Covid-19 Vaccine Hesitancy Policy Tools in Western Canada

by

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B. A., University of Victoria, 2019

A Master's Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of

MASTER OF ARTS

in the School of Public Administration

Supervisory Committee

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Abstract

Canada's four western provinces largely converged in implementing Covid-19 vaccine hesitancy and uptake policy tools. This thesis analyzes these tools and focuses on vaccine mandates, vaccine passports, and related policy tools. The method applied was data analysis, and two frameworks, a policy tool framework and a vaccine hesitancy framework, were applied. Using these, information was interpreted from two sources of grey literature, government websites and news media articles published from late 2020 to early 2022. All four western provincial governments were found to substantially adopt agreed upon recommendations from scholars in the fields of public health, public health communication, and vaccination. Manitoba was most successful in adopting these measures, followed by Saskatchewan, but counter to expert recommendations, Alberta implemented extensive financial inducements to improve vaccination uptake. While BC obtained the highest vaccination rates, it was the only province of the four that did not provide an option of testing in lieu of vaccination, a decision by the Minister of Health. This was the case for employees in its public service agency, its healthcare sector, or for residents in general regarding its vaccine passport. Vaccine passports and vaccine mandates raised concerns about informed consent. This exhibited a clash between principles of governance involving the legitimate use of coercion, and how informed consent in medicine requires the absence of coercion. This thesis argues that, in some cases, these actions violated the Charter-protected right to bodily integrity. These concerns implied one of two requirements regarding vaccine passports and vaccine mandates: either a clear expression of specific risks proportional to their coercive force as justification, which was not forthcoming; or mitigation of their coercive force, which testing in lieu accomplished. Therefore, three of the western provinces substantially met the ethical requirements implied by their vaccine passports and vaccine mandates by implementing the mitigating option of testing in lieu. Yet based on the criteria as established in this thesis, BC did not meet these ethical requirements.

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List of Acronyms

AHS: Alberta Health Services

BC–CDC: British Columbia Centre for Disease Control

BCPSA: British Columbia Public Service Agency

CVD: Cardiovascular Disease

CCLA: Canadian Civil Liberties Association

HCP: Healthcare Practitioner/Provider/Personnel/Professional/Worker

- Practitioner (Almojaibel et al., 2022)
- Provider (Lin et al., 2021)
- Personnel (Çiftci et al., 2018)
- Professional (Attwell et al., 2019)
- Worker (Verger et al., 2021)

NACI: National Advisory Committee on Immunization (Canada)

PHAC: Public Health Agency of Canada

POEC: Public Order Emergency Commission

REP: Restrictions Exemption Program (Alberta)

SHA: Saskatchewan Health Authority

US–CDC: United States Centers for Disease Control and Prevention

VU: Vaccine Uptake

VH: Vaccine Hesitancy

WHO: World Health Organization

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Acknowledgements

Thank you, Dr. Sean Chester, for being the Chair of my Defense Committee.

I am incredibly grateful to Dr. Kim Speers for taking me on as my supervisor, your wonderful support, and when needed, for getting me back on track in your ever so gracious way.

Thank you very much to Dr. Lynne Siemens for being my second reader, and to Dr. Julie Williams also for being my second reader, prior to the end of your contract with UVic.

To Dr. Andre Smith, many, many thanks for guiding over method and methodology, and later, for being my external examiner and helping me improve the final version of my thesis.

I am deeply indebted to Dr. David Scott. I have enjoyed your classes, you helped my application for this degree, and as an undergrad advisor, you suggested I get a minor in applied ethics, which, in a circuitous way, put an MPA on my radar.

Many thanks to Dr. Margaret Penning. You supported my application for the MPA program, and you also significantly contributed to my understanding of long-term health.

I am sincerely grateful to Dr. Eike-Henner Kluge for challenging the way I think, especially when it comes to ethics. I apply this knowledge almost daily.

I would also like to express my gratitude for Dr. Bernard Henin. You first taught my brother, then me, and you continue to demonstrate how critical thinking is linked to being a good citizen, and I am glad we see each other at the Y regularly.

I am fortunate that every single of the many post-secondary teachers I have had—no exaggeration—has been both caring and highly effective as an instructor. Thank you to Dr. Francis Adu-Febiri, Sandy Bannikoff, Dr. Singh Bolaria, Dr. William Carroll, Dr. Daniel Fridman, the Honourable Randall Garrison, Dr. Garry Gray, Dr. Thomas Heyd, Dr. Taneli Kukkonen, Bev Lenihan, Dr. Colin Macleod, Dr. Martha McMahon, Dr. Justine Noel, Megan Shelstad, Karen Shirley, Dr. Scott Woodcock, Dr. Bill Wong, and Dr. Min Zhou.

Thanks to my brother, Jason, for always being intellectually engaging; to my dad, Rama, from whom I largely inherited my temperament; and to them both for enduring the extreme strain I posed to my family in days now long past. I'd like to acknowledge Nova Osborne and Nabil Bassal, two good friends, both with deep philosophical bents and with whom have shared with me many insights, observations, and most of all, a great deal of hearty laughter. I would be remiss not to mention my former coworkers, Marie-Lou Gendron, Mike McCormick, Matthew Baker, Margaret Halabura, and Nigel Massey; you all encouraged and supported my efforts in various ways, both at school and professionally, and helped me through being targeted by a bully of a boss. Last, thanks to the entire Uni 101 family, those who keep it running and its many program participants, for reminding me that education must not only include people in positions of relative privilege, that good ideas come from many places, and that people are complex, multidimensional, and to see through the rough edges to behold the diamonds.

Dedication

This thesis was far more work than it ever should have been, partly because of workplace bullying. This is ironic because I became a shop steward many years earlier to defend coworkers who were the targets of another now long-gone bully. In those early years at that not-for-profit organization, work was rewarding. Yet the onset of me being the target of bullying from two senior staff members—including discrimination against me and others—coincided with my enrollment in the Public Administration Graduate Program at the University of Victoria. This allowed me to gain a deep understanding of some of the internal challenges faced by such organizations, because as I was learning about these, they also formed part of my experience. While I was ultimately fired for "just cause," I carry those lessons forward.

