more coherent governance and collaboration across the international system (including the global health initiatives, financing institutions and the Quadripartite Collaboration for One Health)* • *Strengthen country health systems and address key risk factors for ill health, working towards ending preventable deaths of mothers, babies and children in the world's poorest countries and enabling women and girls to exercise their rights* • *Advance UK leadership in science and technology, strengthening the global health research base of UK and partner countries, while supporting trade and investment*
United States[261]	*2015–2019*	*Department of Health and Human Services*	*To protect and promote the health and well-being of Americans through global action; to provide international leadership and technical expertise in science, policy, programs, and practice to improve global health and well-being; to work in concert with interagency partners to advance US interests in international diplomacy, development and security through global action*		• *Prevent and treat infectious diseases and other health threats* • *Enhance global capabilities to detect and report health events* • *Prepare for and respond to public health emergencies* • *Increase the safety and integrity of global manufacturing and supply chains* • *Strengthen international standards through multilateral and bilateral engagement* • *Address the changing global patterns of death, illness, and impairment related to ageing populations* • *Catalyse research globally to improve health and well-being* • *Strengthen global health and human services systems by identifying and exchanging best practices* • *Support the integration of global health and development efforts to improve well-being and raise living standards* • *Advance health diplomacy*

APPENDIX D: SUMMARY OF PREVIOUS REPORTS, ARTICLES AND STATEMENTS ON CANADA'S ROLE IN GLOBAL HEALTH

Title	Authors	Date	Summary
The Expert Panel on Canada's Strategic Role in Global Health	Singer P, et al.	2015	**Three major findings emerged from the Panel's analysis:** Complex global health issues will continue to increase in scope and complexity; increasing inequity in global health is occurring in the context of ongoing international financial and economic instability, which is resulting in significant resource constraints on current and future investments in global health; there is an exciting opportunity for global health partnerships between Canada and LMICs that encourage bilateral South-North learning across all sectors through meaningful and mutual engagement. **Three Principles for Canada's Role in Global Health:** 1. Equity — Inequities in terms of access to appropriate healthcare and of health outcomes need to be explicitly addressed. 2. Effectiveness — In a world of limitless challenges and finite resources, the investment of resources must lead to the greatest beneficial impact. 3. Engagement — The common problems found in many national contexts present an opportunity for shared or mutual learning and the development of common solutions. **Identified Strengths:** 1. Strong value placed on universal access to healthcare 2. Opportunity for individuals to show leadership in global health 3. Effective regulatory standards 4. Strong health and foreign policy 5. Track record of successful programs in global health security 6. History of vaccine innovation from discovery to delivery 7. Recognized leaders in health innovation and research 8. World-class educational system 9. Global leaders in indigenous health research 10. Global leaders in social determinants of health research 11. Vibrant philanthropic sector 12. Strong commitment to maternal, newborn, and child health **Identified Barriers:** The Panel also identified seven significant barriers limiting the impact of Canada's investments in global health: 1. There is no unifying vision for global health in Canada. 2. There is often poor coordination among Canadian global health actors. 3. Career paths in global health at institutions of higher learning are often unclear. 4. Social and economic policy decisions are often taken without sufficient attention to their potential health impacts. 5. There is often limited application of our understanding of social determinants of health to policies and actions. 6. There are significant resource constraints within government, private, and civil society sectors. 7. There are limited avenues to mobilise interest in global health. **The Panel articulated five roles that Canada could play as part of a multi-sectoral global health strategy (in no particular order):** 1. Indigenous and circumpolar health research; 2. Population and public health; 3. Community-oriented primary health care; 4. Smart partnerships in education and research; 5. Global health innovation

Canada's role in global health: Supporting equity and global citizenship as a middle power.	Nixon S, Lee K, Bhutta Z, Blanchard J, Haddad S, Hoffman S, Reading J, Tugwell P.	2018	Overall argument: Canada's history of nation building, combined with its status as a so-called middle power in international affairs, has been translated into an approach to global health that is focused on equity and global citizenship. Canada has often aspired to be a socially progressive force abroad, using alliance building and collective action to exert influence beyond that expected from a country with moderate financial and military resources. Conversely, when Canada has primarily used economic self-interest to define its global role, the country's perceived leadership in global health has diminished. [...] Current Prime Minister Justin Trudeau's Liberal federal government has signalled a return to progressive values, driven by appreciation for diversity, equality, and Canada's responsibility to be a good global citizen. However, poor coordination of efforts, limited funding, and the unaddressed legacy of Canada's colonisation of Indigenous peoples weaken the potential for Canadians to make meaningful contributions to improvement of global health equity. Amid increased nationalism and uncertainty towards multilateral commitments by some major powers in the world, the Canadian federal government has a clear opportunity to convert its commitments to equity and global citizenship into stronger leadership on the global stage. Such leadership will require the translation of aspirational messages about health equity and inclusion into concrete action at home and internationally.
Towards a Global Health Strategy for Canada, Discussion Paper	Aslanyan G, Di Ruggiero E, Kickbusch I, Kuruvila D, Michaelides O, Robertson N.	2021	This discussion paper was developed to inform a coherent global health strategy for Canada. It was based on a review of academic and grey literature, and interviews with 11 Canadian global health leaders from different institutions and geographic locations in 2021. There was an overall agreement that Canada was not living up to its potential in global health, that a clear vision for global health was required and that a deliberate process towards a global health strategy could help move Canada's global health agenda forward. The following was suggested as priorities for a Canadian global health strategy: a commitment to a resilient and sustainable post-COVID-19 recovery and systems reconfiguration; gender justice and equity in global health; leveraging the power of research to accelerate global health equity; a holistic approach to health; and commitment to decolonizing global health research, policy and practice.
Global Health 3.0: CIHR's Framework for Action on Global Health Research 2021–2026	CIHR	2021	This Framework was developed through an extensive consultation process co-led by CIHR and the International Development Research Centre (IDRC), and with the support of the Canadian Coalition for Global Health Research (CCGHR). The aim of these consultations was to better understand the challenges, opportunities, and Canada's existing strengths in global health research, in order to update our strategic priorities accordingly. Throughout the one-year consultation period, we engaged with key partners across the Government of Canada, numerous Canadian NGOs working in the global health space, and global health researchers from across the country. Altogether, we had the opportunity to hear from over 400 researchers and stakeholders, which we believe represents the most extensive consultation processes ever conducted by a national government to define its global health research priorities. Three goals: build Canadian research capacity to achieve big IMPACT, foster ALIGNMENT, and strengthen CAPACITY in global health, focused on three key areas: 1) prevention of non-communicable diseases; 2) sex, gender, and health; and 3) health emergencies.
Wanted in 2021: A coherent global health strategy for Canada	Di Ruggeiro E, Aslanyan G.	2021	Overall Argument: Too often Canada's foreign policy engagement in health has focused on advancing global security — minimizing security threats from pandemics or climate change that spill across borders — or through development policy focused on helping to eliminate major infectious diseases such as HIV, antimicrobial resistance, malaria and tuberculosis. Maternal, newborn and child health have also been a flagship for development priorities for Canada. But we have neglected, at our peril, to address the systemic inequities causing these global health threats. Three main goals: Gender Equality; Linking domestic and global policy; Showing global leadership.

Harnessing Canada's Potential for Global Health Leadership: Leveraging Strengths and Confronting Demons. In The Palgrave Handbook of Canada in International Affairs	Weldon I, Hoffman S	2021	**Overall Strengths:** A staunch participant in multilateral activities, a large funder of global health initiatives, a defender of a rule-based international order, and an active promoter of human rights, health equity, and global citizenship **Overall Challenges:** Canada recently shifted its funding for global health initiatives away from its multilateral partnerships, recent actions have violated international law, findings from the Truth and Reconciliation Commission reveal how Canada's Indigenous peoples still face many health disparities at home, and some Canadian businesses continue to operate in foreign markets with questionable human rights practices.
Canada, Partner in Global Health	WHO	2022	Canada is the fifth largest Member State donor to WHO (8th largest overall) in the 2020–2021 biennium with a total contribution equivalent to US $212 million. Over the last 10 years, Canada contributed over C$900 million to WHO in support of global health priorities, including polio eradication and the COVID-19 response. Through its Feminist International Assistance Policy, Canada is committed to advancing gender equality and the empowerment of women and girls, in all their diversity, partnering with WHO to advance these objectives. This includes equity-based approaches to health systems strengthening and primary healthcare, and by closing gaps in sexual and reproductive health and rights. Canada strongly champions these issues within WHO governing bodies. Canada provided a C$100 million contribution to WHO in support of the Health Systems & Response Connector and more than C$30 million to WHO to assist 10 target countries in delivering essential health services and strengthening primary healthcare in the context of COVID-19 response and recovery. Canada also provided C$15 million to support WHO's Strategic Preparedness and Response Plan for COVID-19, with a focus on the Africa Region. Canada is one of the Contingency Fund for Emergencies (CFE) initial contributors and a regular supporter (with C$9 million since 2015). Canada hosts more than 30 active WHO Collaborating Centres, providing expertise on a wide range of topics. The Government of Canada hosts Collaborating Centres on Non-Communicable Disease (NCD) Policy; Biosafety and Biosecurity; Environmental Health; and Standardization and Evaluation of Biologics.

