

# I

## The Broad Impacts of COVID-19 in Canada

*Christopher Cotton*

### INTRODUCTION

The COVID-19 pandemic has been one of the most significant global crises in recent history, with its impact profoundly felt across Canadian society. According to the Public Health Agency of Canada (PHAC), the pandemic caused approximately 60,871 deaths out of over 4.5 million confirmed COVID-19 cases (Govt of Canada 2024). While these numbers highlight the direct health toll, the pandemic's effects have been much broader. The pandemic and the public health measures implemented, including lockdowns and restrictions, brought about major changes in Canada's economy, health-care system, and social fabric. This volume explores the impacts of the COVID-19 pandemic on various aspects of Canadian life, emphasizing the interconnected nature of health, economic stability, social equity, and policy. It works towards an understanding of how the pandemic reshaped Canadian society and offers insights into addressing challenges moving forward.

The papers in this volume summarize many of the advancements and insights from cross-disciplinary research collaborations during COVID-19 in Canada. Many of these papers were supported by the One Society Network (OSN), a nationwide group of epidemiologists, economists, policy experts, and other researchers working to understand the broader impacts of COVID-19. The OSN was funded by PHAC and the Natural Sciences and Engineering Research Council of Canada (NSERC) under their Emerging Infectious Disease Modeling (EIDM) initiative, which funded five research groups with more than one-hundred affiliated researchers across Canada. The

OSN launched in 2021, growing out of early-pandemic collaborations between several of its members as part of the Royal Society of Canada's COVID-19 working groups, and the interdisciplinary efforts of the Canada Digital Technology Supercluster's Looking Glass project and Global Canada's COVID Strategic Choices Group to combine economic and epidemiological insights for policymakers. The volume also contains contributions from others on the broader impacts of pandemics and strengthening Canada's preparedness for future crises. These include contributions from the Royal Society of Canada's COVID-19 Working Group on Economic Recovery and collaborations across the five NSERC EIDM networks.

#### PUBLIC HEALTH VS ECONOMICS

From the beginning of the pandemic, there was a perceived misalignment between public health priorities and economic interests. Public health experts advocated for strict lockdowns, social distancing measures, and restrictions on public engagement and businesses to limit the spread of the virus. Meanwhile, many economists and business leaders expressed concerns about the economic consequences of these measures, such as rising unemployment, business closures, reduced productivity, and a significant decline in gross domestic product (GDP). This tension was frequently portrayed in media and policy discussions as a fundamental conflict: protect lives at the expense of the economy or protect the economy at the expense of lives.

This view is too simplistic; it overstates the conflict between the economy and public health. It depends on a short-term perspective on the consequences of lockdown policies, rather than a more dynamic consideration of how policies that save lives and preserve health affect long-run health and productivity. The siloed nature of specialist research, a focus on immediate trade-offs, models that do not work together, and poor cross-field communications all contributed to the perceived conflict between economics and public health (Cotton, LaBarge, and Nordstron 2025).

As the pandemic went on, researchers began working together across fields to address these challenges. Epidemiologists and public health researchers began looking beyond the initial benefits of lockdowns to consider their impact on the likelihood of future lockdowns. Economists developed models to estimate the economic

dynamics of alternative pandemic contagion and mitigation scenarios presented by public health officials and policymakers, aiming to provide direct cost comparisons for the epidemiological predictions. Cross-disciplinary research groups, including the OSN and others involved in this volume, worked to combine these advancements in economic and epidemiological modeling to inform policy.

These collaborations often showed substantial alignment between public health and economic outcomes. Agnew et al. (2020) and Cotton et al. (2021, 2022) showed that earlier and stricter lockdowns could benefit both public health and the economy if they reduced the need for future lockdowns. Reopening too early only to need to shut everything back down soon after was substantially worse for the economy than stricter initial restrictions. When considering longer-term dynamics, the policies that benefited public health were often the same policies that helped the economy. Longworth and Milne (2022) provide an institutional and macroeconomic perspective on pandemic preparation, emphasizing the need to integrate financial system resilience and public health strategies under conditions of uncertainty.

These insights consistently suggest that the perception of conflict is greater than the actual conflict between public health, economics, and other objectives. They call attention to a lack of cross-disciplinary communication and collaboration at the onset of the pandemic. Cotton, LaBarge, and Nordstrom (2025) found that Canadian policymakers and public health leaders were concerned about the broader (e.g., economic, educational) impacts of their policies, but they had access to little credible evidence on these dimensions to guide decisions. These insights suggest that building a stronger evidence base and strengthening cross-field interactions is necessary ahead of the next crisis. This means ensuring that the systems used for guiding policy during crisis are informed by a broader set of research, and that this research is rigorous, reliable, and relevant to policymaker needs.<sup>1</sup>

Some chapters speak directly to these issues. Chapter 7 (by Lloyd-Ellis, Chen, and Tremblay) provides guidance to future researchers and policymakers looking to model the economic impact of crises in ways that complement the modeling efforts in other fields such as epidemiology and public health. Chapter 10 (by Ares et al.) discusses lessons around the structure of governance and policy systems, and the benefits of strengthening coordination within federalist systems.

Chapter 15 (by Lewis et al.) calls for continued support for infectious disease modelling and cross-disciplinary collaboration during normal times to ensure that Canada maintains its capacity to respond to crises in extraordinary times. It was written by the leaders of the five NSERC and PHAC funded EIDM research groups including epidemiologists, public health researchers, and economists, acknowledging the tremendous advancements made over the course of the pandemic in our capacity to work together across institutions and disciplines to model pandemics and pandemic policy, and to effectively communicate results and inform policy.