My wife, Moira, gave me the time and space I needed to work on this project, but mostly, she was there to share the parts of life that are most worthwhile. Her efforts steadfastly pursuing her passions, despite the many directions in which she is pulled, kept me honest and was a major source of inspiration, but I told her too seldom. The effects of Covid-19 policy responses hit her especially hard in all parts of her life. Perhaps our biggest struggle has been how the increased stress lowered the bar for psychological processes rooted in family-caused adverse childhood experiences. This made me yet more sensitive to how others have had similarly challenging past experiences causing them harm; and it made me even more grateful for my parents who gave me a home environment of emotional stability. Moira's many contributions include being a remarkably good listener for my ideas and observations, and she gave me critiques and insights. Some of these made their way into the present attempt to create an academic product of value.

As for my Mum, Sandra, she has struggled with chronic progressive multiple sclerosis now for a quarter century. Her ability to adapt and to find worth in the small things—a valuable reminder for me to do the same—has meant she has outlived life expectancy predictions by her neurologist by more than a decade. She has been a consistent cheerleader in my corner all along, and despite nowhere near being financially wealthy, she made sure I stayed afloat many times along my educational journey through her generosity. When I was a kid living at UBC's Family Housing, I remember her working on her BA late into the night. If she could care for two boys while completing a degree, I could surely get my Master's.

Last, I should mention my Mum's former long-time care aide, Emefe "Pinky" Condor. Only in her early fifties, days before Christmas of 2022, cancer sadly got the better of her. She and her family became intertwined with my family long ago, an enduring relationship; and for years now, my Mum's primary care aide has been Pinky's brother, Doi. Many friends have passed in the last decade, most because of the drug toxicity epidemic, but none has impacted me more than Pinky's passing. To my family, she contributed so much. The debt I owe to these three women is immeasurable. I will pay it forward as best I can, so to them, I dedicate this thesis.

Chapter 1: Introduction

Introduction

This thesis describes and analyzes the various policy instruments related to Covid-19 vaccine hesitancy (VH) implemented by Canada's four western provinces. For the purpose of this thesis, VH is defined as the "delay in acceptance or refusal of vaccination despite availability of vaccination services" (MacDonald, 2015, p. 4163), as related to Covid-19 vaccines. The use of Covid-19 policy tools, VH related or not, led many people to support the policy tools, but there were others who expressed frustrations towards provincial authorities in British Columbia (BC), and a prime example was the BC Public Service vaccine mandate (British Columbia Public Service Agency, n.d.). While people making these claims had often only made superficial, insufficient assessments of the situations facing these authorities, the motivation to pursue the research for this thesis was to explore whether such claims had any merit.

In early 2020, the public began to hear about Covid-19 cases in Canada and for many people, it caused pervasive fear amongst the general public as shown by extensive research measuring such fears (Ahorsu et al., 2020, p. 1; Mertens et al., 2021, p. 1; Pakpour et al., 2020, p. 524) as reported by Canadian news media (Kingsmith & Ciaschi, 2020; Warnica, 2020) and by StatsCAN (2020a). By Spring 2020, the focal means of reducing the fears and resolving the pandemic was the future hope of vaccines (Kemp, 2020; Thanh Le et al., 2020) and in late 2020, those hopes first materialized (Griffith et al., 2021, p. 3; Health Canada, 2020). As vaccines were approved and distributed, they quickly became the core tool in fighting the pandemic, which was demonstrated, for example, by BC's Restart Plan (Government of BC, 2021b), as well as Alberta's Open for Summer plan (Babych, & Smith, 2021; CBC News Edmonton, 2021). The emergence of vaccines implied a key challenge though, since governments noted they would need to attain vaccine uptake sufficient to reach herd immunity,[1] or at least high enough that Covid-19 would no longer require broad restrictions on everyday activities.

The array of policies and policy instruments related to the pandemic in jurisdictions around the world were diverse, copious, and intra- and inter-jurisdictional coherence were an additional challenge to governments attempting to address Covid-19 (see Maggetti & Trein, 2022; OECD, 2020, for discussions on addressing this issue). Nevertheless, because of the history of anti-vaccine movements (see The Context of Other Pandemics and Comparisons with Other Diseases section in Chapter 2 for details), governments were aware that if vaccines were to be the cornerstone for resolving the pandemic into an endemic phenomenon and beyond, they would meet resistance from an indeterminate minority. Indeed, weeks before December 2, when

[1] A commentary on terminology by Dudley et al. (2020) published while Covid was widely believed to still only be in China noted how *herd immunity* may be offensive to some, likening humans to cows, and terms like *community immunity* or *community protection* are better and more accurate, but these are not used in media discourse; however, the matter of accuracy is debatable: Most humans ignore how human tribal origins are equivalent to herds, not the much smaller social forms of packs, which are typical of carnivores and not herbivores, like humans.

the United Kingdom became the first jurisdiction to approve the first-ever Covid-19 vaccine (Ledford et al., 2020, para. 1), in a journal article about VH in Saskatchewan, Muhajarine et al. (2021) argued that "reaching sufficient coverage of the population…[was] likely to require targeted efforts to convince those who are hesitant or unsure" (pp. 15–16).

Purpose of Thesis

The purpose of this thesis is to examine how each of the western provinces (Manitoba, Saskatchewan, Alberta, and British Columbia) attempted to influence maximal Covid-19 vaccine uptake (VU); how through various policy instruments, they addressed vaccine hesitance or resistance; and how well they followed the recommendations of scholars with expertise in vaccination and public health. This latter point is a proxy for a thorough quantitative analysis of the most effective approaches, as such an analysis was impracticable for one person. It also seeks to address the legal and especially ethical gap in knowledge identified by Bardosh (2022) with respect to Covid-19 policies in general, including those regarding vaccines (p. 7), and does this by providing such an evaluation of the vaccine passports and vaccine mandates.

Policy tools are " the techniques through which governments generate, evaluate, and implement policy options" (Capano & Howlett, 2020, p. 1); or the "means whereby the problem is to be addressed and the goals achieved" (Pal, 2014, p. 9). For this thesis, a policy tool refers to the ways governments sought to address VH, and the focus of this thesis is on vaccine passports and vaccine mandates. Other notable examples include the ways governments made vaccines readily available at convenient times and places to lower access barriers, such as making vaccinations available at mass vaccination sites and later, at local pharmacies.

Research Question and Thesis Statement

Primary Research Question

What were the different policy instruments used to influence Canadians who were hesitant or resistant to becoming vaccinated against Covid-19 in the four western provinces?

Secondary Research Questions

The following secondary questions were asked to support the primary one:

- How well did each province follow expert recommendations?
- What were the differences and similarities in implementing policy tools?
- How were subgroups with relatively low vaccine uptake targeted?
- How did Covid-19 and Covid-19 VH challenges compare to pre-existing and concurrent challenges related to other leading causes of death?
- How was the Freedom Convoy relevant to understanding the challenges in addressing VH?