REFERENCES

1. Aragon de Leon E, Shriwise A, Tomson G, et al. Beyond building back better: Imagining a future for global and planetary health. *Lancet Planetary Health* 2021; 5: e827–39. https://doi.org/10.1016/S2542-5196(21)00262-X

2. World Economic Forum. *Global Risks Report 2023*. Geneva, 2023. https://www3.weforum.org/docs/WEF_Global_Risks_Report_2023.pdf

3. Singer P. et al. *Canadians making a difference: The expert panel on Canada's strategic role in global health*. Canadian Academy of Health Sciences, Ottawa, 2011. https://cahs-acss.ca/wp-content/uploads/2015/07/CofCA_globalHealthReport_E_WEB_FINAL1.pdf

4. Nixon S, Lee K, Bhutta Z, Blanchard J, Haddad S, Hoffman S, Reading J, Tugwell P. Canada's role in global health: Supporting equity and global citizenship as a middle power. *Lancet* 2018; 391(10131): 1736-1748. https://www.thelancet.com/series/canada

5. Aslanyan G, Di Ruggiero E, Kickbusch I, Kuruvilac D, Michaelides O, Robertson N, Wodnika B. Call for a global health strategy for Canada. Centre for Global Health, Dalla Lana School of Public Health, University of Toronto, May 2023. https://www.dlsph.utoronto.ca/wp-content/uploads/2023/07/Towards-a-Global-Health-Strategy-May-2023.pdf

6. Canada COVID Series. *BMJ* 2023. https://www.bmj.com/canada-covid-series

7. In June 2020, the Canadian Institutes of Health Research (CIHR), Global Affairs Canada (GAC), the International Development Research Centre (IDRC) and the Office of International Affairs for the Health Portfolio (OIA), on behalf of Health Canada and the Public Health Agency of Canada, established a shared Scientific Advisory Committee on Global Health (SAC-GH).

8. Wiebers D, Feigin V, Winkler A. All life protection and our collective future. *Neuroepidemiology* 2022; 56(3): 147–150. http://doi:10.1159/000525021

9. Buergelt P, Mahypilama L, Paton D. The value of sophisticated Indigenous ways of being-knowing-doing towards transforming human resource development in ways that contribute to organizations thriving and addressing our existential crises. *Human Resource Development Review* 2022; 21(4): 391–409. https://doi.org/10.1177/15344843221134351

10. Clarkson L, Morrisette V, Regallet G. *Our responsibility to the seventh generation, Indigenous peoples and sustainable development*. International Institute for Sustainable Development, Winnipeg, 1992. https://www.iisd.org/system/files/publications/seventh_gen.pdf

11. Reddy S. *From Pulse to Planet*. New Delhi: Harper Collins, 2023.

12. Bambra C. Levelling up: Global examples of reducing health inequalities. *Scandinavian Journal of Public Health* 2022; 50(7): 908-913. http://doi:10.1177/14034948211022428

13. WHO. WHO releases the largest global collection of health inequality data. *News Release*, 20 April 2023. https://www.who.int/news/item/20-04-2023-who-releases-the-largest-global-collection-of-health-inequality-data

14. The discovery and early development of insulin. Repositories, University of Toronto. https://collections.library.utoronto.ca/repository/insulin

15. Nixon S, Lee K, Bhutta Z, Blanchard J, Haddad S, Hoffman S, Reading J, Tugwell P. Canada's role in global health: Supporting equity and global citizenship as a middle power. *Lancet* 2018; 391(10131): 1736–1748.

16. Brown T, Cueto M, Fee E. The World Health Organization and the transition from "international" to "global" public health. *American Journal of Public Health* 2006; 96(1): 62–72. https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2004.050831

17. Evans TG, Whitehead M, Diderichson F, Bhuiya A, Wirth M. eds. *Challenging Inequities in Health: From Ethics to Action*. Oxford: Oxford University Press, 2001. https://doi.org/10.1093/acprof:oso/9780195137408.001.0001

18. Lee K. Globalisation — A new agenda for health? in McKee M., Garner P. and Stott R. eds. *International Cooperation in Health*. Oxford: Oxford University Press, 2001, Chapter 2.

19. Swardson A. Canada unveils deficit-cutting budget. *Washington Post*, 28 February 1995. https://www.washingtonpost.com/archive/politics/1995/02/28/canada-unveils-deficit-cutting-budget/9a5058ea-b7da-40a7-be16-29673128d145/

20. Canadian International Development Agency (2005). *Canada's international policy statement: A role of pride and influence in the world*. Gatineau, Canada: Canadian International Development Agency.

21. Alcorn K. Canada to use compulsory licensing to produce HIV drugs for developing world. *Aidsmap*, 29 September 2003. https://www.aidsmap.com/news/sep-2003/canada-use-compulsory-licensing-produce-hiv-drugs-developing-world

22. Bernard EJ. Canada doubles WHO's 3x5 funds with 41m pledge. *Aidsmap.* 11 May 2004. https://www.aidsmap.com/news/may-2004/canada-doubles-whos-3x5-funds-ps41m-pledge

23. WHO. *Closing the gap in a generation: Health equity through action on the social determinants of health*, Final report of the Commission on the Social Determinants of Health. Geneva, 2008. https://www.who.int/publications/i/item/WHO-IER-CSDH-08.1

24. Cardwell R, Ghazalian P. The effects of untying international food assistance: The case of Canada. *American Journal of Agricultural Economics* 2020; 102(4): 1056-1078. https://doi.org/10.1002/ajae.12084

25. Brown S. The instrumentalization of foreign aid under the Harper government. *Studies in Political Economy* 2016; 97(1): 18–36. https://www.tandfonline.com/doi/full/10.1080/07078552.2016.1174461

26. Orbinski J. The G8 fails global health. *CMAJ* 2002; 167(5): 481–482.

27. Government of Canada. *Evaluation of the maternal, newborn, and child health initiative, 2010–11 to 2017–18, Summary Report*. Ottawa, 2020. https://www.international.gc.ca/gac-amc/publications/evaluation/2019/mnch-smne-summary-sommaire.aspx?lang=eng

28. World Bank. Development partners support the creation of global financing facility to advance women's and children's health. *Press Release*, Washington DC, 25 September, 2014. https://www.worldbank.org/en/news/press-release/2014/09/25/development-partners-support-creation-global-financing-facility-women-children-health

29. GFF Investors Group. *The Global Financing Facility: Country powered investments in support of Every Woman Every Child*. Washington DC, September 2016. https://www.globalfinancingfacility.org/sites/gff_new/files/gff_report2016/img/GFF_REPORT.pdf

30. Singer P. Replenishment of the Global Fund: Global solidarity needed. *Lancet* 2016; 388(10050): 1139-1141. https://doi.org/10.1016/S0140-6736(16)31601-4

31. DFAIT. *Report to Parliament on the Government of Canada's Official Development Assistance 2013-2014*. Ottawa: Department of Foreign Affairs, Trade and Development, 2014. https://publications.gc.ca/collections/collection_2015/maecd-dfatd/FR2-14-2014-eng.pdf

32. Asselstine R. *Canada Remains Global Leader in Polio Eradication*. Rotary Foundation of Canada, Abu Dhabi, 25 April 2013. https://trfcanada.org/stories/canada-remains-global-leader-in-polio-eradication

33. IDRC. Historical timeline: Sustained commitment, lasting impact. Ottawa, n.d. http://idrc-crdi.ca

34. Scaling Up Nutrition. Canada: Leader in the effort to scale up nutrition. *News Release*, 2 October 2012. https://scalingupnutrition.org/news/canada-leader-effort-scale-nutrition

