

VIEWPOINT

COVID-19 in Canada Experience and Response

Allan S. Detsky, MD, PhD

Institute for Health Policy, Management and Evaluation, Dalla Lana School of Public Health, University of Toronto, Toronto, Ontario, Canada; and Department of Medicine, Mount Sinai Hospital and University Health Network, Toronto, Ontario, Canada.

Isaac I. Bogoch, MD

Department of Medicine, University of Toronto, Toronto, Ontario, Canada; and Toronto General Hospital, Division of Infectious Diseases, University Health Network, Toronto, Ontario, Canada.

As of July 13, 2020, Canada has documented 107 861 cases of coronavirus disease 2019 (COVID-19) (286 per 100 000 people) and 8787 COVID-19–related deaths.¹ The rate of cases per 100 000 population in Canada can be framed by the rates for 2 other democracies; in Taiwan (which compared with Canada spends half as much of its gross domestic product on health care), the rate is 1.9 cases per 100 000,² and in the US (which compared with Canada spends 50% more of its gross domestic product on health care), the rate is 1014 cases per 100 000.²

The 2 most populous provinces, Ontario and Quebec, have reported the majority of the infections, 36 594 (250 per 100 000) and 56 407 (663 per 100 000), respectively,¹ and deaths, 2722 and 5628, respectively.¹ British Columbia, which initially appeared to be most at risk because of its interconnectivity with Asia and an initial outbreak in a long-term care facility in February, has documented only 2990 cases (60 per 100 000¹) and 187 deaths. Alberta has reported 8596 cases (195 per 100 000¹), but the other provinces and territories have reported relatively few cases. Rates of new cases and deaths peaked in early May and have been declining steadily, with many regions reporting no or few new

of personal protective equipment, testing kits, and ventilators. There has been considerable cooperation between federal and provincial officials and politicians and relatively little acrimony or conflicting messaging between levels of government. At the same time, there has been considerable, but generally civil, public criticism of both the decisions and the announcements made by these officials, from the public health, infectious diseases, and other related specialists across the country.

The specific steps that Canada used to limit infections included the following. Social (physical) distancing was the key measure that helped to control the epidemic in Canada. By late March, all provinces mandated closing of schools, universities, public playgrounds, and nonessential businesses. The federal and provincial governments encouraged everyone except essential workers to stay at home but did not mandate doing so. Social interactions were actively discouraged beyond people who lived in the same household, with fines issued by police for nonadherence in some places. The size of gatherings outside of households was limited to 5 to 10 people (who were still required to physically distance), depending on the province. These measures resulted in a substantial reduction in mobility (80% for public transit, 60% for walking and driving),³ a 46% reduction in travel to workplaces,⁴ and a contact rate between people in British Columbia that is 65% of normal.⁵

Travel restrictions were also important. Canada first issued warnings urging Canadians to avoid all nonessential travel to China in late January. On March 16, Canada limited incoming international flights to 4 cities and stopped al-

lowing entry of foreign nationals from any country except the US. On March 21, Canada closed the land border with the US for the first time since Canada was founded. US citizens were only allowed into Canada if they were traveling to Alaska. Canadian citizens, essential workers (eg, migrant farm workers), and those transporting goods were allowed entry. The Quarantine Act—established by the federal government in 2005 to empower the federal minister of health to take measures to “prevent the introduction and spread of communicable diseases”—was implemented, requiring everyone who entered the country to self-quarantine for 14 days. Interprovincial travel was discouraged; some provinces require 14-day quarantine, and Newfoundland requires official permission to enter the province.

The capacity for COVID-19 polymerase chain reaction testing was limited in many regions early on but was gradually expanded and by June was widely available across the country. Public health agencies hired and

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cases in weeks, yet some low-grade community transmission has persisted, primarily in focal, higher-risk areas. From June 20 to July 13, Canada reported fewer than 400 new cases per day,¹ compared with the US, a country with 10 times the population, that reported rates rising to 71 000² new cases per day during the same period.