Thesis Statement

The four western provinces adopted many of the recommendations of academics with expertise in vaccination, public health, and public health communication. Because the provinces were generally successful in addressing VH, they all attained relatively high vaccination rates. Yet each province, to a varying degree, struggled in developing and implementing VH policy tools and the most profound of these was the absence of any alternative to mandatory vaccination for its public servants or for its vaccine passport in BC. In this thesis, it will be argued that policy alternatives to vaccination mitigated the coercive policy force of requiring vaccinations for certain activities. Further, the other three western provinces developed and implemented vaccination policies in a more inclusive manner than BC by providing the option of regular Covid-19 testing in lieu of vaccination; however, no province developed and implemented VH policy instruments in an optimal manner, which could have been achieved by allowing for testing in lieu in all cases and providing this at no cost to citizens or scaling user-fees to income.

Thesis Scope

Research for the analysis was limited to the period beginning December 9, 2020, the day the first vaccine was available in Canada, and ending February 15, 2022, although contextual information outside the analysis proper was not limited to this period.[2] There was a great deal of government uncertainty about how to deal with Covid-19 during the early phase, but given how the initial focus was on managing and mitigating the emergent pandemic, the emphasis of this analysis is on the period after vaccines were announced. The presence or absence of circuit breakers or lockdowns, various mask mandates, quarantine periods, or limits placed on the number of people allowed in indoor or outdoor settings were therefore excluded. Indeed, these *mitigation* and *suppression strategies* were important (US–CDC, 2021a, para. 3; Yang et al., 2020, p. 1), and worked in tandem with VU and VH policy instruments, but the focus was the latter, which one might call *resolution strategies*. The analysis end-date was chosen because of thesis timeline considerations, but the bulk of relevant VH and VU policy instruments fell within this 14-month period. The end date fortuitously coincided substantially with what was dubbed the "Freedom Convoy" (Lamoureux, 2022; Lapierre, 2022; Osman, 2022; Pringle, 2022), which is the topic of The Response to the Freedom Convoy section in Chapter 6.

Furthermore, to manage the scope of the research design framework, booster shots (i.e., third and fourth doses and beyond) were excluded from the analysis because they did not contribute any additional substantive understanding of VH and the related policy tools. Hesitancy or resistance to booster shots would be appropriate for future research though, as these matters continue to evolve.

[2] Note: Many government websites had no date, so these were included.

Positionality Statement

Going into my thesis defence, my positionality statement was far more extensive than the current one. The purpose of such a statement is to provide insight as to how one's experiences affect one's academic work. While the previous version did this effectively, it presented privacy concerns. The following represents but a small fraction of that earlier statement.

I am at the cusp of Gen X and Y, a cisgender biracial male, from a middle-class background. My mixed ethnicity has led to me being repeatedly mis-categorized in various ways, an experience core to my identity. As an adolescent and young adult, I sometimes struggled with this issue of identity, but as I grew, I came to recognize this as an asset: Rather than feeling I had no group to belong to, I realized that I was often easily granted "honorary" members status to various cultural groups, making my circle wider.

I have had many experiences and gained much knowledge that combine to make me acutely aware of many abuses of authoritative power. I am more concerned than the typical good citizen about restricting personal autonomy and claims to legitimate authority, so I appreciate skepticism about Covid-19 policies from multiple and sometimes conflicting viewpoints. While society continues to be largely divided, I see the nuances here—on most social and political matters—and I dislike the simplification and polarization of issues which are complex. To wit, Berger (2020) claims that, in terms of adult development theory, roughly 60% of adults do not even meet the criteria of adulthood: they have a coarser worldview and are essentially adolescents.[3] Kegan and Lahey argue that is an underestimation for the general population, because the samples are "skewed toward middle-class, college-educated professionals" (sec. "Shifts"). Political polarization caters to coarseness, not nuance, and is thus immature, and responses to Covid-19 are often polarized. My motivation in the concluding chapters of this thesis is to examine the ethical nuances. I seek to shine light on the details to which we, as citizens, should be paying attention. Fundamentally, I am motivated out of a sense of intellectual and moral responsibility.

Organization of Thesis

The remainder of this thesis begins with a chapter that provides background, the context in which Covid-19 policy tools for addressing VH were introduced. This includes a brief history of VH prior to Covid-19 and the emergence of variants as vaccines became widely distributed and mass numbers of Canadians got their first and subsequent vaccinations. It describes where Covid-19 fit in the profile of the leading causes of death in Canada, and how intentions to get vaccinated against Covid-19 evolved in the months before and in the early months after any

[3] See Berger (2020) for an illuminating book on the topic, and she initially makes this point from pages 18 through 23, but elsewhere too. With data to bolster her claims, she argues that maturity, the ability to see things from multiple perspectives and the vantagepoint of others, and capacities for nuances are positively correlated.

vaccines had been approved, concluding with a description of vaccination rates through to February 2022.

Chapter 3 describes how the literature review was conducted, which has two components: the first is a literature review on policy instrument typologies and the one which was selected, and the second part is a literature review on the nature of VH. This latter element provides the categories for the ensuing analysis that formed the core research for this thesis.

Chapter 4 is on methodology and methods, with a focus on the nature of the method used for the core research, document analysis. It goes on to describe exactly how the document analysis was done. The chapter ends by noting some limitations of this thesis.

The fifth chapter presents the research findings which resulted from the analysis. The first section describes the many policy tools that all four provinces used; this is followed by a section on the most salient policy tools, the vaccine passports and vaccine mandates, which is then followed by a section describing the major differences between provinces. The end of this chapter provides a selection of what appeared to be tools that were unique to each province.

Chapter 6 is a discussion and analysis. It begins by answering the research question, along with an assessment of the policy instruments used by each province. Thereafter, the focus is on the matter of justification for the vaccine passports and vaccine mandates, followed by a discussion on the issues relating to the Freedom Convoy, a phenomenon which became highly politicized—even getting international attention—that emerged largely in response to vaccine mandates and vaccine passports.