35. UN Department of Economic and Social Affairs. Scaling Up Nutrition Movement (SUN). New York, 2019. https://sdgs.un.org/un-system-sdg-implementation/scaling-nutrition-movement-sun-34616

36. Institute of Health Metrics and Evaluation. *Financing Global Health*. Seattle: University of Washington, 2024. http://vizhub.healthdata.org/fgh/

37. Mackreal K. UN to ask Canada to significantly increase foreign aid spending. *Globe and Mail*, 26 May 2015. https://www.theglobeandmail.com/news/politics/un-to-ask-canada-to-significantly-increase-foreign-aid-spending/article24634498/

38. Patterson B. Harper Government and UN discuss private sector funding of the SDGs. Canadian Council, Analysis, Ottawa, 27 May 2015. https://canadians.org/analysis/harper-government-and-un-discuss-private-sector-funding-sdgs/

39. Global Affairs Canada. *Canada's Feminist International Assistance Policy*. Ottawa, 9 June 2017. https://www.canada.ca/en/global-affairs/news/2017/06/canada_s_feministinternationalpolicy.html

40. https://donortracker.org/donor_profiles/canada/globalhealth

41. IHME, 2024 https://vizhub.healthdata.org/fgh/

42. GAVI. Reaching zero-dose children and missed. Geneva: GAVI, the Vaccine Alliance, 11 July 2024. https://www.gavi.org/our-alliance/strategy/phase-5-2021-2025/equity-goal/zero-dose-children-missed-communities (Accessed October 1, 2024)

43. Coulson J, Sharma V, Wen H. Understanding the global dynamics of continuing unmet need for family planning and unintended pregnancy. *China Population Development Studies*. 2023; 7(1): 1–14. http://doi:10.1007/s42379-023-00130-7

44. WHO. Maternal mortality. *Fact Sheets*, Geneva, April 26, 2024. https://www.who.int/news-room/fact-sheets/detail/maternal-mortality (Accessed May 28, 2024)

45. OECD. Development Co-operation. Paris, n.d. https://www.oecd.org/dac/effectiveness/34428351.pdf

46. Travis P, Bennett S, Haines A, Pang T, Bhutta Z, Hyder A, Pielemier N, Mills A, Evans T. Overcoming health-systems constraints to achieve the Millennium Development Goals. *Lancet* 2004; 364(9437): 900–906. http://doi:10.1016/S0140-6736(04)16987-0

47. WHO Maximizing Positive Synergies Group. An assessment of the interactions between global health initiatives and country health systems. *Lancet* 2009; 373: 2137–2169. http://doi:10.1016/S0140-6736(09)60919-3

48. Witter S, Palmer N, James R et al. Reimagining the future of global health initiatives. Future of Global Health Initiatives, 2023. https://d2nhv1us8wflpq.cloudfront.net/prod/uploads/2023/09/FGHI_final_report_designed.pdf

49. Statement by the Prime Minister of Canada on the UN Commission on Information and Accountability for Women's and Children's Health September 2010. https://www.canada.ca/en/news/archive/2010/12/statement-prime-minister-canada-commission-information-accountability-women-children-health.html

50. Future of Global Health Initiatives. *The Lusaka Agenda: Conclusions of the Future of Global Health Initiatives Process*. 2023 https://futureofghis.org/final-outputs/lusaka-agenda/

51. OECD. *Development Co-operation Report 2023: Debating the Aid System*. Paris, February 2023. https://www.oecd-ilibrary.org/development/development-co-operation-report-2023_f6edc3c2-en

52. In 1969 the Commission used gross national product (GNP) as the key measure of a country's economic output. In 1993, GNP was replaced in the calculation of ODA targets by gross national income (GNI) which measures the total income received by the country from its residents and businesses regardless of whether they are located in the country or abroad.

53. Commission on International Development. *Partners in Development*. Report of the World Bank Commission on International Development, Pall Mall Press, 1969.

54. UN General Assembly, Resolution 2626 (XXV), International Development Strategy for the Second United Nations Development Decade (A/8124and Add.1), New York, 24 October 1970. https://documents.un.org/doc/resolution/gen/nr0/348/91/pdf/nr034891.pdf?token=u0gLDXinxD7FmR4eAH&fe=true#page=5

55. IDRC. *Historical timeline: Sustained commitment, lasting impact*. Ottawa, 2024. https://idrc-crdi.ca/en/about-idrc/historical-timeline-sustained-commitment-lasting-impact

56. Commission on Health Research for Development. *Health Research: Essential Link to Equity in Development*. Oxford: Oxford University Press, 1990. https://www.cohred.org/downloads/open_archive/ComReports_0.pdf

57. IDRC. *Research in action: Tobacco control*. Ottawa, 2010 https://idrc-crdi.ca/en/research-in-action/tobacco-control

58. IDRC. *At what cost? The economic impact of tobacco use on national health systems, societies and individuals; a summary of methods and findings*. Ottawa, 2003. http://hdl.handle.net/10625/31249

59. IDRC. *Smoke and mirrors: The Canadian tobacco war*. Ottawa, 1996. https://idl-bnc-idrc.dspacedirect.org/items/994fb32a-a334-417f-a27b-c872e46c5386

60. Nutrition International. Celebrating 30 years of impact. Ottawa, 2024. https://www.nutritionintl.org/30/

61. IDRC. *Net Gain: A new method for preventing malaria deaths*. Ottawa, 1996. https://idrc-crdi.ca/en/book/net-gain-new-method-preventing-malaria-deaths

62. IDRC. *The Tanzania Essential Health Interventions Project : A joint initiative of Tanzania's Ministry of Health and IDRC*. Ottawa, n.d. *https://idl-bnc-idrc.dspacedirect.org/server/api/core/bitstreams/568ddf59-d7fe-475c-b46f-2e302d1ed9f0/content#:~:text=TEHIP%2C%20by%20integrating%20research%20and,or%20programs%20imposed%20from%20above*

63. IDRC. *Historical Timeline: Sustained commitment, lasting impact*. Ottawa, 2024. https://idrc-crdi.ca/en/about-idrc/historical-timeline-sustained-commitment-lasting-impact

64. CIHR. *Annual Report 2000–2001*. Ottawa, 2001. https://publications.gc.ca/Collection/MR1-2001E.pdf

65. Global Alliance for Chronic Diseases. A global alliance of health research funders. https://www.gacd.org/

66. CIHR. *Global Health, Healthy Canadians in a Healthy World*. Ottawa, 2008. https://cihr-irsc.gc.ca/e/documents/ghb_healthy_canadians_e.pdf

67. IDRC. *Innovating for Maternal and Child Health in Africa: Strengthening Research Capacity*. https://idrc-crdi.ca/en/project/innovating-maternal-and-child-health-africa-strengthening-research-capacity

68. Nixon S, Lee K, Bhutta Z, Blanchard J, Haddad S, Hoffman S, Reading J, Tugwell P. Canada's role in global health: Supporting equity and global citizenship as a middle power. *Lancet* 2018; 391(10131): 1736-1748.

69. Adams O, Guimaraes L, Atherton F, Franzen S. *Development Innovation Fund - Health, Summative Evaluation Report*. Oxford Policy Management, October 2015. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.grandchallenges.ca/wp-content/uploads/2016/03/DIF-H_SummativeEvaluation_web_10-20-15.pdf

70. Silver K, Eleso A. It's time to increase Canada's global health spending on ready-to-scale innovations. *Policy Options*, 27 October 2022. https://policyoptions.irpp.org/magazines/october-2022/foreign-investment-health-innovation/

71. CIHR. Global health research: Overview. Ottawa, February 2022. https://cihr-irsc.gc.ca/e/31563.html

72. Strong M, Hoffman S. Eligibility of global health research at CIHR. *Email Bulletin*, CIHR Institute of Population and Public Health, 26 September 2019.