Public health in Canada has federal, provincial, and regional oversight, while the Canadian constitution gives its 10 provinces and 3 territories jurisdiction over health care. As a result, in a manner similar to the US, where individual states largely determined the COVID-19 response, Canadian provinces have primarily determined strategies for containment and mitigation. The provincial public health authorities worked closely with regional public health officers and local governments to set policies and recommendations and to implement services such as testing and contact tracing. The federal government was supportive, but its policies are focused on issues like international border closings and managing federal stockpiles

Corresponding

Author: Allan S. Detsky, MD, PhD, Mount Sinai Hospital, 600 University Ave, Room 429, Toronto, ON M5G 1X5, Canada (Allan.detsky@sinaihealth.ca).

trained people to expand contact tracing efforts. Some public health communications were hindered by the use of low-technology methods, including faxes. The prime minister announced a voluntary new COVID-19 exposure notification app, which became available in some regions in late July. Masks were at first not recommended, then were recommended in June, and then were mandated in Quebec, Nova Scotia, and parts of Ontario and Alberta in July. Canada's efforts contrast sharply with those of Taiwan,⁶ Singapore,⁷ and South Korea,⁸ which relied more heavily on modern communication technology, including rapid integration of personal databases, more rapid expansion of tests and tracing, and wide-scale use of masks.

Several lessons have become apparent over the past 6 months. First, the acute health care systems in Canada were able to manage patient volumes without being overwhelmed. Early attempts to model intensive care unit capacity predicted that Ontario would exceed capacity by the end of April.⁹ But a rapid redeployment of resources that enabled intensive care unit and acute care surge capacity has so far not been required, mainly because of wide-scale population adherence to the public health initiatives described above.

Second, in contrast, the long-term care (LTC) facilities in Ontario and Quebec were not able to protect their residents. Approximately 80% of COVID-19-related deaths in Canada involved persons living in LTC facilities.¹⁰ COVID-19 exposed significant structural deficiencies in the way these facilities are staffed (eg, temporary workers might regularly shift from one LTC facility to another) and weak infection prevention and control practices. The military was activated to replace overwhelmed LTC staff in Quebec and Ontario and discovered patients who had been left alone. These events have triggered much public discussion, hopefully leading to improved quality of care for this vulnerable population.

Third, infection rates were highest in places where people live and work in close quarters (migrant farm workers, factory workers, and low-income multigenerational families who live in single units); this information guided proactive testing strategies.

With the consistent decline in new COVID-19 cases in Canada from May 4 to July 13, restrictions are starting to ease. On July 3, the 4 Atlantic provinces that had no new cases reported for several weeks created an interprovincial "bubble" to permit visitors who resided in those provinces to cross borders freely, while requiring 14 days of self-isolation for visitors from elsewhere. This is similar to what has oc-

curred in various regions of the US, such as Maine, New Hampshire, and Vermont. Even though there is substantial interprovincial variation in how the epidemic has unfolded, Canadians realize that even in places that experience no infections for long stretches, one event can trigger an outbreak that places hundreds of people in quarantine. For example, in late June the city of Kingston, Ontario, after weeks of no newly reported cases of COVID-19, experienced an outbreak connected to a single nail salon. Modeling done by the British Columbia Public Health Department shows that even though this province has managed to contain infections so far, if the degree of contact between people increases only slightly (from 60% to 70% of normal rates of contact), an increase in cases is projected to occur.⁵ Therefore, for the foreseeable future, Canada will require diligent identification and management of clusters. The goal of having children return to school is paramount (Quebec and British Columbia have already started), but plans to do so safely are still evolving.

Several politically related reasons may have contributed to the apparently more favorable response to COVID-19 public health initiatives in Canada compared with the US. First, Canada has relatively less underlying political polarization, and in general the pandemic has not been politicized. Second, the federal and provincial governments cooperated with one another despite differences in political affiliation, even though close examination reveals that responses were somewhat disorganized, with multiple layers of decision-making. Third, there is far less underlying distrust of science and public health in Canada, even though vigorous debate over some issues has occurred. Fourth and perhaps most important, even though some government leaders and officials in Canada were late in recognizing the seriousness of COVID-19, none of these officials doubt the seriousness of the challenges that the pandemic has created since the end of March.

Control of COVID-19 in Canada has been achieved primarily through social (physical) distancing, travel restrictions, increasing testing and tracing capacity, and waiting to gradually open the economy until there was a sustained reduction in the number of new cases. Political and public health leadership has been crucial in engaging population adherence. Whether this will continue is uncertain, but it is never too late to learn from experience and alter approaches as new evidence evolves. Importantly, officials need to remain humble, admit when previous strategies have not worked, and adjust policies accordingly.

ARTICLE INFORMATION

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