



BRIEFING NOTE NO. 1

ADDRESSING KEY GAPS IN BORDER MANAGEMENT DURING THE COVID-19 PANDEMIC: PREVENTING A FOURTH WAVE IN CANADA

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May 2021

EXECUTIVE SUMMARY

Canada is at a critical point in its pandemic response, involving a race between securing the benefits of mass vaccination and mitigating the risks from the further importation of SARS-CoV-2. The latter must include urgent action to address key gaps in international border management that have led to the introduction of variants, notably variants of concern (VOCs) with higher transmissibility and/or case fatality, and the potential for vaccine escape. Despite legal and practical constraints, Canada can move closer to what are now recognized as global “best practices” in the use of travel measures during the COVID-19 pandemic. These actions will protect the gains from mass vaccination, mitigate the likelihood of a severe fourth wave, and lay the foundations for safer easing of travel restrictions.

CANADA’S PANDEMIC RESPONSE AT A CRITICAL JUNCTURE: TOWARDS RECOVERY OR FOURTH WAVE

While mass vaccination is expected to result in declining transmission rates in Canada by summer 2021, modelling studies show that herd immunity (estimates range from 70-90% vaccination rates) is unlikely to be reached for some time. This is based on adults as a proportion of the Canadian population (80%), predicted rates of adult vaccination (80%), average levels of protection bestowed by existing vaccines (80%), and non-vaccination of younger children (<12 years).¹ Increased vaccination and lower transmission are expected to lead to behaviours by many Canadians during the summer months that raise the risk of a fourth pandemic wave. This includes reduced physical distancing and increased travel domestically and abroad.

The latter, in particular, is highly concerning because of the risk of further introductions of SARS-CoV-2 into Canada through travel under current border management policies. Data from the Public Health Agency of Canada (PHAC) reports more than 2000 international arrivals by air testing positive for SARS-CoV-2, including 557 cases involving VOCs (P1, B117, B1315) since the introduction of new testing and quarantine measures (22 February-22 April 2021).² Given no public information on when these travellers tested positive (i.e. at the border, during the 14-day mandatory quarantine, after 14-days), and whether there was strict compliance with mandatory quarantine requirements, it is not possible to accurately assess the virus introduction risk of these travellers to the wider Canadian population. However, existing exemptions from testing and quarantine, many reports of non-compliance, and limited enforcement of mandatory self-quarantine strongly suggest substantial risk of VOC importation and spread into the wider population. The detection of the variant B1617 since early April in multiple provinces provides further evidence of this problem.

Based on available evidence, we argue that there is a critical window of opportunity to address some of the current gaps in Canadian travel measures at international borders to prevent a fourth wave. While some level of increased new infections from fall 2021 may be deemed tolerable, the risk from higher transmission and/or higher case fatality VOCs threaten to substantially prolong the pandemic. The potential for SARS-CoV-2 variants that render vaccines less effective (vaccine escape), assisted by waning immunity following vaccination,³ may require rapid re-vaccination of the entire Canadian population. Furthermore, new evidence suggests Canada's strategy to delay the second vaccine dose for most adults potentially leaves Canadians more vulnerable to VOCs.⁴ Strengthening travel measures in several ways will reduce the risk of these scenarios at a critical time in Canada's pandemic response. This will also lay important foundations for the safer easing of restrictions.

BACKGROUND

The evidence on the effectiveness of travel measures has significantly evolved since the statement on 30 January 2020 that the World Health Organization (WHO) "does not recommend any travel or trade restriction based on the current information available."⁵ Numerous studies based on epidemiological data, genomic sequencing and mathematical modelling now demonstrate that travel has been a major causal factor in the spread of SARS-CoV-2 between and within countries worldwide.^{6,7} Travel has also been implicated in outbreak dynamics (growth rates, size of peaks and total number of cases) and the pattern/speed of spread to other jurisdictions.⁸ Importantly, assessments of the wide range of public health measures used during the pandemic show that travel measures, along with physical distancing, are the two most effective interventions for delaying and moderating virus spread in a population.⁹