73. The Healthy Life Trajectories Initiative Canada. Study following Canadian families for up to 8 years to examine long-term child health. https://www.helticanada.com/

74. Trudeau J. Canada and international partners launch the Coronavirus Global Response. 4 May 2020. https://www.pm.gc.ca/en/news/news-releases/2020/05/04/canada-and-international-partners-launch-coronavirus-global-response

75. Naylor D, et al. *Learning from SARS: Renewal of Public Health in Canada*. Report of the National Advisory Committee on SARS and Public Health. Ottawa, October 2003. https://www.canada.ca/en/public-health/services/reports-publications/learning-sars-renewal-public-health-canada.html

76. Robertson G. 'We are not prepared:' The flaws inside Public Health that hurt Canada's readiness for COVID-19. *Global and Mail*, 26 December 2020. https://www.theglobeandmail.com/canada/article-we-are-not-prepared-the-flaws-inside-public-health-that-hurt-canadas/

77. Lee K, Piper J. Reviving the Role of the Global Public Health Intelligence Network (GPHIN) in global epidemic intelligence." In West L, Juneau T, Amarasingam A, eds. *Stress Tested, The COVID-19 Pandemic and Canadian National Security*. Calgary: University of Calgary Press, 2021.

78. Kendall P, Massé R. *Preparing PHAC for the future*. Internal report prepared for Public Health Agency of Canada, Ottawa, 8 October 2019.

79. Office of the Auditor General of Canada. *Report 8 — Pandemic Preparedness, Surveillance, and Border Control Measures*. Ottawa, 2021. https://www.oag-bvg.gc.ca/internet/English/parl_oag_202103_03_e_43785.html#hd2c

80. UK. *What is the UK COVID-19 Inquiry?* London, 2024. https://covid19.public-inquiry.uk/

81. Australian Government. *Commonwealth Government COVID-19 Response Inquiry*. Canberra: Department of the Prime Minister and Cabinet, 2024. https://www.pmc.gov.au/domestic-policy/commonwealth-government-covid-19-response-inquiry#:~:text=The%20purpose%20of%20the%20inquiry,to%20the%20COVID%2D19%20pandemic

82. New Zealand. *Royal Commission of Inquiry into COVID-19 Lessons Learned*. Auckland, 2024. https://haveyoursay.covid19lessons.royalcommission.nz/

83. Razak F, Shin S, Naylor D, Slutsky A. Canada's response to the initial 2 years of the COVID-19 pandemic: A comparison with peer countries. *CMAJ* 2022; 194(25): E870--E877. https://www.cmaj.ca/content/194/25/e870

84. Bishai D. Final score of who handled COVID-19 best. 20 April 2024. https://d1can.blogspot.com/2024/04/final-score-on-who-handled-covid-19-best.html

85. Herati H, Burns K, Nascimento M, et al. Canadians' trust in government in a time of crisis: Does it matter? *PLoS ONE* 2023; 18(9): e0290664. https://doi.org/10.1371/journal.pone.0290664

86. Ling J. *Far and Widening: The Rise of Polarization in Canada*. Public Policy Forum, August 2023. https://ppforum.ca/publications/polarization-democracy-Canada

87. Government of Canada. *COVID-19 vaccination coverage by ethnicity: Insight from the Canadian Community Health Survey (CCHS): June 2021 to February 2022*. https://www.canada.ca/en/public-health/services/immunization-vaccines/vaccination-coverage/covid-19-vaccination-coverage-ethnicity-insight-canadian-community-health-survey.html

88. WHO. *COVID-19 IHR Emergency Committee*. n.d. https://www.who.int/groups/covid-19-ihr-emergency-committee

89. GLOPID-R. Area of Action: COVID-19. London, 2024. https://www.glopid-r.org/our-work/covid-19/

90. https://www.who.int/initiatives/act-accelerator/about

91. UNICEF. UNICEF welcomes Canada's contribution of US$188 million to support COVID-19 response and health systems strengthening. *Media Release*, 13 January 2023. https://www.unicef.org/press-releases/unicef-welcomes-canadas-contribution-us188-million-support-covid-19-response-and

92. Canada. Canada's aid and development assistance in response to COVID 19. 22 March 2024. https://www.international.gc.ca/world-monde/issues_development-enjeux_developpement/global_health-sante_mondiale/response_covid-19_reponse.aspx?lang=eng

93. Houston et al. Canada's role in COVID-19 global vaccine equity failures. *BMJ* 2023;382:e075149 https://www.bmj.com/content/382/bmj-2023-075149

94. Office of the Auditor General of Canada. *Report 9. COVID-19 pandemic.* 2022. https://www.oag-bvg.gc.ca/internet/English/parl_oag_202212_09_e_44175.html

95. Lee K. Canada's pandemic response and future preparedness. *BMJ* 2023; 382: 1622. https://www.bmj.com/content/382/bmj.p1622.long

96. Brisbois B, Plamondon K, Walugembe D, et al. Pandemics, intellectual property and 'our economy': A worldview analysis of Canada's role in compromising global access to COVID-19 vaccines. *Global Public Health* 2024; 19(1): 2335360. https://doi.org/10.1080/17441692.2024.2335360

97. Lexchin J. Canada and the pharmaceutical industry in the time of COVID-19. *International Journal of Social Determinants of Health and Health Services* 2023; 53(4): 508–517. https://doi.org/10.1177/27551938231195434

98. Houston A, Liu J, Habibi R, Murthy S, Pai M. Canada's role in COVID-19 global vaccine equity failures. *BMJ* 2023; 382: e075149. https://www.bmj.com/content/382/bmj-2023-075149

99. Government of Canada. COVID-19: Canada's Global Initiative for Vaccine Equity. 22 March 2024. https://www.international.gc.ca/world-monde/issues_development-enjeux_developpement/global_health-sante_mondiale/equite_vaccinale_covid-19_vaccine_equity.aspx?lang=eng

100. Baig F. Are Canada's new COVID travel rules grounded in racism? *National Observer*, 8 December 2021. https://www.nationalobserver.com/2021/12/08/news/canadas-covid-travel-rules-racism

101. Mugyenyi B. Canada's Africa-only travel ban reveals the racism shaping Canada's international policy. *NB Media Co-op*, 20 December 2021. https://nbmediacoop.org/2021/12/20/canadas-africa-only-travel-ban-reveals-the-racism-shaping-canadas-international-policy/

102. Bianchini E. 'Absurd, nonsensical, dangerous': Canada blasted for Omicron COVID-19 variant travel ban against African countries. *Yahoo News*, 7 December 2021. https://ca.news.yahoo.com/covid19-omicron-variant-travel-rules-africa-reaction-174321394.html

103. Open Consultants. *External Evaluation of the Access to COVID-19 Tools Accelerator (ACT-A)*. Berlin, 10 October 2022. https://www.who.int/publications/m/item/external-evaluation-of-the-access-to-covid-19-tools-accelerator-(act-a)

104. Glassman A, Madan Keller J, Smitham E. The Future of Global Health Spending Amidst Multiple Crises. *Center for Global Development*, January 2023. https://www.cgdev.org/publication/future-global-health-spending-amidst-multiple-crises

105. Innovation, Science, and Economic Development Canada. Federal Government launches Health Emergency Readiness Canada to strengthen preparedness for future health emergencies. *News Release.* 24 September 2024. https://www.canada.ca/en/innovation-science-economic-development/news/2024/09/federal-government-launches-health-emergency-readiness-canada-to-strengthen-preparedness-for-future-health-emergencies.html

106. Global Affairs Canada. Canada announces vaccines in support of the mpox outbreak in Africa. *News Release.* 13 September 2024. https://www.canada.ca/en/global-affairs/news/2024/09/canada-announces-vaccines-in-support-of-the-mpox-outbreak-in-africa.html

107. GAVI. Government of Canada and Gavi deliver 200,000 doses of donated mpox vaccine to DRC. *Media Release*, 11 February 2025. https://www.gavi.org/news/media-room/government-canada-and-gavi-deliver-200000-doses-donated-mpox-vaccine-drc

108. UNICEF. *Levels and Trends in Child Mortality report 2023*. New York, 2023. https://reliefweb.int/report/world/levels-trends-child-mortality-report-2023?gad_source=1&gclid=Cj0KCQjw-5y1BhC-ARIsAAM_oKkRZ_4zrvefsoaTHD3ZEyqe0MrRz_DoJ2s6mCNCc0Hh1S7vNF_gNncaArr1EALw_wcB

109. GBD 2021 Fertility and Forecasting Collaborators. Global fertility in 204 countries and territories, 1950–2021, with forecasts to 2100: A comprehensive demographic analysis for the Global Burden of Disease Study 2021. *Lancet* 2024; 403 (10440): 2057–2099.