Other chapters contribute to the issues by exploring and reflecting on the broader costs of that the COVID-19 pandemic has had on Canadian society, allowing for a more detailed understanding of the trade-offs inherent in policy decisions.

In the rest of this introductory chapter, I review the impact of COVID-19 and Canada's pandemic response on health and non-health outcomes. The intention is to provide a non-exhaustive summary of the rich research assessing the impact of COVID-19 on society, and how it relates to the research papers included within this volume.

## OVERVIEW OF LOCKDOWNS IN CANADA

The response to COVID-19 in Canada involved a range of lockdown policies and public health measures that differed significantly across regions and over time. Due to Canada's federal system, responsibility for health and emergency measures is shared between the federal government and the provinces and territories, leading to variations in the implementation of lockdowns and restrictions across the country. (See chapter 10 by Ares et al. for a discussion of crisis response in a federalist system of government.)

Lockdown measures began in March 2020, as Canada entered its first wave of the pandemic. Initial measures included the closure of non-essential businesses, restrictions on public gatherings, and stay-at-home orders. Provinces like Ontario and Quebec implemented stricter measures, including curfews in some cases, while other provinces, such as Alberta and British Columbia, took a more targeted approach, focusing on specific sectors or regions.

As the pandemic progressed, Canada experienced multiple waves of COVID-19, each prompting renewed public health measures. Later waves led to further lockdowns and restrictions, with different

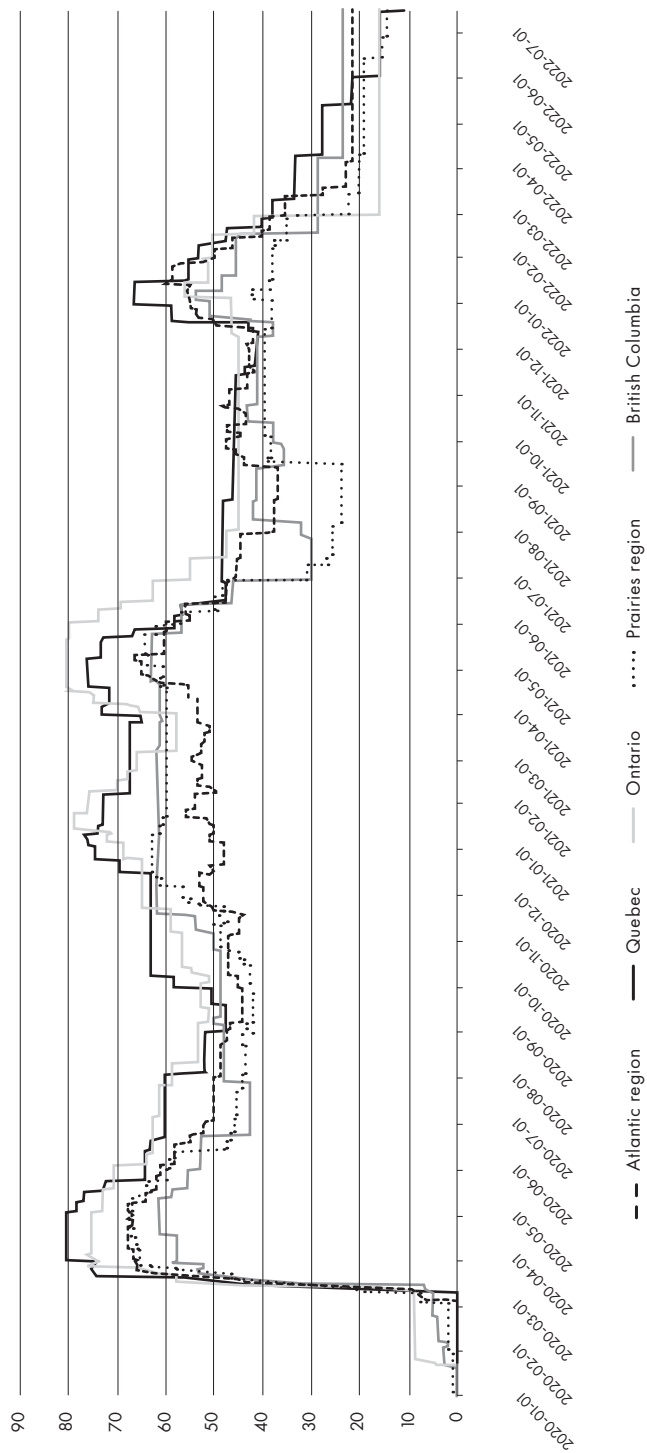


Figure 1.1 | Bank of Canada COVID-19 stringency index. Source: Bank of Canada (2022).

provinces implementing varying degrees of measures depending on their local context. For example, Ontario experienced prolonged lockdowns during these periods, while other provinces, such as Atlantic Canada, employed a regional bubble approach, allowing freer movement within the Atlantic provinces while restricting travel from outside the region.

Figure 1.1 shows the Bank of Canada's COVID-19 stringency index, illustrating how the restrictions on activities and mobility evolved over the first two and a half years of the pandemic.

Vaccination became a turning point in the fight against COVID-19. The first COVID-19 vaccines were administered in Canada in December 2020, with healthcare workers and long-term care residents prioritized. Vaccine availability gradually expanded in early 2021, with the general population gaining access by mid-2021. Vaccination rates varied across regions, with some provinces achieving higher uptake more quickly than others. By the end of 2021, Canada had one of the highest vaccination rates globally, with over 80% of eligible individuals receiving at least one dose of a vaccine. However, disparities in vaccination rates persisted, with certain communities and regions lagging due to factors such as vaccine hesitancy and access challenges.