The final chapter continues with the themes from the previous one, summarizes this thesis, and provides some concluding remarks. It acknowledges the many commendable efforts the provinces made in addressing VH, such as the many ways they made getting vaccinated easy. Nevertheless, criticisms are also offered, and these include matters related to the absence of a mechanism to mitigate the coercive force of specific vaccine mandates and the province-wide vaccine passport in BC, along with criticisms of the federal government's handling of the Freedom Convoy. Both issues highlight concerns around legitimacy of governments and the policy tools they implement; and further concerns citizens should have for democracy and its potential deficits, not merely abroad, but right here in Canada, and even in this very province of BC.

Chapter 2: Background on Covid-19

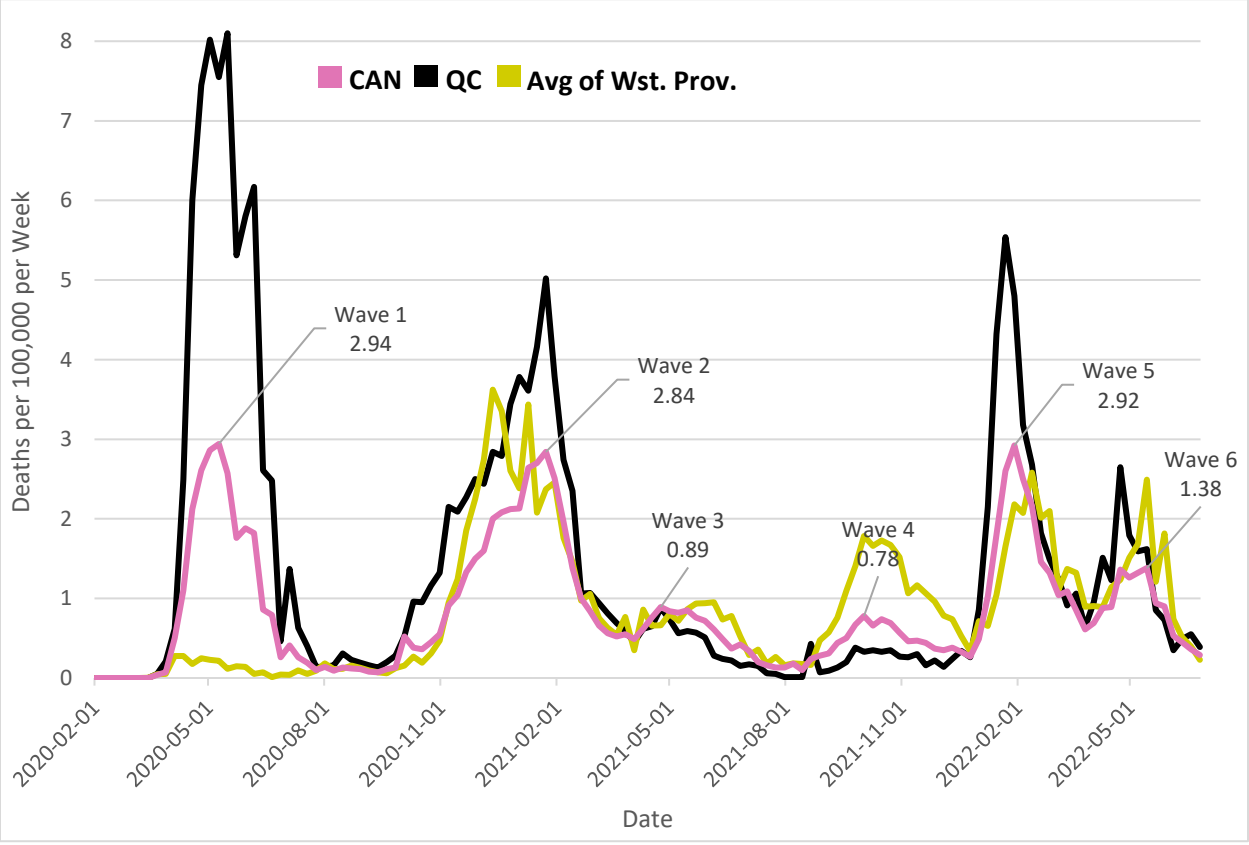
Introduction

This chapter provides context for the emergence of the pandemic and starts with a history of Covid-19 mortality in Canada. The second section explores how Covid-19 fits with respect to other diseases, both chronic and infectious. Related, section three highlights drug poisonings, the other epidemic. In BC, this public health emergency was declared in 2016, four years before Covid-19 and which remains active; this was the third leading cause of death in the period of analysis, with Covid in forth; and much like chronic disease mortality, this shows no signs of abating (BC Coroners Service, 2023). Vaccination intentions and uptake, two distinct concepts, are discussed in the subsequent section. The last section explores the provinces vaccination rates.

Overview of Covid-19 Mortality in Canada

There were many waves of Covid-19 but looking only at national mortality rates does not reveal the geographic heterogeneity. Canada's highest mortality was in the first wave, in early May 2020, before vaccines; however, this essentially reflected the scenario in Quebec, which accounted for roughly 60% of deaths at that time (see Figure 1).