110. WHO. *Tracking Universal Health Coverage: 2023 Global monitoring report*. Geneva, 18 September 2023. https://www.who.int/publications/i/item/9789240080379

111. Indicator 3.15.1 - Proportion of persons with unmet health care needs - Canada Indicators For The Sustainable Development Goals

112. Quote from Andre Picard, Dalton Camp Lecture 2023 as found in Healthcare's Next Evolution: Rethinking Social Factors in Financing

113. WHO. *The World Health Report 2008: Primary health care now more than ever*. Geneva, 2008. https://iris.who.int/handle/10665/43949

114. Rasanathan K, Evans TG. Primary health care, the Declaration of Astana and COVID-19. *Bulletin of the World Health Organization* 2020; 98: 801–808.

115. Binagwaho A, Adhanom Ghebreyesus T. Primary healthcare is cornerstone of universal health coverage. *BMJ*. 2019;365:l2391. http://doi:10.1136/bmj.l2391

116. Kasper T, Yamey G, Dwyer S, et al. Rethinking how development assistance for health can catalyse progress on primary health care. *Lancet*. 2023;402(10418): 2253–2264. http://doi:10.1016/S0140-6736(23)01813-5

117. The Lancet Global Health Commission on financing primary health care: Putting people at the centre. *Lancet Global Health* 2022. https://www.thelancet.com/commissions/financing-primary-health-care

118. Hodgins S, Kok M, Musoke D, et al. Community health workers at the dawn of a new era: 1. Introduction: Tensions confronting large-scale CHW programmes. *Health Research and Policy Systems* 2021;19(Supplement 3): 109. http://doi:10.1186/s12961-021-00752-8

119. Crisp N. Nursing Now — Why nurses and midwives will be even more important and influential in the future. *International Nursing Review* 2018; 65(2): 145–147.

120. Tomblin-Murphy G, Sampalli T et al. Investing in Canada's nursing workforce post-pandemic: A call to action. *Royal Society of Canada*, Ottawa, 2022. https://rsc-src.ca/sites/default/files/Nursing%20PB_EN.pdf

121. Joint Learning Network for Universal Health Coverage. https://jointlearningnetwork.org/

122. Africa Frontline First. A partnership from Community Health Impact, Financing Alliance for Health, and Last Mile Health to Increase financing for community health to save and improve lives in Africa. https://www.africafrontlinefirst.org/

123. Department of Finance Canada. Government highlights next step to universal access to free contraceptives. *News Release*, March 30 2024. https://www.canada.ca/en/department-finance/news/2024/03/government-highlights-next-step-to-universal-access-to-free-contraceptives.html

124. IHME. *The Lancet*: 160 million women worldwide have unmet contraception needs: New study reveals large differences in types of contraceptives used across regions and age groups. *News Release*. 21 July 2022. https://www.healthdata.org/news-events/newsroom/news-releases/lancet-160-million-women-worldwide-have-unmet-contraception

125. KOF Globalisation Index ranks Canada as 18th (83.62) among 190 countries (average 61.63) in 2023. See ETH Zurich. *KOF Globalisation Index*. KOF Swiss Economic Institute, Zurich, 2024. https://kof.ethz.ch/en/forecasts-and-indicators/indicators/kof-globalisation-index.html

126. Global Preparedness Monitoring Board. *The changing face of pandemic risk: 2024 report*. Geneva, 14 October 2024. https://www.gpmb.org/reports/m/item/the-changing-face-of-pandemic-risk-2024-report

127. Ezoe S, Hashimoto J et al. Health outcomes of the G7 Hiroshima Summit: Breaking the cycle of panic and neglect and achieving UHC. *Lancet* 2023; 401 (10394): 2091-2093.

128. Bambra C, Lynch J, Smith K. *The Unequal Pandemic: COVID-19 and Health Inequalities*. Bristol: Policy Press, 2021.

129. Tiwana H, Smith J, Kirby M, Purewal S. Equity lens on Canada's COVID-19 response: Review of the literature. *International Journal of Health Policy and Management* 2024; 13(1): 1–9. https://www.ijhpm.com/article_4586.html

130. Strong M. Closing statement to the Rio Summit. Rio de Janiero, 14 June 1992. https://www.mauricestrong.net/index.php?option=com_content&view=article&id=166&Itemid=87

131. Rae I. Saving the ozone layer: Why the Montreal Protocol worked. *The Conversation*, 9 September 2012. https://theconversation.com/saving-the-ozone-layer-why-the-montreal-protocol-worked-9249

132. Usher P. World Conference on the Changing Atmosphere: Implications for Global Security, The Conference Statement. *Environment: Science and Policy for Sustainable Development* 1989; 31(1): 25-27. https://doi.org/10.1080/00139157.1989.9929931

133. The Rio Earth Summit: Summary of the United Nations Conference on Environment and Development (BP-317E). November 1992. https://publications.gc.ca/Collection-R/LoPBdP/BP/bp317-e.htm

134. Environment and Climate Change Canada. *Persistent organic pollutants: Stockholm Convention*. Ottawa, 2020. https://www.canada.ca/en/environment-climate-change/corporate/international-affairs/partnerships-organizations/persistent-organic-pollutants-stockholm-convention.html

135. Global Health Security Initiative. *About*. 2023. https://ghsi.ca/#:~:text=Launched%20in%202001%2C%20the%20Global,as%20well%20as%20pandemic%20influenza

136. McCoy D, Roberts S, Daoudi S, et al. Global health security and the health-security nexus: Principles, politics and praxis. *BMJ Global Health* 2023; 8: e013067. http://doi:10.1136/bmjgh-2023-013067

137. UNDP. *2022 Special Report on Human Security*. New York, 2022. https://hdr.undp.org/content/2022-special-report-human-security

138. Whitmee S, Haines A, Beyrer C, et al. Safeguarding human health in the Anthropocene epoch: Report of The Rockefeller Foundation–Lancet Commission on planetary health. *Lancet 2015; 386 (10007): 1973–2028*. https://doi.org/10.1016/S0140-6736(15)60901-1

139. Tu'itahi S, Watson H, Egan R et al. Waiora: The importance of Indigenous worldviews and spirituality to inspire and inform planetary health promotion in the Anthropocene. *Global Health Promotion* 2021; 28(4): 73–82. http://doi:10.1177/17579759211062261

140. Editorial: The Pandemic Treaty: Shameful and unjust. *Lancet* 2024; 403(10429): 781. https://doi.org/10.1016/S0140-6736(24)00410-0

141. Legido-Quigley H, Clark H, Sania Nishtar S, Horton R, et al. Reimagining health security and preventing future pandemics: The NUS–*Lancet* Pandemic Readiness, Implementation, Monitoring, and Evaluation Commission. *Lancet* 2023; 401(10393): 2021–2023. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(23)00960-1/fulltext

142. Public Health Agency of Canada. *From risk to resilience: An equity approach to COVID-19. The Chief Public Health Officer of Canada's Report on the State of Public Health in Canada 2020*. Ottawa, October 2020. https://www.canada.ca/en/public-health/corporate/publications/chief-public-health-officer-reports-state-public-health-canada/from-risk-resilience-equity-approach-covid-19.html#message

143. The Lancet-PPATS Commission on Prevention of Viral Spillover, Mettenleiter T, Winkler A. Draft of WHO Pandemic Agreement plays down primary prevention. *Lancet* 2024; 403(10426): 525-526. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(24)00066-7/fulltext

144. Canada Biomedical Research Fund and Biosciences Research Infrastructure Fund. Ottawa, 2 July 2024. https://www.sshrc-crsh.gc.ca/funding-financement/cbrf-frbc/index-eng.aspx

145. Innovation, Science and Economic Development Canada. Health Emergency Readiness Canada. Ottawa, 25 September 2024. https://ised-isde.canada.ca/site/biomanufacturing/en/health-emergency-readiness-canada

146. Feldbaum H, Lee K, Michaud J. Global health and foreign policy. *Epidemiologic Reviews* 2010; 32(1): 82–92. https://doi.org/10.1093/epirev/mxq006

147. A One Health approach to health security is also supported by the Expert Panel for the Review of the Federal Approach to Pandemic Science Advice and Research Coordination. *The time to act is now: Report of the expert panel*, Ottawa, October 2024. https://www.canada.ca/en/health-canada/corporate/about-health-canada/public-engagement/external-advisory-bodies/review-federal-approach-pandemic-science-advice-research-coordination/time-to-act.html#s5