The combination of lockdown measures and vaccination efforts played a critical role in managing the spread of COVID-19 in Canada. While lockdowns were effective in reducing transmission during peak waves, they also had significant social and economic consequences, which are explored in detail throughout this volume.

## PUBLIC HEALTH IMPACTS OF COVID-19 IN CANADA

### *Illness and Deaths*

From the onset of the pandemic through September 2024, PHAC reports that 60,871 deaths have been attributed to COVID-19 in Canada. Table 1.1 shows that the death rate differs widely across regions, with the highest COVID mortality rates by far being in the province of Quebec, with an estimated 232 deaths per 100,000 people (Govt of Canada 2024). In comparison, the COVID mortality rate for the rest of the country was 129 deaths per 100,000 people (vs 152 when Quebec is included).

Figure 1.2 illustrates total COVID-19 deaths over time, showing substantial differences across regions. Places like Quebec and

Table 1.1 | Province and territory reported COVID-19 deaths

	Reported deaths	Deaths per 100,000
Canada	60,871	152
Newfoundland and Labrador	429	80
Prince Edward Island	129	74
Nova Scotia	1,115	105
New Brunswick	1,067	128
Quebec	20,553	232
Ontario	18,873	121
Manitoba	2,571	177
Saskatchewan	2,066	171
Alberta	6,613	141
British Columbia	7,394	134
Yukon	32	71
Northwest Territories	22	49
Nunavut	7	17

Source: Government of Canada (2024).

Ontario experienced higher mortality rates early in the pandemic, while other regions largely avoided deaths during the initial waves before experiencing more during later waves.

Figures 1.3 illustrates the weekly new cases and deaths for all of Canada based on detailed COVID-19 case data reported by PHAC. In total, PHAC documents 4,561,837 confirmed cases of COVID-19 through June 2024. This is likely a severe underestimate of the total number of COVID-19 cases, as it does not include untested or unreported cases.

From this figure, we see that both contagion and deaths peaked in January 2022 with the spread of the Omicron variant of the disease. Omicron was highly transmissible compared to earlier variants like Delta, leading to rapid and widespread infection. While Omicron caused a significantly higher number of cases, it tended to cause less severe illness in vaccinated individuals, especially among those who had received booster doses. However, because of its high

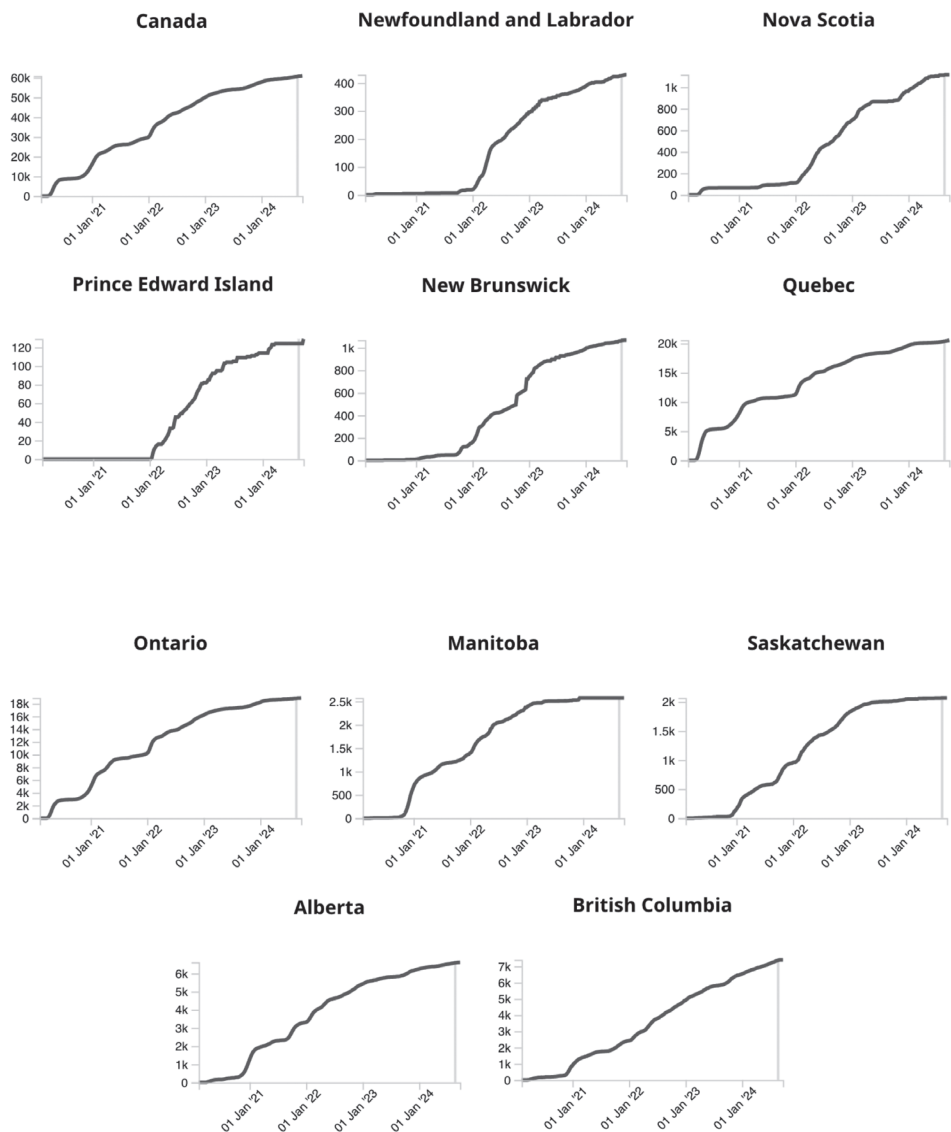


Figure 1.2 | Reported COVID-19 deaths over time. Source: Government of Canada (2024).