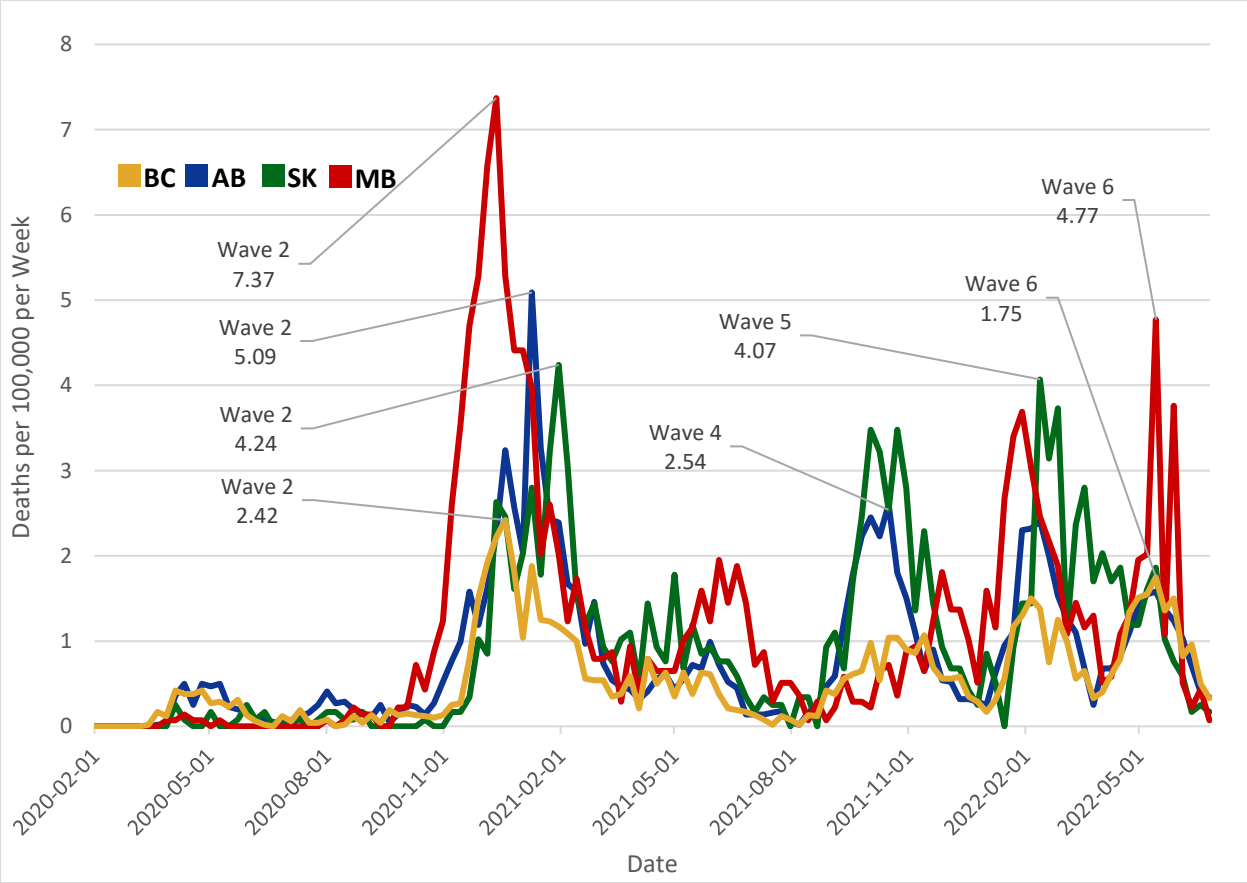
Figure 1 – Deaths per 100,000 per Week in CAN, QC, & 4 Western Prov.



Note. Graph generated using downloaded data set from the Public Health Agency of Canada (PHAC, n.d.-b).

Canada-wide, waves 2 and 5 were nearly as deadly as the first, and they peaked in late January 2021 and late January 2022, respectively. The fourth wave is surprising, since by then, vaccination rates among those concomitantly eligible were high. For each of the western provinces, it was the second wave that was deadliest, which occurred during the early stages of vaccine distribution and before mass vaccination programs. The second deadliest wave in Alberta was wave 4, which reached its zenith in mid-October 2021; wave 5 in Saskatchewan, which peaked in mid-February 2022; and wave 6 in BC and Manitoba, with apogees in mid-May 2022 (see Figure 2). Death rates in these later waves were much higher than what most Canadians probably expected when nearly 90% of those eligible were vaccinated, by November 2021 (N. Little, n.d.-c). These deaths can be largely traced to insufficient VU, highlighting the importance of policies related to bolstering such uptake.

Figure 2 – Deaths per 100,000 per Week in each Western Prov.



Note. Graph generated using downloaded data set from the PHAC (n.d.-b).

The Context of Other Pandemics and Comparisons with Other Diseases

A central challenge for using vaccines as the primary tool to fight the pandemic was to reach rates high enough so that the Covid-19 pandemic would transition to being endemic.[13] This implies that the basic reproduction number, "the average number of secondary infections produced by a typical case of an infection," also known as R-naught or R_0, falls below 1 (Barratt, et al., 2009, sec. "Epidemic theory"). Many jurisdictions implemented a variety of policy instruments to minimize the negative consequences of Covid-19 in Canada and throughout the world (Desson et al., 2020, p. 430; Hale et al., 2021; Toshkov et al., 2021, p. 1) but as of mid-2022, vaccines were the primary means for resolving Covid-19 as a pandemic (see BC Ministry of Health, n.d., "B.C.'s response to Covid-19" as an example of the focus on vaccines). This made policy tools directly or indirectly influencing VU and VH extremely important for any government attempting to address Covid-19 effectively, including the four western provinces.

While vaccines became the cornerstone for resolving the pandemic aspect of Covid-19, there were many related challenges to using vaccines. Among these were the rate of vaccine production, the distribution of supply, equity concerns within and between countries (BBC News, 2020; Venkatapuram, 2020, pp. 315–316, 318–319), and the fast-tracking of research and regulatory approval (Mahase, 2020; Pai et al., 2021). Even if all these barriers were overcome, there were predictions this might not succeed without eventually crossing the threshold for herd immunity, as Chevallier et al. (2021) noted when they said great efforts "might end up being wasted in the last mile…. [making sure] the solution reaches its target" (p. 331), in a journal article about vaccinating the dwindling minority of unvaccinated people.

The Compliant Majority and Hesitant Minority

In a Lancet comment article published as the first vaccines were approved in Canada, Burgess et al. (2021) distinguished between people who express VH, and those "wholly opposed to vaccination, anti-vaxxers" (p. 8). While the anti-vaccine movement's proximal origins can be traced to the late 1990s false claims linking vaccines and autism (PBS NewsHour, 2015; Wakefield, 1999), its ultimate origins may go back to compulsory smallpox vaccinations of mid-19th century England (Durbach, 2005, pp. 26–27). It was therefore clear to governments that a small minority would oppose vaccines vociferously merely because they "are" vaccines, but this population was small enough that governments probably believed that they were not needed to reach herd immunity.[14]

Initially, governments did not need to design policies targeting this group, as they would better spend resources on the compliant majority. This compliance was reflected in the early stages of the pandemic response (Wang et al., 2021, p. 240), and suggested by the rank order in Covid-19 vaccination rates of the Anglo-American countries in early 2022: Canada, Australia,

[13] See Dicker et al. (2006/2012) for definitions of these and related terms (p. 1/72).

[14] The threshold for herd immunity is the percentage of the population needed for $R_0 \leq 1$ (Barratt, et al., 2009, sec. "Epidemic theory").