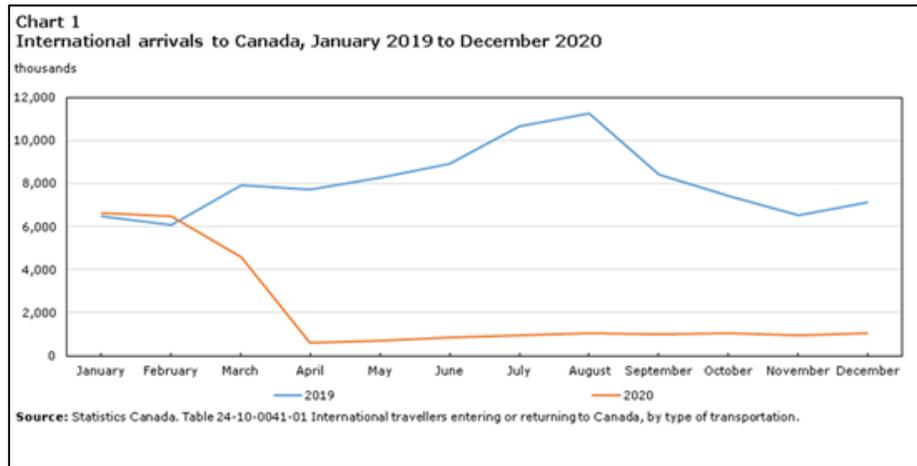
For decision-makers, the key policy question is not whether to apply travel measures, but how best to do so during the COVID-19 pandemic. The varied use of travel measures by virtually all countries, with differential degrees of effectiveness, provides valuable evidence of best practices. Based on analysis by the *Pandemics and Borders Project*, we conclude that Canada currently does not have sufficient policies in place to prevent continued SARS-CoV-2 importation including VOCs. While Canada has strengthened its use of travel measures since February 2021, there is an urgent need to address key gaps in policy and practice.

KEY GAPS IN CANADA'S BORDER MANAGEMENT DURING COVID-19

Timeliness of response

Canada remained aligned with initial WHO recommendations during the early months of the pandemic and thus limited travel measures to targeted advisories and enhanced screening at international airports. This was followed by measures introduced for travellers from the city of Wuhan, then China, and eventually an expanded list of countries (e.g., Iran, Italy). It was not until mid-March when Canada introduced a blanket global advisory against all non-essential travel by Canadians, restrictions on entry for non-essential purposes by non-nationals and non-residents, and a mandatory 14-day self-quarantine for international arrivals with exceptions. These measures led to a significant decrease in international arrivals by air, land, and sea (Chart 1). However, unlike Taiwan, Thailand, Vietnam, Australia, South Korea and many other jurisdictions,¹⁰ Canada's measures were only introduced after significant virus introduction had occurred. Most measures also remained largely self-monitored and enforced. A March 2021 report by the Auditor-General confirmed that "PHAC did not always meet the targets it set to verify whether travellers subject to the mandatory 14-day quarantine upon entering Canada were following the quarantine orders."¹¹

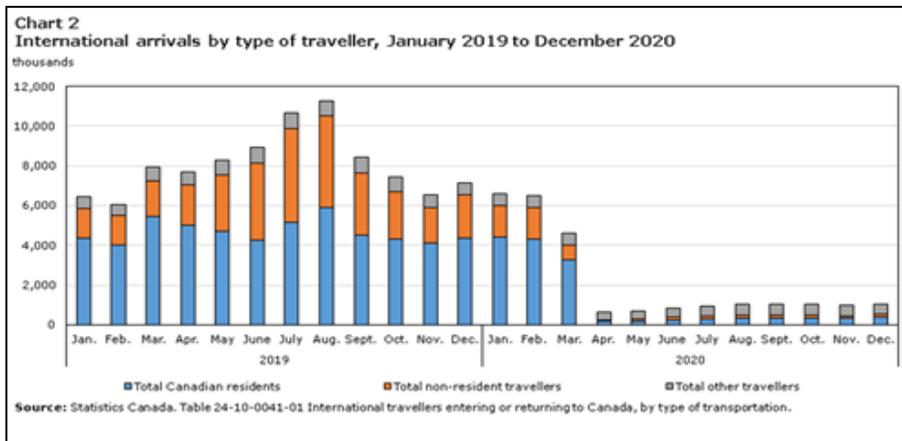
One year later, with a shift in WHO recommendations, and advances in evidence about the role of travel during COVID-19, Canada began to introduce new measures for non-exempted travellers amid growing concerns about VOCs. These include targeted cancellation of direct flights to Canada from the UK (21 December 2020 - 6 January 2021), Mexico and the Caribbean (31 January 2021 - present), and India and



Pakistan (22 April 2021 – 22 May 2021). Travellers are required to provide proof of a negative molecular test result obtained within 72 hours pre-departure (or a positive test within 15-90 days), whether arriving by air (effective 7 January 2021) or land (effective 15 February 2021). Alongside travel measures introduced by source countries, these new measures reportedly led to 50,000 cancelled flight reservations by January 21.¹² Beginning 22 February 2021, international arrivals by air were required to complete the first three days of a 14-day mandatory quarantine at a designated hotel at their expense. Travellers arriving via land and air are required to submit travel and contact information using the ArriveCAN app and take a molecular test upon arrival, as well as, towards the end of their 14-day quarantine. Despite these measures, the introduction of multiple VOCs into Canada since December 2020 suggests again a lack of timely action.