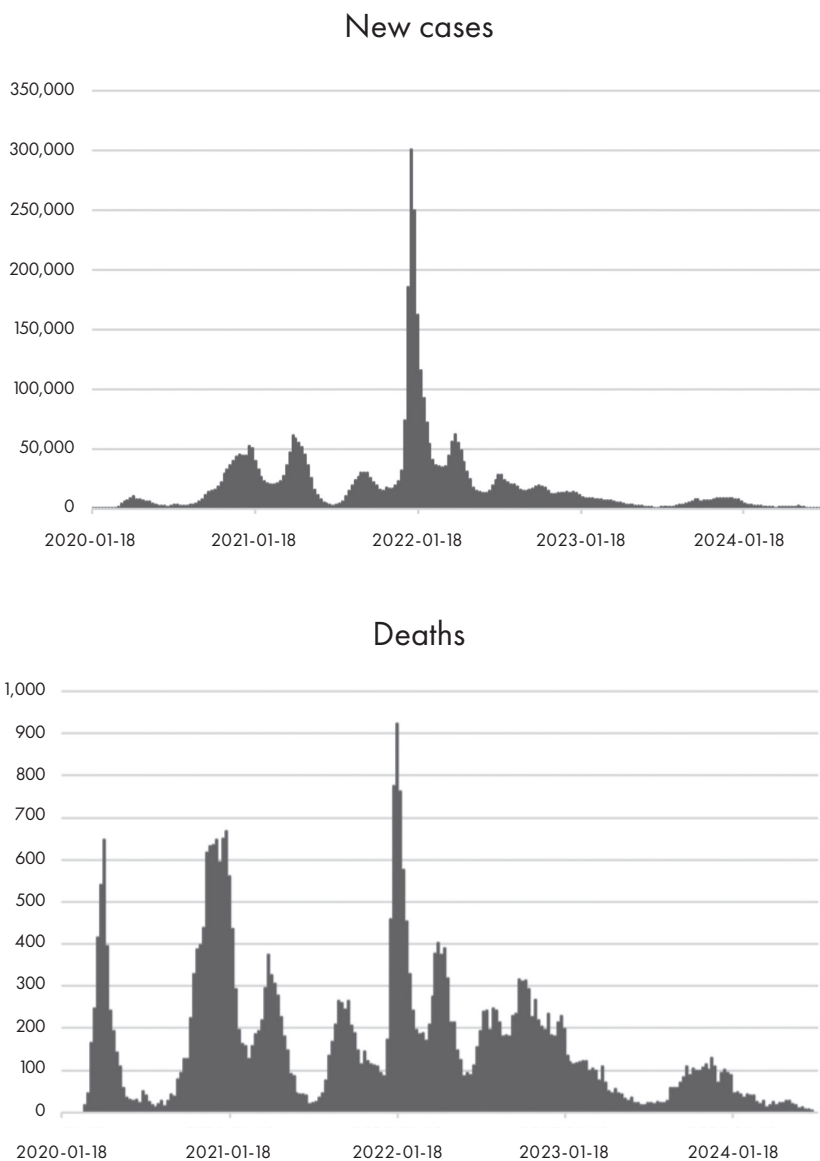


Figure 1.3 | Total reported COVID-19 incidence of new cases and deaths by week. Source: Government of Canada, PHAC (2024).

transmissibility, the sheer number of infections still led to a substantial number of hospitalizations and deaths.

These results suggest that while public fear and lockdown policies regarding COVID-19 peaked early in the pandemic, the disease's impact on mortality did not begin to subside until much later.

The estimated total deaths due to COVID-19 will underestimate the total deaths caused by the pandemic, as delayed treatment for other diseases, opioid use, and other factors were also exacerbated by the pandemic. Statistics Canada (2022) reports that more than 14% of deaths in the population under forty-four years of age are "excess deaths" relative to expected levels. However, only 1.5% of deaths in this age range were directly due to COVID-19. In other words, among younger populations, the pandemic likely contributed to substantially more deaths indirectly than through the disease itself.

Among the oldest groups, the opposite is true. Excess deaths are lower than COVID-19 deaths, suggesting that a substantial share of the elderly population whose deaths are attributed to COVID-19 may have died even without the pandemic. This is consistent with the idea that any positive test of COVID-19 and in some places any deaths that occurred during certain periods, were classified as COVID-19 deaths.

### *Long-Term Care*

The elderly population and those in long-term care facilities were especially at risk during the first wave of the pandemic in the first half of 2020. The COVID-19 pandemic exposed significant challenges in Canada's long-term care system. Key lessons learned include the need for stronger infection prevention measures, better staffing levels, and enhanced training for caregivers and managers. Many facilities faced difficulties managing outbreaks, particularly in the early stages, which underscored systemic issues such as underfunding and resource shortages.