148. Markotter W, Mettenleiter T, Adisasmito W, et al. *Prevention of zoonotic spillover, from relying on response to reducing the risk at source*. Geneva: One Health High-Level Expert Panel. White Paper, 2023. https://www.who.int/publications/m/item/prevention-of-zoonotic-spillover

149. Global Preparedness Monitoring Board. *GPMB monitoring framework for preparedness*. Geneva, May 2023. https://www.gpmb.org/monitoring-framework

150. Alamo T, Reina D, Millán Gata P, Preciado VM, Giordano G. Data-driven methods for present and future pandemics: Monitoring, modelling and managing. *Annual Reviews in Control* 2021; 52: 448-464. http://doi:10.1016/j.arcontrol.2021.05.003

151. Leuprecht C, Kasurak P. The Canadian armed forces and humanitarian assistance and disaster relief: Defining a role. Centre for International Governance Innovation, 24 August 2020. https://www.cigionline.org/articles/canadian-armed-forces-and-humanitarian-assistance-and-disaster-relief-defining-role/

152. Public Safety Canada. *Supporting a humanitarian workforce to respond to COVID-19 and other large-scale emergencies*. Ottawa, 12 July 2024. https://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/rspndng-mrgnc-vnts/hwf-tc-en.aspx

153. See also Finding #4 which identifies the need for an explicit Canadian-led initiative on the health workforce.

154. Blanchet R, Willows N, Johnson S; Okanagan Nation Salmon Reintroduction Initiatives, Batal M (2022). Enhancing cultural food security among the Syilx Okanagan adults with the reintroduction of Okanagan sockeye salmon. *Applied Physiology, Nutrition and Metabolism* 2022; 47(2): 124–133. https://pubmed.ncbi.nlm.nih.gov/34807751/

155. Blanchet R, Batal M, Johnson-Down L, Johnson S, Okanagan Nation Reintroduction Initiatives, Willows N. An Indigenous food sovereignty initiative is positively associated with well-being and cultural connectedness in a survey of Syilx Okanagan adults in British Columbia, Canada. *BMC Public Health* 2021; 21: 1405. https://doi.org/10.1186/s12889-021-11229-2

156. Deaconu A, Berti PR, Cole DC, Mercille G, Batal M. Market Foods, Own production and social economy: How food acquisition sources influence nutrient intake among Ecuadorian farmers and the role of agroecology in supporting healthy diets. *Sustainability* 2021; 13: 4410. https://doi.org/10.3390/su13084410

157. Deaconu A, Berti PR, Cole DC, Mercille G, Batal M. Agroecology and nutritional health: A comparison of agroecological farmers and their neighbours in the Ecuadorian highlands. *Food Policy* 2021; 101: 102034. https://doi.org/10.1016/j.foodpol.2021.102034

158. Ostrom, E. Beyond markets and states: Polycentric governance of complex economic systems. *American Economic Review* 2010; *100*(3), 641–672. http://www.jstor.org/stable/27871226

159. WHO. Avian Influenza Weekly Update. Geneva, 12 April 2024. https://cdn.who.int/media/docs/default-source/wpro—-documents/emergency/surveillance/avian-influenza/ai_20240412.pdf

160. Editorial. What is the pandemic potential of avian influenza A(H5N1)? *Lancet Infectious Diseases* 2024; 24(5): 437. https://doi.org/10.1016/S1473-3099(24)00238-X

161. Lalonde M. *A new perspective on the health of Canadians, A working document*. Ministry of National Health and Welfare, Ottawa, 1974. https://publications.gc.ca/collections/collection_2009/sc-hc/H31-1374E.pdf

162. WHO. Noncommunicable diseases. *Fact Sheet*, Geneva, 16 September 2023. https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases#:~:text=Noncommunicable%20diseases%20(NCDs)%20kill%2041,%2D%20and%20middle%2Dincome%20countries.

163. WHO. *Global action plan for the prevention and control of noncommunicable diseases 2013–2020*. Geneva, 14 November 2013. https://www.who.int/publications/i/item/9789241506236

164. Lee K, Buse K, Fustukian S, eds. *Health Policy in a Globalising World*. Cambridge: Cambridge University Press, 2002.

165. Maani N, Petticrew M, Galea S. eds. *The Commercial Determinants of Health*. Oxford: Oxford University Press, 2023.

166. Gilmore A, Fabbri A, Baum F, et al. Defining and conceptualising the commercial determinants of health. *Lancet* 2023; 401(10383): 1194–1213. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(23)00013-2/abstract

167. Health Canada. Opioid and Stimulant-related Harms in Canada. Ottawa, 13 September 2024. https://health-infobase.canada.ca/substance-related-harms/opioids-stimulants/ (Accessed 4 October 2024)

168. First Nations Health Authority. *First Nations and the Toxic Drug Poisoning Crisis in BC, January-December 2023*. FNHA Harm Reduction, 2024. https://www.fnha.ca/Documents/FNHA-First-Nations-and-the-Toxic-Drug-Poisoning-Crisis-in-BC-Jan-Dec-2023.pdf

169. WHO. Opioid Overdose. *Fact Sheet*, Geneva, 29 August 2023. https://www.who.int/news-room/fact-sheets/detail/opioid-overdose

170. Health Infobase.*Opioid- and stimulant-related harms—Canada.ca*. Ottawa, March 2023. https://health-infobase.canada.ca/substance-related-harms/opioids-stimulants/

171. Lisa B, Jessica H. Evidence synthesis — The opioid crisis in Canada: A national perspective. *Health Promotion and Chronic Disease Prevention in Canada : Research, Policy and Practice* 2018; *38*(6): 224–233.

172. Keefe P. *Empire of Pain: The Secret History of the Sackler Dynasty*. Bond Street Books, 2021.

173. Fischer B, Pang M, Tyndall M. The opioid death crisis in Canada: Crucial lessons for public health. *Lancet Public Health* 2019; 4(2): e81–e82. https://doi.org/10.1016/S2468-2667(18)30232-9

174. Opioid crisis: Addiction, overprescription, and insufficient primary prevention. *The Lancet Regional Health — Americas*, *23*. https://doi.org/10.1016/j.lana.2023.100557

175. UNODC. UNODC World Drug Report 2023 warns of converging crises as illicit drug markets continue to expand. *Press Release*, 26 June 2023. https://www.unodc.org/unodc/press/releases/2023/June/unodc-world-drug-report-2023-warns-of-converging-crises-as-illicit-drug-markets-continue-to-expand.html

176. Swinburn B, Kraak V, Allender S, et al. The global syndemic of obesity, undernutrition, and climate change: The Lancet commission report. *Lancet* 2019; 19; 393: 791–846. http://dx.doi.org/10.1016/S0140-6736(18)32822-8

177. Lalonde M. *A New Perspective on the Health of Canadians, A working document*. Ministry of National Health and Welfare, Ottawa, 1974. https://publications.gc.ca/collections/collection_2009/sc-hc/H31-1374E.pdf

178. Federal, provincial, and territorial Special Advisory Committee on the Epidemic of Opioid Overdoses. *Opioid- and Stimulant-related Harms in Canada*. Ottawa: Public Health Agency of Canada, March 2024. https://health-infobase.canada.ca/substance-related-harms/opioids-stimulants/

179. Department of Finance Canada. *Measuring What Matters: Towards a Quality of Life Strategy for Canada*. Ottawa, 2021. https://www.canada.ca/en/department-finance/services/publications/measuring-what-matters-toward-quality-life-strategy-canada.html

180. Chrysopoulou A. The Vision of a Well-Being Economy. *Stanford Social Innovation Review*, December 16, 2020. https://ssir.org/articles/entry/the_vision_of_a_well_being_economy

181. Helliwell JF, Layard R, Sachs JD et al. World Happiness Report 2022. 2022. New York: Sustainable Development Solutions Network powered by the Gallup World Poll data. https://www.wellbeingintlstudiesrepository.org/hw_happiness/2/

182. World Wellbeing Movement. https://worldwellbeingmovement.org/

183. Wellbeing Economy Alliance. What is a wellbeing economy? n.d., https://weall.org/what-is-wellbeing-economy (accessed 21 August 2024)

184. G7 Italy, The Pulia Summit. Change the mindset. 2024, pp. 62–63. https://edition.pagesuite-professional.co.uk/html5/reader/production/default.aspx?pubname=&pubid=cff88389-941c-40a9-bf3d-76699425a314

185. Livingston G, Huntley J, Liu KY et al. Dementia prevention, intervention, and care: 2024 report of the Lancet Standing Commission. *Lancet* 2024; 404 (10452): 572–638. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(24)01296-0/abstract

186. Liu J, Eggleston K. The Association between health workforce and health outcomes: A cross-country econometric study. *Social Indicators Research* 2022; 163(2): 609–632. https://doi.org/10.1007/s11205-022-02910-z

187. Narasimhan V, Brown H, Pablos-Mendez A, Adams O, Dussault G, Elzinga G, Nordstrom A, Habte D, Jacobs M, Solimano G, Sewankambo N, Wibulpolprasert S, Evans TG, Chen L. Responding to the global human resources crisis. *Lancet* 2004; 363(9419): 1469–1472.