Inconsistencies in managing different sources of travel-related risks during COVID-19

There continued to be approximately one million international arrivals to Canada each month from April 2020 to December 2020 by land, air and sea (Chart 2), declining to 875,000 by February 2021.¹³ These arrivals include Canadians returning for essential and non-essential reasons (who cannot be prohibited from doing so under Section 6 of the Canadian Charter of Rights and Freedoms), and non-nationals and residents travelling for reasons deemed “essential”.



There are currently differences in what measures a traveller is subject to depending on whether they arrive by air, land or sea; their purpose of travel, and where they are arriving from. The level and basis of exemptions from mandatory testing and quarantine, in particular, do not compare favourably with best practice countries. While it may not be possible to achieve universal application

of travel measures, non risk-based decisions about who is permitted to travel and under what conditions (including exemptions) create gaps through which VOCs have been imported. For example, the exemption of international flight crews from mandatory testing and quarantine,¹⁴ allowing layovers to be spent in holiday destinations in Canada, does not align with evidence that transport workers are ranked as having the highest COVID-19 risk score among 966 non-health jobs.¹⁵ Moreover, inconsistencies in the treatment of different travellers, accompanied by reports of non-compliance and “workarounds” (e.g.

diversion from air to land crossings), undermine public confidence at a time when increased vigilance is needed.

Inadequate risk assessment data and methods

Policy decisions on border management are not currently based on recognized methods of risk assessment.¹⁶ There is disjointed and inconsistent data collection and analysis at provincial and national levels. Data collection to inform border management in Canada has been partial and does not provide the basis of accurate risk assessment. As a result, the role of travel to SARS-CoV-2 introduction, repeated reintroduction and onward community spread has been underestimated. The underestimated figure of <2% of cases linked to travel, for example, is frequently cited and fails to provide appropriate evidence to inform policy choices.¹⁷

Canada needs to increase transparency around what risk assessments are being conducted and which part of government is currently responsible for them. While selected data has been released by PHAC and CBSA, in response to individual media requests, publicly available data on travel and COVID-19 remains limited, disjointed and highly aggregated. This points to a lack of adequate or integrated systems for data collection and sharing on cases and risks linked to both international and inter-provincial travel, and the long-term need for a joined-up system of data collection on travel-related infections to strengthen national disease surveillance capacity.

Systematic underestimation of travel-related risk in Canada

Prior to 22 February 2021, travel-related infections were only tracked for a select portion of travellers, given the lack of mandatory systematic testing. Examples of cases which would have gone uncounted include if a traveller:

- had symptoms but did not go for test
- did not report their travel history
- directly exposes other individuals (fellow passengers, taxi drivers, airport staff etc.)
- is exempt from regular testing as an essential worker
- arrives to Canada via a land border.

RECOMMENDATIONS

There is an urgent need to address key gaps in travel measures at Canada's international borders at a critical juncture in the COVID-19 pandemic. Based on accumulating evidence of best practices, we recommend the formation of a task force to address eight recommendations:

Recommendation 1: Reframe policy as border management through travel measures

We recommend reframing of the issue as "border management", focused specifically on mitigating higher risk travel through proven measures. Terms such as "border closures" and "travel bans", commonly used throughout this pandemic, are misleading because Canada's borders have never been closed and travel has not been stopped.^{18,19} The terms also suggest a prohibition on the mobility of Canadians, which does not align with constitutional rights, and thus invite public push back. Finally, the terms are contradicted by media reports of non-compliance with travel measures by travellers, undermining public confidence in existing policies. Effective communication that resonates with the public underpins border management in best practice countries.²⁰ The dual purpose of border management is to keep travellers safe and protect the wider Canadian population. An evidence-based border management policy would be based on risk assessment that considers outbreak dynamics in Canada and source countries. In time, as mass vaccination progresses, risk management may be based on immunity status of the traveller.

Recommendation 2: Adopt preventive rather than reactive approach

We recommend Canada takes immediate action to strengthen border management from a preventive perspective. Available evidence on responses to COVID-19 shows that early and strong action on border management distinguished countries that have been most effective. Jurisdictions that took a preventive approach put into place measures that seemed like "overkill" but acted to delay/minimize virus importation in January 2020 (Vietnam, Taiwan).¹⁰ Jurisdictions that adopted effective border control measures early on and kept them in place since the emergence of VOCs, have also avoided sustained community transmission (e.g. Hong Kong, Singapore, Taiwan, Australia, New Zealand). The

use of targeted flight cancellations, exemptions on quarantine and testing, and delays in genomic sequencing data mean that Canada's response is more reactive. As a result, VOCs remain able to arrive and spread at community level under current travel measures. For border management policy to minimize SARS-CoV-2 importation including VOCs, travel measures need to be implemented pre-emptively.