Much of the higher death toll in Quebec and Ontario during initial lockdowns occurred in long-term care facilities (NIA 2022; Stall et al. 2020). The vulnerabilities and potential mismanagement of its long-term care have been widely discussed as contributors to Quebec's especially high COVID-19 mortality rate compared to other regions (CIHI 2020). Over the first year of the pandemic, approximately 75% of COVID-19 deaths in Quebec involved long-term care home

Table 1.2 | “COVID-19 attributed deaths” and “excess deaths” as a share of total deaths by age group, 28 March 2020 to 16 October 2021

	Share of total deaths classified as	
	COVID-19 deaths	Excess deaths
85 and older	29.6	44.4
65-84	37.3	43.5
45-64	18.8	10.6
44 and younger	14.2	1.5

Source: Canadian Vital Statistics Death Database (2022).

residents, a rate that was significantly higher than those for the rest of Canada and many other countries (St Onge 2021). Through June 2022, Quebec reported 8,170 COVID-19 deaths among its long-term care residents, compared to 5,030 in Ontario, and 17,177 for Canada as a whole.<sup>2</sup> These shortcomings highlighted the importance of long-term investments in long-term care infrastructure, workforce support, and regulatory oversight to ensure the safety and wellbeing of residents during future public health crises.

*Health Inequalities*

COVID-19 exposed and exacerbated health inequities in Canada, particularly among marginalized communities. Indigenous populations, racialized groups, and low-income individuals were disproportionately affected by both the virus and the economic fallout. Higher infection rates in urban areas and among essential workers underscored how social determinants of health, such as housing, income, and access to healthcare, influenced vulnerability to the virus.

For Indigenous communities, historical underfunding and lack of infrastructure in healthcare led to disproportionate hardships. Indigenous leaders had to mobilize culturally tailored responses, including local lockdowns and vaccine campaigns. This led to broader discussions about health equity, systemic racism in healthcare, and the necessity for long-term reforms to address these disparities. Chapter 5 (by Gangji, Jones, and Wheeler) reviews these issues.

*Non-COVID Medical Care and Wellbeing*

The pandemic also had significant repercussions for non-COVID medical care. Many elective surgeries and routine medical appointments were delayed or cancelled, leading to a growing backlog that persisted long after the peak waves of the pandemic, and contributing to excess deaths discussed above. This reallocation of healthcare resources, while necessary to address the immediate crisis, has had long-term consequences for patients awaiting treatment for other conditions, contributing to longer wait times and increased morbidity for non-COVID illnesses. Chapter 4 (by Wolitski and Rafferty) presents a scoping review of the economic impact of COVID-19 on the health system, detailing the changes in expenditures, medical services, and infrastructure during the pandemic.

Healthcare workers faced immense pressure throughout the pandemic, often working long hours under challenging conditions. The psychological toll on frontline workers was considerable, leading to increased rates of burnout, anxiety, and depression among healthcare professionals. This strain highlighted the need for better support systems for healthcare workers, including mental health resources and improved working conditions.

Mental health more broadly emerged as a critical concern during the pandemic. The psychological toll of the pandemic was immense. Social isolation, fears of the virus, and financial uncertainty led to widespread increases in anxiety, depression, and other mental health challenges. Mental health services, already under-resourced in Canada, struggled to meet the increased demand. The government's efforts to expand access to mental health services, including through telehealth initiatives, were critical, but they were insufficient to fully address the surge in needs. Statistics Canada surveys consistently showed a marked decline in Canadians' mental wellbeing, with young people, women, and frontline workers being particularly affected (Statistics Canada 2021a, 2021b, 2023). The mental health crisis emphasized the importance of integrating mental health into broader healthcare planning and ensuring adequate resources are available to support those in need. Chapter 13 (by Mutic and Cotton) reviews research about how the pandemic impacted mental health, addiction, and related outcomes.

The pandemic also accelerated certain innovations in healthcare, particularly in the adoption of digital health solutions. Virtual care became a crucial tool for maintaining healthcare services during lockdowns and social distancing measures. This shift towards telehealth, while beneficial in expanding access for some, also highlighted a digital divide, as not all Canadians had access to the technology needed for virtual consultations. Addressing these disparities will be essential for the future integration of digital solutions in healthcare.

#### IMPACT OF COVID-19 ON THE CANADIAN ECONOMY

The economic impact of COVID-19 in Canada was significant. As detailed in chapter 2 (by Cotton), economic output, as measured by GDP, declined by 4.9% in 2020, resulting in a total estimated loss of \$149 billion in that year, and \$242 billion over the first two years of the pandemic. The initial sharp contraction was driven by lockdowns, reduced consumer demand, disrupted supply chains, and changes in work patterns. While government-mandated lockdowns played a role, individual decisions to reduce economic activity out of concern for health were also substantial contributors to the decline.

A key feature of the economic response was uneven impact across industries and business types. While corporations experienced a substantial recovery and even saw profits rise during the pandemic, unincorporated (typically smaller) businesses faced a dramatic decline in profitability – accounting for much of the overall decline in GDP. Arts, entertainment, and accommodation sectors, which heavily rely on in-person interactions, were disproportionately affected. In contrast, larger corporations, particularly in industries such as retail and wholesale, managed not only to recover but also to thrive during the pandemic.

The COVID-19 pandemic also had a significant effect on inflation and consumer prices. While initial disruptions to supply chains drove temporary spikes in prices, the longer-term impact was more complex. The economic stimulus measures taken by both federal and provincial governments, combined with shifts in consumer spending patterns and labour shortages, contributed to rising inflation rates in Canada. Inflation peaked in 2022, reaching rates not seen in decades (see chapter 2 in this volume). Labour shortages – discussed in more detail in chapter 3 (by Lloyd-Ellis) – played a key role in these inflationary pressures, as labour became scarce in key

industries, contributing to rising wages and, subsequently, higher consumer prices.