188. Chen L, Evans TG, Anand S, Boufford JI, Brown H, Chowdhury M, Cueto M, Dare L, Dussault G, Elzinga G, Fee E, Habte D, Hanvoravongchai P, Jacobs M, Kurowski C, Michael S, Pablos-Mendez A, Sewankambo N, Solimano G, Stilwell B, de Waal A, Wibulpolprasert S. Human resources for health: overcoming the crisis. *Lancet* 2004; 364(9449): 1984–1990.

189. Evans TG, ed. *Working together for health: The World Health Report 2006*. Geneva: World Health Organization, 2006.

190. Frenk, J, et al. Health professionals for a new century: Transforming education to strengthen health systems in an interdependent world. *Lancet* 2010; 376: 1923–1958.

191. WHO. *Global strategy on human resources for health: Workforce 2030*. Geneva, 2016. https://www.who.int/publications/i/item/9789241511131

192. Negero MG, Sibbritt D, Dawson A. How can human resources for health interventions contribute to sexual, reproductive, maternal, and newborn healthcare quality across the continuum in low- and lower-middle-income countries? A systematic review. *Human Resources for Health* 2021; 19(1): 54. http://doi:10.1186/s12960-021-00601-3

193. GBD 2021 Fertility and Forecasting Collaborators. Global fertility in 204 countries and territories, 1950–2021, with forecasts to 2100: A comprehensive demographic analysis for the Global Burden of Disease Study 2021. *Lancet* 2024; 403(10440): P2057–2099. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(24)00550-6/fulltext

194. Szabo S, Nove A, Matthews Z, Bajracharya A, Dhillon I, Singh D, Saares A, Campbell J. Health workforce demography: A framework to improve understanding of the health workforce and support achievement of the Sustainable Development Goals. *Human Resources for Healt*h 2020; 18(1): 7. http://doi:10.1186/s12960-020-0445-6

195. UN High Level Commission on Health Employment and Economic Growth. Working for health and growth: Investing in the health workforce. WHO. https://www.who.int/publications/i/item/9789241511308

196. WHO and ILO. *The gender pay gap in the health and care sector: A global analysis in the time of COVID-19*. Geneva, 2022.

197. WHO. *Fair share for health and care: Gender and the undervaluation of health and care work*, 68th Commission on the Status of Women. Geneva, 2024.

198. McIsaac M, Knaul FM. How economic implications of gender gaps in employment affect global health equity. *Bulletin of the World Health Organization* 2024; 102(2): 87–87A.

199. Micah A, Solorio J, Stutzma H, et al. Development assistance for human resources for health, 1990–2020. *Human Resources for Health* 2022: 20: Article 51. https://doi.org/10.1186/s12960-022-00744-x

200. Canada. Immigration matters in health care. Ottawa, 13 December 2022. https://www.canada.ca/en/immigration-refugees-citizenship/campaigns/immigration-matters/growing-canada-future/health.html

201. CIHI. *State of the Health Workforce in Canada 2022*. Ottawa: Canadian Institute for Health Information, 2024. https://www.cihi.ca/en/the-state-of-the-health-workforce-in-canada-2022#:~:text=Key%20findings&text=The%20long%2Dterm%20care%20sector,800%20(0.6%25%20decline).

202. OECD. *Recent trends in international migration of doctors, nurses and medical students*. Paris: Organisation for Economic Cooperation and Development Publishing, 2019. https://doi.org/10.1787/5571ef48-en

203. Government of Canada. Canada announces new immigration stream specific to health workers. Nova Scotia, 28 June 2023. https://www.canada.ca/en/immigration-refugees-citizenship/news/2023/06/canada-announces-new-immigration-stream-specific-to-health-workers.html

204. World Education Services. *Summary of recent provincial initiatives supporting internationally educated health professionals*. New York, 2023. https://www.wes.org/wp-content/uploads/2023/07/Provincial-IEHP-Initiatives_ESDC-Comp_July-2023.pdf

205. Bortolussi-Courval E, Stake-Doucet N, Umaigba B. Incentivizing an exodus: The implications of recruiting nurses from low-middle income countries to high-income countries. *PLOS Global Public Health* 2023; 3(9): e0002355. https://doi.org/10.1371/journal.pghp.0002355

206. Pauls K. 'Stop the bleeding,' Philippines health official says about international recruiting of nurses | *CBC News*, 3 March 2023. https://www.cbc.ca/news/canada/manitoba/philippines-health-international-nurses-1.6764854

207. WHO. *WHO Global Code of Practice on the International Recruitment of Health Personnel*. Geneva, 20 May 2010. https://www.who.int/publications/i/item/wha68.32

208. International Organization for Migration. Skills mobility partnerships: Recommendations and guidance for policymakers and practitioners. IOM, Geneva, 2023. https://publications.iom.int/books/skills-mobility-partnerships-recommendations-and-guidance-policymakers-and-practitioners

209. Mastercard Foundation. Introducing the Mastercard Foundation's Africa Higher Education Health Collaborative (AHEHC). https://mastercardfdn.org/all/scholars/introducing-the-mastercard-foundations-africa-higher-education-health-collaborative-ahehc/

210. Mastercard Foundation. The Young Africa Works Strategy. https://mastercardfdn.org/our-strategy/young-africa-works/

211. The Panel recommends definitions be agreed on two terms. For Net Zero Poaching, the Panel proposes that all IEHWs meet the WHO Ethical Recruitment guideline. For Net Workforce Gains, the Panel recommends the development or rapid equivalency targets and reciprocal workforce exchanges that would strengthen health workforce training recruitment and retention.

212. de Ruggiero E. Aslanyan G, Michaelides O. A coherent global health strategy would help Canada lead in the world. *Policy Options*, 23 November 2023. https://policyoptions.irpp.org/magazines/november-2023/global-health-strategy/

213. Fan VY, Grépin KA, Shen GC, Chen L. Tracking the flow of health aid from BRICS countries. *Bulletin of the World Health Organization* 2014; 92: 457–458.

214. Guo B, Fan V, Strange A, Grépin KA. Understanding China's shifting priorities and priority-setting processes in development assistance for health. *Health Policy and Planning 2024*; 39(S1): i65–i78. https://doi.org/10.1093/heapol/czad095

215. Canadian Academy of Health Sciences. *Canadians making a difference: The expert panel on Canada's strategic role in global health*. November 13 2011. https://cahs-acss.ca/wp-content/uploads/2015/07/CofCA_globalHealthReport_E_WEB_FINAL1.pdf

216. CIHR. *Global health 3.0, 2021–2026, Framework for Action on Global Health Research*. Ottawa: https://cihr-irsc.gc.ca/e/52503.html

217. Health Canada. *Unleashing innovation: Excellent healthcare for Canada — Report of the advisory panel on healthcare innovation.* July 2015. https://www.canada.ca/content/dam/canada/health-canada/migration/healthy-canadians/publications/health-system-systeme-sante/report-healthcare-innovation-rapport-soins/alt/report-healthcare-innovation-rapport-soins-eng.pdf

218. Innovation, Science, and Economic Development Canada. *Canada's Fundamental Science Review: Investing in Canada's future – strengthening the foundations of Canadian research.* 10 April 2017. https://ised-isde.canada.ca/site/canada-fundamental-science-review/sites/default/files/attachments/2022/ScienceReview_April2017-rv.pdf

219. Innovation, Science, and Economic Development Canada. *Report on the Advisory Panel on the Federal Research Support System*. 2023. https://ised-isde.canada.ca/site/panel-federal-research-support/sites/default/files/attachments/2023/Advisory-Panel-Research-2023.pdf