New Zealand, the UK, and the US (Mathieu et al., 2021, fig. Share of people vaccinated against Covid-19, Feb 15, 2021).[15]

Indeed, Canadian provincial governments aimed many policy instruments at this compliant majority, such as the systems designed to facilitate the vaccination process: these included online or telephone appointment bookings (Kotyk, 2021), centralized mass vaccination centres (Cheung, 2021; McKenzie-Sutter, 2021; Reuters, 2021), and especially early-on, on-site deployment at long-term care facilities (Miller, 2021b, sec. "Fragmented"). Some people, however, entirely refused vaccination, which Iyer et al. (2022) called the (absolutely) "unwilling," in their research about Covid-19 VH and monetary incentives. Nevertheless, between the compliant majority and the unwilling minority were Canadians who were not firmly opposed to, but remained skeptical of, Covid-19 vaccines to the point of hesitancy and resistance.

The Emergence of New Variants

The Delta variant, however, emerged simultaneously with the first vaccines and presented a serious complication (Galloway et al., 2021; Jüni et al., 2021, sec. "Percentage"; Theodore, 2021). R_0 is a function of how easily an infection spreads (Barratt, et al., 2009, sec. "Epidemic theory"), and in a frustrating turn, the Delta variant spread more easily than those which emerged previously (US–CDC, 2021b, sec. Infections and Spread). Where herd immunity may have been achievable with roughly 70% of Canadians vaccinated, not just the concurrently eligible, the Delta variant pushed this well over 80% (Duong, 2021; McNamara, 2021), and perhaps 90% to be on the safe side. Some people, however, even claimed the Delta variant made herd immunity impossible (Grover, 2021).

By late June 2021, Delta became the dominant variant in Canada (PHAC, n.d.-b, fig. 2), and globally at the same time (O'Donnell & Mason, 2021), and this magnified the importance of designing policy instruments to effectuate vaccine acceptance. Canada signalled another pandemic shift on November 28, then prohibiting entry from seven African countries (PHAC, 2021b), which expanded to 10 on November 30 (PHAC, 2021c). This was in response to Omicron, which by Dec 27, had fast become the dominant variant in Canada (Mathieu et al., 2020, fig. SARS-CoV-2 sequences by variant, Dec 27, 2021), a sub-variant of which remained dominant through at least mid-summer 2022 (Mathieu et al., 2020, fig. SARS-CoV-2 sequences by variant, Aug 1, 2022).

The Rare Case of Focusing on an Infectious Disease

Something which is rarely discussed in relation to Covid-19 is how atypical it is for infectious diseases, other than the similar flu virus (US–CDC, 2022a), to rank among the major causes of morbidity and mortality in countries with advanced economies (Diaconu et al., 2016;

[15] On February 24, 2022, Australia took the lead, putting Canada in second, but as of Jun 29, 2022, they remained within less than a percentage point of each other (Mathieu et al., 2021, fig. Share of people vaccinated against Covid-19, Jun 29, 2022).

Hacker, 2021; StatsCAN, 2020b). The 2003 Toronto SARS outbreak ultimately killed 44 people in Canada (Rae & Zeng, 2006/2021), yet before Covid-19, this was arguably the most worrisome infectious disease occurrence in recent decades in the developed world, certainly in Canada. It killed 916 people globally, and in rank order, nearly all these deaths occurred in China, Hong Kong, Taiwan, Canada, Singapore, and Vietnam (Department of Communicable Disease Surveillance and Response, World Health Organization [WHO], 2003, pp. 11, 13). For comparison, the mortality difference between the 2003 SARS outbreak and Covid-19 in Canada is an astronomical 989-fold, as of late-August 2022 (PHAC, n.d.-b). The AIDS scare in the 1980s would be the next most recent similar case (Gallup Inc, 2019).[16] Generally, chronic diseases are associated with affluence, are largely problems in countries with advanced economies, and account for most deaths in those countries (Campbell & Campbell, 2006, pp. 178, 198–199, 348; Mattke et al., 2011); but in countries of the global south, the profile of mortality risk from diseased is flipped, and the consequences of chronic diseases are almost negligible when compared to the deaths caused by infectious diseases (Mattke et al., 2011).

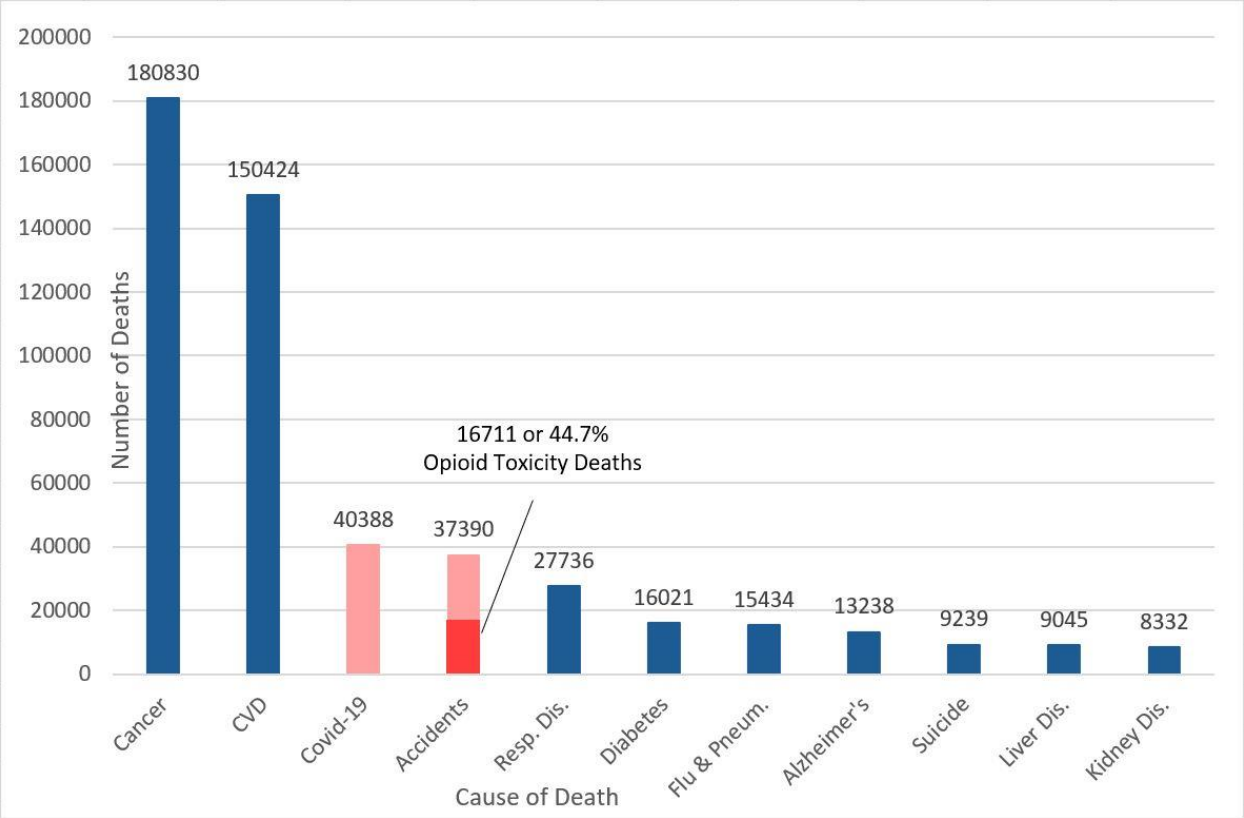
Before the pandemic, chronic diseases accounted for seven of 10 leading causes of death both in Canada (StatsCAN, 2020b), and the United States (Hacker, 2021), the other three in Canada being accidents, flu and pneumonia, and suicides, in that order (StatsCAN, 2020b). Cancer is the leading cause, which will kill about one in four Canadians (S. Lee, n.d., sec. "Chances"), while heart disease is second (PHAC, 2017a). Although the 2003 SARS outbreak may have left a mark on the minds of Canadians, its public health consequences were negligible relative to those chronic diseases. Then along came Covid-19 and suddenly, developed countries' public health focus shifted priorities to infectious disease.