The pandemic also highlighted and exacerbated existing inequalities in the labour market. Chapter 9 (by Anandaraj) examines the disparate effects on vulnerable populations, including low-income workers, women, and marginalized communities, who were disproportionately affected by job losses. Labour force participation experienced a notable decline, with many workers, particularly women, being forced to exit the workforce due to caregiving responsibilities or other challenges brought on by the pandemic. These issues have contributed to a slower recovery in employment for certain groups, deepening economic disparities. Addressing these inequalities is crucial for building a more resilient economy.

## OTHER IMPACTS ON SOCIETY

### *Education*

Education systems also experienced unprecedented disruptions. School closures, shifts to remote learning, and reduced in-person support significantly affected students' learning experiences. Chapter 6 (by Afodjo et al.) provides an overview of the impacts on educational attainment in Canada, noting that disruptions were particularly detrimental to lower-income and Indigenous students, as well as those in public schools, compared to their peers in private education. The differential impacts on educational outcomes point to the need for policies that address learning gaps and ensure equitable access to education moving forward.

### *Public Transit and Environmental Impact*

The pandemic also affected public infrastructure, including public transit systems. Chapter 8 (by Petit, Tedds, and Yu) examines the fiscal impact on Calgary's public transit system, revealing a significant drop in fare revenue and ridership during the pandemic. The analysis suggests that while low-income riders continued to depend on public transit, the loss of other ridership sources led to substantial funding challenges. These impacts underscore the need for increased financial support for public transit systems to maintain service levels during times of crisis.

Environmentally, the pandemic led to mixed outcomes. Chapter 11 (by Fiestas-Flores, Adamowicz, and Lloyd-Smith) reviews the environmental effects of COVID-19 in Canada, including both positive and negative impacts. Lockdowns resulted in temporary improvements in air quality and reductions in greenhouse gas emissions. However, increased household waste from single-use products and changes in consumption patterns offset some of these gains. The interplay between economic disruptions and environmental outcomes highlights the complexity of creating sustainable policies during periods of crisis.

### *Indigenous Communities*

Indigenous communities were disproportionately affected by COVID-19 due to pre-existing vulnerabilities, including limited healthcare infrastructure, overcrowded housing, and systemic barriers to accessing public services. Chapter 5 (by Gangji, Jones, and Wheeler) details how these factors led to more significant impacts on health and economic wellbeing for Indigenous populations. Indigenous-led initiatives played a crucial role in mitigating harm and demonstrated the value of culturally tailored responses in improving health outcomes.

### *Social Inequities and the Social Contract*

The pandemic underscored the deep-seated inequalities within Canadian society, particularly affecting marginalized groups, including racialized communities, low-income households, and essential workers. Many of these groups faced heightened exposure to the virus, reduced economic opportunities, and greater mental health challenges. Chapter 14 (by Adamowicz et al.) argues for renewing the social contract in Canada, proposing reforms to public services, income support, and crisis preparedness to build a more equitable and resilient society. The advocacy for measures such as a Basic Income Guarantee (BIG) reflects a broader recognition that addressing these structural inequalities is critical to fostering resilience.

### *Canadian Armed Forces and Policy Coordination*

The role of the Canadian Armed Forces (CAF) in the pandemic response is explored in chapter 12 (by Kasurak and Leuprecht). The CAF provided essential support to long-term care facilities and

assisted in vaccine distribution. However, the pandemic revealed gaps in Canada's defence policy and highlighted the need for improved preparedness for domestic humanitarian missions. Additionally, chapter 10 (by Ares et al.) emphasizes the importance of coordination in a decentralized federal system. The varied responses among provinces illustrated the challenges of achieving consistency and efficiency in public health policy across Canada's diverse jurisdictions.

### *Innovation and Technology*

The COVID-19 pandemic significantly accelerated innovation and technological adoption across Canada, catalyzing changes in how businesses, governments, and individuals operated. With lockdowns and social distancing measures in place, many sectors were forced to adapt quickly to maintain operations. Remote work became the norm for a large portion of the workforce, leading to a rapid expansion of digital infrastructure and the adoption of new collaboration tools. This shift encouraged investment in cloud computing, cybersecurity, and digital communications, which are likely to have long-lasting effects on workplace practices and productivity.

Moreover, the pandemic spurred innovation in sectors like healthcare and education. Telemedicine saw unprecedented growth as healthcare providers sought ways to offer remote consultations and services, while educational institutions expanded their digital platforms to accommodate online learning. In addition, supply chain disruptions prompted companies to explore automation, artificial intelligence, and local production technologies, which could reduce reliance on global supply chains in the future. These developments, though born of necessity, have laid the groundwork for future technological advances, with the potential to increase Canada's global competitiveness and resilience.

Chapter 13 (by Mutic and Cotton) reviews research on how the pandemic changed technology innovation and adoption, and chapter 14 (by Adamowicz et al.) argues that the pandemic provides lessons that can be harnessed to increase innovation in Canada in the future.

### *Other Areas of Impact*

The impact of COVID-19 extended into many other facets of society not explored in depth in this volume. For example, the housing mar-



ket experienced dramatic shifts, with urban exodus and increased demand for suburban and rural properties. The surge in remote work not only reshaped real estate but also altered the dynamics of work-life balance, commuting, and urban economies. Public trust in institutions also fluctuated, with some Canadians expressing growing scepticism about government efficacy, while others rallied around collective public health efforts. Understanding these broader shifts is crucial as Canada continues to navigate the recovery process and prepares for future crises. Chapter 13 (by Mutic and Cotton) discusses the pandemic's impact on homelessness, housing markets, and other outcomes.