220. Naylor D and Toope SJ. *Opinion: Untangling the great policy mess of Canada's innovation problem*. *Globe and Mail*. 27 October 2023. https://www.theglobeandmail.com/business/commentary/article-canada-innovation-research-funding-economy/

221. Bernstein A and Stein J. Opinion: Canada's science and tech ecosystem will define our success in the next century. *Globe and Mail*. 15 May 2023. https://www.theglobeandmail.com/opinion/article-canadas-science-and-tech-ecosystem-will-define-our-success-in-the-next/

222. Waddell C. *The Next One – Preparing Canada for another Health Emergency*. Public Policy Forum. September 2023. https://ppforum.ca/publications/canadians-health-security/

223. National Academies of Sciences, Engineering, and Medicine. *Toward Equitable Innovation in Health and Medicine: A Framework*. 2023. https://nap.nationalacademies.org/catalog/27184/toward-equitable-innovation-in-health-and-medicine-a-framework

224. World Economic Forum. *Patient-first health with generative AI: Reshaping the care experience*. 12 January 2024. https://www.weforum.org/publications/patient-first-health-with-generative-ai/

225. Health Canada. *Unleashing Innovation: Excellent Healthcare for Canada: Report of the Advisory Panel on Healthcare Innovation.* Ottawa, July 2015. https://www.canada.ca/en/health-canada/services/publications/health-system-services/report-advisory-panel-healthcare-innovation.html

226. ScienceUpFirst—Together Against Misinformation. A national initiative of the Canadian Association of Science Centres. https://www.scienceupfirst.com/

227. Hotez P. *The Deadly Rise of Anti-science - A Scientist's Warning*. Johns Hopkins University Press, 2025.

228. Bernstein A, Stein J. *Opinion: Canada's science and tech ecosystem will define our success in the next century. Globe and Mail*, 15 May 2023. https://www.theglobeandmail.com/opinion/article-canadas-science-and-tech-ecosystem-will-define-our-success-in-the-next/

229. Wong E, Motala A, Ross R, et al. Methods for identifying health research gaps, needs, and priorities: A scoping review. *Journal of General Internal Medicine* 2022; 37(1): 198-205. http://doi:0.1007/s11606-021-07064-1

230. This aligns with key Finding #4 above that stresses the importance of greater innovation with respect to managing the training, recruitment, deployment and retention of health workers.

231. Evans, JR. Essential national health research — A key to equity in development. *New England Journal of Medicine* 1990; 323(13): 913-915. http://DOI:10.1056/NEJM199009273231311

232. International Energy Agency. *Horizon Europe Strategic Plan (2021–2024)*. Brussels, 2021. https://www.iea.org/policies/15683-horizon-europe-strategic-plan-2021-2024

233. CIHR, NSERC, SSHRC, PHAC, IDRC, Grand Challenges Canada, ISED, Office of the Chief Scientific Advisor, Canadian Foundation for Innovation

234. Government of Canada. *Canada's Biomanufacturing and Life Sciences Strategy*. 28 July, 2021. https://ised-isde.canada.ca/site/biomanufacturing/en/canadas-biomanufacturing-and-life-sciences-strategy

235. Waddell C. *The Next One – Preparing Canada for another Health Emergency.* Public Policy Forum. September 2023. https://ppforum.ca/publications/canadians-health-security/

236. Expert Panel for the Review of the Federal Approach to Pandemic Science Advice and Research Coordination. *The time to act is now: Report of the expert panel*, Ottawa, October 2024. https://www.canada.ca/en/health-canada/corporate/about-health-canada/public-engagement/external-advisory-bodies/review-federal-approach-pandemic-science-advice-research-coordination/time-to-act.html#s5

237. G7 Chief Scientific Advisers. *100 Days Mission First Implementation Report.* 2 December 2021. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1038969/100_Days_Mission_-_First_Implementation_Report__1_.pdf

238. World Health Assembly agreement reached on wide-ranging, decisive package of amendments to improve the International Health Regulations. World Health Organization. 1 June 2024. https://www.who.int/news/item/01-06-2024-world-health-assembly-agreement-reached-on-wide-ranging—decisive-package-of-amendments-to-improve-the-international-health-regulations—and-sets-date-for-finalizing-negotiations-on-a-proposed-pandemic-agreement

239. Coalition for Epidemic Preparedness Innovations. *Global partnership to accelerate the development of biologic countermeasures against epidemic and pandemic threats*. https://cepi.net/

240. Global innovation clusters. Innovation, Science, and Economic Development Canada. https://ised-isde.canada.ca/site/global-innovation-clusters/en

241. Grand Challenges Canada. Bold ideas with big impact. Ottawa. https://www.grandchallenges.ca/

242. Mansilla C, Lavis J. Using an overview of systematic reviews to identify topics for health systems living reviews. *Cochrane Colloquium Abstracts*. 2020. https://abstracts.cochrane.org/2020-abstracts/using-overview-systematic-reviews-identify-topics-health-systems-living-reviews

243. German Global Health Hub. *Advancing Global Health Together*. Berlin, n.d. https://www.globalhealthhub.de/en/about-us/idea

244. *Scientific Advisory Committee on Global Health — Overview*. Canada, n.d. https://cihr-irsc.gc.ca/e/52535.html

245. Canadian Association for Global Health. https://cagh-acsm.org/en/about/who-we-are

246. The International Health Policy Program. Global Health Division of the Ministry of Public Health, Thailand. https://ihppthaigov.net/who-we-are/about

247. Germany. Strengthening Germany's global health policy. https://www.giz.de/en/worldwide/119239.html

248. *Announcing Global Health Diplomacy*. Stockholm School of Economics. 6 October 2023. https://www.hhs.se/en/about-us/news/crh/2023/global-health-diplomacy/

249. *Global Health: Advocacy and diplomacy in action*. Geneva Summer Schools, University of Geneva. https://www.unige.ch/genevasummerschools/programme/courses/global-health-advocacy-and-diplomacy-action

250. Global health 50/50. *Workplaces: Worse for Women*. Cambridge, 2023. https://globalhealth5050.org/2023-Report/

251. WomenLift Health. Reimagining and Transforming Leadership in Global Health. https://www.womenlifthealth.org/

252. Global Gateway. *EU Global Health Strategy, Better Health for All in a Changing World*. Luxembourg, 2022. https://health.ec.europa.eu/system/files/2023-10/international_ghs-report-2022_en.pdf

253 France. *France global health strategy 2023-2027 Abstract*. Paris: Ministry for Europe and Foreign Affairs, 2023. https://www.diplomatie.gouv.fr/IMG/pdf/a5_strategy_global_health_v2_bd_cle49712b.pdf

254 Germany. *Global Health Strategy of the German Federal Government*. October 2020. https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/5_Publikationen/Gesundheit/Broschueren/Global_Health_Strategy.pdf

255 Japan. *Global Health Strategy of Japan*. May 2022. https://www.kantei.go.jp/jp/singi/kenkouiryou/en/pdf/final_GHS.pdf

256 Netherlands. *Dutch Global Health Strategy 2023-2030*. 21 October 2022. https://www.government.nl/ministries/ministry-of-foreign-affairs/documents/publications/2022/10/21/dutch-global-health-strategy-2023-2030

257 Sweden. *Sweden's work on global health — implementing the 2030 Agenda*. Stockholm, 2018. https://www.government.se/4acda4/globalassets/government/dokument/utrikesdepartementet/sv_arbete_m_global_halsa_english_final.pdf

258 Switzerland. *Swiss Health Foreign Policy 2019–2024*. Bern, 2019. https://www.bag.admin.ch/dam/bag/en/dokumente/int/Swiss%20Health%20Foreign%20Policy%202019%E2%80%932024.pdf.download.pdf/Swiss%20Health%20Foreign%20Policy%202019%E2%80%932024.pdf

259 Thailand. *Thailand Global Health Action Plan 2021-2027*. July 2021. https://tpd.dtam.moph.go.th/wp-content/uploads/2023/08/GHplan-ENG.pdf

260 UK. *Policy paper, Global Health Framework: Working together towards a healthier world*. London: HMSO, May 2023. https://www.gov.uk/government/publications/global-health-framework-working-together-towards-a-healthier-world/global-health-framework-working-together-towards-a-healthier-world-may-2023#summary

261 USA. *Global Strategy of the Department of Health and Human Services*. Washington DC: 2016. https://www.hhs.gov/sites/default/files/hhs-global-strategy.pdf

RSC SRC

CAHS
ACSS