To put this into context, from the first death in March 2020 to May 19, 2022, over 40,000 Canadians died from Covid-19; but in that same period, 181,000 died from cancer, four and a half times more than the number of people who died from Covid-19 (see Figure 3). Moreover, long after the pandemic passes, this massive cancer mortality is likely to persist, something of obvious concern. Covid-19 also caused bed-blocking and delayed healthcare delivery (Søreide et al., 2020, p. 1250), which detrimentally impacted other disease outcomes, such as with cancer (The Lancet Oncology, 2021). Other infectious diseases were also affected by Covid-19, and in a Japanese study, it was demonstrated that, while most such diseases saw decreased incidents from 2020 through 2021—presumably because of widespread restrictions—incidents of roughly a quarter of these diseases increased in that same period (Hirae et al., 2023). Also worth noting, Canadian children experienced much higher levels than expected of non-Covid respiratory diseases in late 2022, and while hypothetical mechanisms have been proposed, this was plausibly a consequence of limited exposure to these diseases caused by the policy response to Covid-19 (Pelley, 2022). Nevertheless, the impact of Covid-19 on other diseases, infectious and chronic ones, is likely to increase all disease mortality in future projections (Roberts, 2021).

[16] Monkeypox emerged as a similar issue in the spring of 2022, but by mid-fall, newly reported cases fell to negligible levels in Canada, and there were no deaths (PHAC, n.d.-d).

Examining Covid-19's rank among the leading causes of death in Canada is illuminating: During 21 months of Covid-19 mortality, from March 2020 through mid-May 2022, Covid-19 ranked third. While cancer and cardiovascular diseases (CVD) have a lock on their leading positions, Covid-19 mortality is relatively minor in comparison, yet, aside from the top two, Covid-19 outranked all others (see Figure 3). In a polarized and largely dichotomized world, it does not neatly fit into the CVD and cancer category, 331,000 deaths combined, nor in the 4th through 11th leading causes, 136,000 deaths combined. The risk someone perceives from Covid-19 might depend on which of these two categories they unconsciously associate it with; there appears to be no objectively correct interpretation if using a dichotomous heuristic, and such bifurcation necessarily always misses nuance.

Figure 3 – Leading Causes of Death in Canada, March 2020 to May 2022



Note. Please see Appendix 5 for details on how these data were obtained.

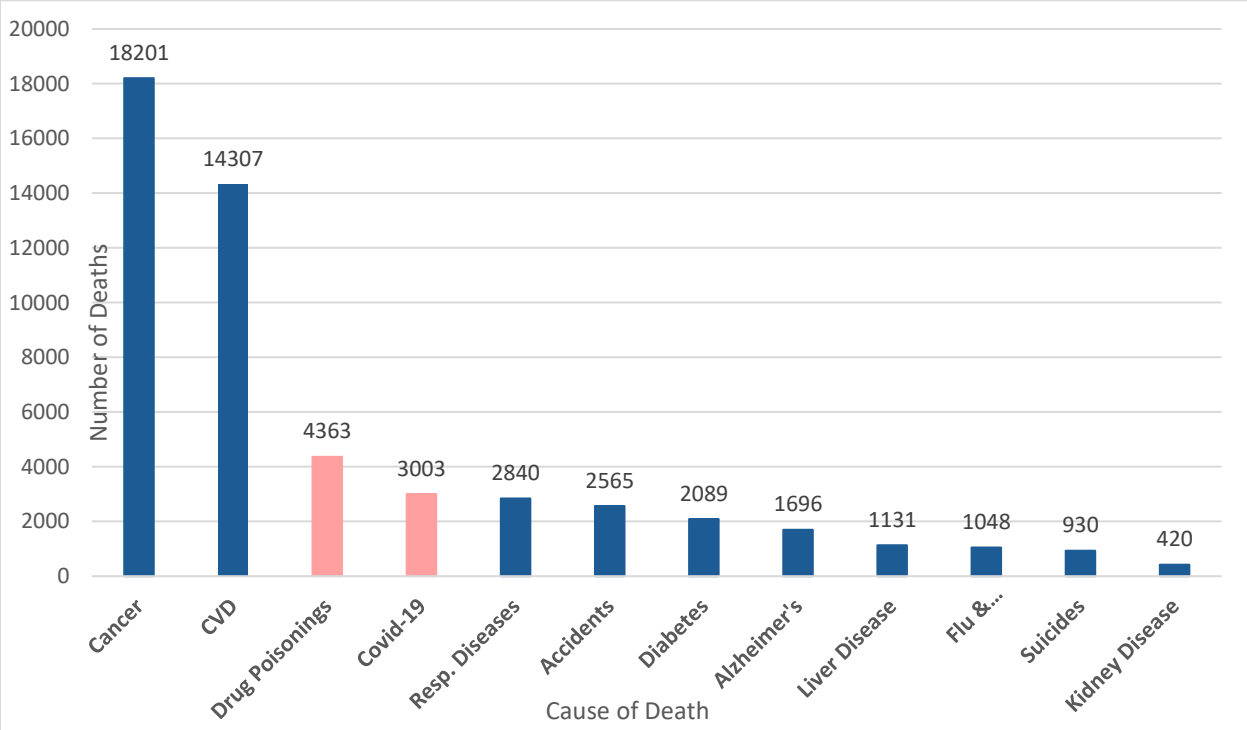
Canadian news media (CTV News, n.d.), various governments, and public agencies provided regular and even daily updates on the number of new cases and deaths from Covid-19 (BC–CDC, n.d.-a; Government of Ontario, n.d.; PHAC, n.d.-b). There appears to be no such frequent reporting for chronic diseases (searching through pages for various diseases demonstrates this, Public Health Agency of Canada, n.d.-c; and is implied in this report from The Council of Canadian Academies, 2015), so clearly, the pandemic disproportionately captured