The comprehensive exploration of COVID-19's broad and lasting impacts highlights that effective crisis response requires understanding not only the health implications but also the economic, social, and policy-related consequences of actions taken. The interconnected nature of these impacts emphasizes the need for collaborative, interdisciplinary approaches in addressing future challenges. Strengthening cross-field interactions, building resilient institutions, and ensuring that systems are in place to respond to the diverse needs of society will be essential for Canada to effectively navigate future crises.

## CONCLUSIONS

The COVID-19 pandemic was an unprecedented crisis that impacted nearly every aspect of Canadian life. The lessons learned from this experience emphasize several key recommendations for future policymaking.

There is an opportunity to identify where Canada's public policy and political and social systems failed to protect Canadians during the pandemic, and to insist on reforms to prevent such failures during future crises (Longworth and Milne 2022). Many of the papers in the volume discuss such issues, with chapter 14 (by Adamowicz et al.) calling for a renewal of the social contract in Canada to ensure that government is fulfilling its promise to protect and support Canadians.

There is also the need to improve the way in which evidence and science informs policy both in and out of times of crisis. Chapter 15 (by Lewis et al.) calls for continued efforts to refine and support public health modelling and collaboration in Canada during normal times to ensure that Canada can respond effectively to crises in

extraordinary times. Specific insights that emerge from this volume of papers include the following.

First, policymakers must ensure that policy decisions are informed by their broader costs and benefits, not just the immediate or intended outcomes. Policies like school closures or lockdowns had wide-ranging impacts beyond public health, affecting mental health, education, and economic stability. Effective decision making requires an understanding of these broader trade-offs to prevent unintended negative consequences that could outweigh the intended benefits.

Second, collaboration and communication across disciplines are crucial. The pandemic showed that addressing challenges often required insights from public health experts, economists, educators, and more. Strengthening cross-disciplinary communication can help develop stronger systems and more comprehensive policies that address various dimensions of a crisis, leading to better outcomes.

Third, there remains a need to bridge the gap between academic research and the insights needed by policymakers. During the pandemic, potentially valuable research often failed to reach decision-makers in a timely or accessible manner; other evidence like modeling projections, particularly in economics, were outside of the traditional evidence hierarchy leaving policymakers uncertain about how to incorporate it into public health decisions (Cotton, LaBarge, Nordstrom 2025). Knowledge translation – ensuring that research findings are effectively communicated and usable for policymakers – is as important as the research itself for guiding decisions. Developing frameworks that make complex findings and evidence from across fields actionable for decision-makers is essential for effective crisis management.

Fourth, flexibility and adaptability in policy responses are essential. The pandemic was characterized by rapidly changing circumstances, requiring policymakers to adapt their strategies as new information became available. This highlights the importance of developing systems that are responsive to evolving evidence, incorporate insights from different fields, and are capable of adjusting to new challenges.

#### ACKNOWLEDGMENTS

I am grateful for financial support provided through my position as the Jarislowsky-Deutsch Chair in Economic and Financial Policy and as director of the John Deutsch Institute for the Study of Economic Policy.

## NOTES

- 1 Such needs for more rigorous, reliable, and relevant on the broader impacts of public health policies come through in the interviews with senior health leaders conducted by Cotton, LaBarge, and Nordstrom (2025) and their Methodology-Credibility-Applicability (MCA) framework for assessing evidence quality.
- 2 Data from the National Institute of Aging Long-Term Care COVID-19 Tracker. Reported through June 2022.

## REFERENCES

- Agnew, M., T. Ayinde, A. Beaulieu, et al. 2020. *Building the Canadian Shield: A New Strategy to Protect Canadians from COVID and from the Fight Against COVID*. Global Canada, 30 December. [https://issuu.com/global-canada/docs/building\\_the\\_canadian\\_shield\\_2\\_](https://issuu.com/global-canada/docs/building_the_canadian_shield_2_).
- Bank of Canada. 2022. "COVID-19 stringency index." 15 July. <https://www.bankofcanada.ca/markets/market-operations-liquidity-provision/covid-19-actions-support-economy-financial-system/covid-19-stringency-index/>.
- (CIHI) Canadian Institute for Health Information. 2020. "Pandemic Experience in the Long-Term Care Sector: How Does Canada Compare with Other Countries." *CIHI Snapshot*. Canadian Institute for Health Information. <https://www.cihi.ca/sites/default/files/document/covid-19-rapid-response-long-term-care-snapshot-en.pdf>.
- Cotton, C., B. Crowley, B. Kashi, H. Lloyd-Ellis, and F. Tremblay. 2021. "Will the Canadian Shield Lockdown Policy Save Jobs in Ontario?" Limestone Analytics and Global Canada, 9 January. <https://limestone-analytics.com/wp-content/uploads/2021/01/2021-January-COVID-UPDATE-2-Ontario-and-the-Canadian-Shield-2021-01-10.pdf>.
- Cotton, C., B. Crowley, B. Kashi, H. Lloyd-Ellis, and F. Tremblay. 2022. "Quantifying the Economic Impacts of COVID-19 Policy Responses on Canada's Provinces in (Almost) Real-Time." *Canadian Journal of Economics* 55: 406–45. <https://doi.org/10.1111/caje.12567>.
- Cotton, C., M. LaBarge, and A. Nordstrom. 2025. "Canadian Public Health Experiences during COVID-19: A New Framework for Assessing Evidence." *Frontiers in Public Health* 13:1620514. doi:10.3389/fpubh.2025.1620514.