Recommendation 3: Strengthen risk assessment data and methods

We recommend a task force take immediate action to strengthen risk assessment methods for informing border management. This will include improved public access to appropriately detailed and standardized data (e.g., how many travellers are testing positive by point of entry, stage of journey, level of compliance with quarantine, quality of contact tracing). Risk assessment should be conducted to identify existing weaknesses in the screening, testing and quarantine of international and domestic travellers that need to be addressed. In time, a large-scale review of national-level data collection and sharing during public health emergencies is needed. Ultimately, strengthened risk assessment will better inform policy decisions and ultimately increase the effectiveness of border management.

Recommendation 4: Address limited capacity to achieve best practices

We recommend Canada address its limited capacity to align border management with best practices by increasing disincentives to travel abroad during the coming summer months. Increased vaccination rates will understandably encourage increased mobility. There is considerable pent-up demand for overseas travel and reports of bookings suggest substantial numbers plan to travel. However, at current levels of international arrivals, it is impractical to implement known best practices to prevent importation of VOCs through travel (i.e., 14-21 day hotel quarantine). Disincentives may include increasing the length of mandatory hotel quarantine, extending hotel quarantines to arrivals by land, and additional surcharges to cover screening and processing. Rationalizing land border crossings, and designating remaining crossings for either essential and non-essential travellers, will create a further disincentive and enhance capacity to apply stronger travel measures. Finally, technology-based tracking systems should be considered to enable travellers to quarantine at home with enhanced enforcement.

Recommendation 5: Integrate border management across different levels of government

We recommend the adoption of an integrated approach to border management which deters non-essential travel, maximizes virus detection, and minimizes onward transmission linked to travel across both national and interprovincial borders. While border management should ideally focus on international borders, coordination and coherence across all government levels is critical, particularly given periodic breaches in measures at the international border. When cases and new variants slip through travel measures at the international border, domestic travel measures are required to prevent further spread and impact in different regions of Canada. Provinces/territories and municipalities are not administratively (or legally) designed to manage hard borders and are thus struggling to do so individually with a few exceptions. Furthermore, variation in practice between provinces/territories means varying degrees of effectiveness but also mixed messaging, confusion, and potentially undermining public trust in official advisories and orders.

Recommendation 6: Apply travel measures near universally until better risk assessment available

We recommend near universal application of mandatory testing and quarantine measures until risk assessment is strengthened. Evidence from best practice countries shows that border management measures applied to all travellers, regardless of point of entry (land, air, sea), purpose of travel (essential vs non-essential) or point of departure (e.g., hot spots), are most effective at reducing virus importation and spread. Categories of exemptions should be re-evaluated based on risk assessment, allowing for as few exemptions as possible under other criteria. Effective border management requires minimizing differential treatment that results in loopholes, workarounds, and exemptions. Universal application also builds public trust in border management and increases perceptions of fairness.

Recommendation 7: Vaccinate small categories of travellers

We recommend that vaccination be offered immediately to certain remaining categories of travellers that are unable to adhere to mandatory quarantine upon entry into Canada when carrying out their duties (e.g., truck drivers, flight crews, sea crews). For these limited selected travellers, vaccination and then rapid testing should be applied to manage public health risks from their travel. In this way, application of travel measures will be risk-based rather than defined by employment status or other non-risk-based criteria.

Recommendation 8: Lay the foundations for easing travel restrictions

We recommend that Canada's border management be strengthened in ways that underpin the eventual easing of travel restrictions. Mass vaccination within Canada and worldwide will enable risk assessment of travellers based on immunity status. Testing and quarantine requirements would then be applied based on proof of immunity through vaccination, proof of immunity through infection, or non-immunity. Many countries are now negotiating potential systems of immunity certification for international travel. Negotiations to re-open the Canada-US border are also expected in upcoming months.²¹ Canada's participation will depend on building the capacity now to effectively administer new border management requirements by air, land, and sea. Addressing key gaps described above is a critical component of building this capacity. This will allow a risk-based approach for re-opening the border to selected travellers that can be expanded over time. Without strengthening existing measures, the importation of new infections including VOCs is likely to undermine vaccination gains, set back reopening and delay economic recovery.

Pandemics and Borders Project

The *Pandemics and Borders Project*, funded by the New Frontiers in Research Fund for two years, is analysing the effective use of cross-border measures by all countries during the COVID-19 pandemic. Composed of researchers based at Simon Fraser University, University of Hong Kong and University of Maryland, our international and multi-disciplinary team is conducting a diverse range of studies to understand border management during the pandemic. These include analyses of a global public health and social measures dataset; systematic reviews of available evidence of the effectiveness of cross-border measures; analyses of genomic sequencing data to identify potential impacts of travel restrictions; and comparative case studies of decision-making.

For more information about the *Pandemics and Borders Project*, please contact Project Coordinator Julianne Piper (julianne_piper@sfu.ca) or visit our website at: <https://www.pandemics-borders.org/>

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