- Government of Canada. 2024. "COVID-19 Epidemiology Update: Current Situation." 1 October. <https://health-infobase.canada.ca/covid-19/current-situation.html>.
- Longworth, D., and F. Milne. 2022. *Preparing for Pandemics: Lessons from the Global Financial Crisis and COVID-19*. World Scientific Publishing.
- (NIA) National Institute on Aging. 2022. "NIA Long-Term Care COVID-19 Tracker." National Institute on Aging. <https://ltc-covid19-tracker.ca/>.
- St Onge, P. 2021. "Quebec's COVID-19 LTC Disaster: Up to 6,700 Lives Could Have Been Saved." *MEI Economic Note*, Montreal Economic Institute, April. [https://www.iedm.org/wp-content/uploads/2021/04/note052021\\_en.pdf](https://www.iedm.org/wp-content/uploads/2021/04/note052021_en.pdf).
- Stall, N.M., A. Jones, K.A. Brown, P.A. Rochon, and A.P. Costa. 2020. "For-Profit Long-Term Care Homes and the Risk of COVID-19 Outbreaks and Resident Deaths." *Canadian Medical Association Journal* 192 (33): e946–e955. <https://doi.org/10.1503/cmaj.201197>.
- Statistics Canada. 2021a. "Survey on COVID-19 and Mental Health, September to December 2020." <https://www150.statcan.gc.ca/n1/daily-quotidien/210318/dq210318a-eng.htm>.
- 2021b. "Survey on COVID-19 and Mental Health, February to May 2021." <https://www150.statcan.gc.ca/n1/daily-quotidien/210927/dq210927a-eng.htm>.
- 2022. "Canada at a Glance, 2022: Impacts of COVID-19." <https://www150.statcan.gc.ca/n1/daily-quotidien/231212/dq231212c-eng.htm>.
- 2023. "Survey on COVID-19 and Mental Health, February to May 2023." <https://www150.statcan.gc.ca/n1/daily-quotidien/231212/dq231212c-eng.htm>.

# Lasting Disruption

Economic and Social Impacts  
of COVID-19 on Canada

EDITED BY

CHRISTOPHER COTTON

Published for the Institute for Intergovernmental Relations  
School of Policy Studies, Queen's University  
by  
McGill-Queen's University Press  
Montreal & Kingston • London • Chicago

# Contents

Tables and Figures | ix

Acknowledgments | xiii

1 The Broad Impacts of COVID-19 | 3

*Christopher Cotton*

2 Assessing the Impacts of COVID-19 on Canada's Economy  
and Businesses | 23

*Christopher Cotton*

3 Where Did All the Workers Go? Labour Market Shortages in the  
Wake of COVID-19 | 48

*Huw Lloyd-Ellis*

4 Impact of COVID-19 on Economic Outcomes within Canada's  
Public Healthcare System: A Scoping Review | 63

*Dana Wolitski and Ellen Rafferty*

5 Outlook on the Economic Impact of COVID-19 on Indigenous  
Communities and People in Canada | 91

*Areez Gangji, Maggie E.C. Jones, and Laurel Wheeler*

6 Education and COVID-19: The Canadian Student Experience | 149

*Nabil Afodjo, Christopher Cotton, Maggie Jones, and Lydia  
Scholle-Cotton*

- 7 Projecting the Impact of Alternative Policies in Rapidly Changing, Complex Environments: Methods, Assumptions, and Lessons Learned during the COVID-19 Pandemic | 194  
*Huw Lloyd-Ellis, Baiyou Chen, and Frederic Tremblay*
- 8 The Effects of COVID-19 on Public Transit in the City of Calgary: Fiscal Impacts and Equity Considerations | 217  
*Gillian Petit, Lindsay M. Tedds, and Wenshuang Yu*
- 9 COVID-19 and the Canadian Labour Market: Short- and Long-Term Impacts across Demographics and Industries | 233  
*Lakshmi Anandaraj*
- 10 Enhancing Pandemic Control in a Decentralized Federation | 247  
*Francois Arès, François Castonguay, Carolyn Fischer, Markus Herrmann, and James N. Sanchirico*
- 11 COVID-19 and the Environment in Canada: A Narrative Synthesis of Environmental, Behavioural, and Economics Literature | 256  
*Jerico Fiestas-Flores, W.L. (Vic) Adamowicz, and Patrick Lloyd-Smith*
- 12 Canadian Armed Forces and Domestic Pandemic Response | 285  
*Peter Kasurak and Christian Leuprecht*
- 13 On COVID-19's Other Impacts: Technology, Homelessness, Mental Health and Addiction, and Crime | 307  
*Brock Mutic and Christopher Cotton*
- 14 Renewing the Social Contract and Fostering Innovation to Build a Stronger Post-COVID-19 Economy | 334  
*W.L. (Vic) Adamowicz, Robin Boadway, Dan Breznitz, Christopher Cotton, Stewart Elgie, Evelyn Forget, Richard Gold, Esyllt Jones, Fabian Lange, Nathalie de Marcellis-Warin, Christopher McCabe, Stuart Peacock, and Lindsay M. Tedds*

15 Charting a Future for Emerging Infectious Disease Modelling in  
Canada: A Call to Maintain Capacity | 368

*Mark A. Lewis, Patrick Brown, Caroline Colijn, Christopher  
Cotton, Laura Cowen, Troy Day, Rob Deardon, David J.D. Earn,  
Deirdre Haskell, Jane Heffernan, Patrick Leighton, Kumar Murty,  
Sarah Otto, Ellen Rafferty, Carolyn Hughes Tuohy, Jianhong Wu,  
and Huaiping Zhu*

Contributors | 401