people's attention. Perhaps it is because of novelty, but this suggests Canadians are far more fearful of infectious diseases than chronic ones. An interesting speculation is that this is partly because of the association infectious diseases have with poor social conditions.[17] Whatever the reasons for the attention garnered by Covid-19, one nuance worth noting is related to BC's ongoing drug poisoning crisis, which is briefly discussed next.

Covid-19 as British Columbia's Second Concurrent Public Health Emergency

It would be remiss to not acknowledge a contextual element largely specific but not limited to BC. On March 17, 2020, BC declared a state of emergency for Covid-19 (BC Minister of Public Safety and Solicitor General, 2020), but this became its second concurrent public health emergency. The first was related to the drug poisoning crisis, which led BC to declare a public health emergency in April 2016 (BC Minister of Public Safety and Solicitor General, 2022, para. 5), which shows no signs of abating (BC Coroners Service, 2022b, p. 4). By mid-2022, the federal government announced a 3-year trial exempting criminal penalties for possession of small amounts of certain illicit substances in BC, effective early 2023 (BC Ministry of Mental Health and Addictions, 2022); and this was consistent with 2018's legalization of pot (Rotermann, 2020, para. 1), reaffirming a shift in policy direction.

Figure 4 – Leading Causes of Death in BC, March 2020 through March 2022



Note. Blue bars represent StatsCAN (2022b) data for BC, 2007 through 2020, to which an MS Excel trend was applied to forecast 2021 and 2022. Deaths per 100,000 were converted to absolute deaths using population data for

[17] See Alsan et al. (2011) for a discussion about the link between communicable diseases and poverty.

2020, 2021, and 2022 (projection) from BC Stats (n.d., 2021, p. 1, 2022, p. 1). 2020 and 2022 were prorated to reflect partial years. BC Coroners Service (2022a) drug poisoning data was prorated to remove March's first week (p. 4). BC–CDC (2022b) Covid-19 deaths data ran through April 2, 2022 (p. 7), rather than March 31, so was prorated to remove 2 days, rather than applying an Excel trend, because the difference would be negligible.

The comparison of the drug poisoning public health crisis to that of Covid-19 shows the seriousness of the former in BC. Beginning with BC's first Covid-19 death and in the two years that followed, there were 45% more deaths from poisoning than from Covid-19 (see Figure 4), not to mention the dramatic difference in years of life lost.[18] No extensive analysis is required to know that Covid-19 elicited a policy response that was scales of magnitude greater. Indeed, the counterfactual case where the policy response to Covid-19 was far less than in reality—like on a scale of the drug poisoning response—would have caused higher mortality and morbidity rates from Covid-19, perhaps far greater, so this comparison is not entirely fair. The imbalance between the two is nevertheless dramatic, and whatever the appropriate policy goal, the two should be substantially similar since each death is the loss of a life of equal value. Last, drug poisonings in Alberta have recently come to rival those in BC, and Appendix 2 provides a brief comparison of drug poisoning deaths in the four western provinces from 2016 to 2021, for additional context. The author of this thesis felt it important to include this, since he has worked on the frontlines of social services for a decade and personally knew dozens of people—four of them friends—who have died from drug poisonings, but not from Covid-19. Not to diminish the consequences of Covid, but to recognize the impact and in memorial of drug poisoning victims.

When it comes to mortality, chronic diseases and drug poisonings are massively challenging to address, but for Covid-19, once vaccines were developed and distribution began, the critical challenge became translating this into people getting vaccinated. Before those vaccines were available but were anticipated, researchers measured people's intentions to get vaccinated. Yet something familiar to social scientists was the gap between proffered intentions and actual vaccination rates, and this is explored in the following section.

Intentions to Get Vaccinated and Actual Uptake

Intentions to get vaccinated were measured months before any vaccines were available. From July 24 to August 7, 2020, Ipsos (2020) conducted a global survey on such intentions, and in the Canadian component, approximately 1,000 individuals were surveyed (p. 6). They found there was a 76/24% split between those who did and did not intend to get vaccinated once a vaccine was available (p. 2). Through a sequence of many cross-sectional surveys from June to November 2020, Owen et al. (2020) established that 65% of Canadians intended vaccination, 15% were opposed, 19% were unsure (p. 2), and these figures remained remarkably stable

[18] Compare a BC–CDC (2022c) report on Covid-19, including deaths (p. 7), to another BC–CDC (2022a) report on drug poisonings to see how deaths from Covid-19 are skewed to people in their 80s, while "40% of all… [drug poisoning deaths involved] 19-39 year old males [alone]" (p. 3).

throughout their period of analysis (p. 3). From July to December 2020, according to several surveys by the Angus Reid Institute (2020), those who would refuse a vaccine was stable at around 15% (fig. 1), consistent with the data from Owen et al. However, Angus Reid reported much lower numbers for those who were unsure, around 8%, but they had a fourth category which was not in Owen et al. (2020), those who likely would get vaccinated but wanted to wait (Angus Reid Institute, 2020, fig. 1). Presumably, these Canadians were waiting for reassurance the vaccines were safe, and this fourth category, which varied from 31% to 38%, might account for the difference between the two series of surveys.

These surveys were done before any vaccine availability in Canada, the first of which was approved on Dec 9, 2020 (Health Canada, 2020), but dramatic restrictions had already been imposed, relaxed, and reimposed on Canadians for months (Canadian Press, 2021a; Dawson, 2021; Vogel & Eggertson, 2020). While both Canada and Israel began vaccinations in mid-December 2020 (Aiello & Forani, 2020; B. Rosen, Dine, et al., 2021), by the end of January 2021, Israel, the early world leader, had given a single dose to 35% of its population (Mathieu et al., 2020, fig. Share of people vaccinated against Covid-19, Jan 30, 2021), while Canada reached only a mere 4% by the start of March (StatsCAN, 2021b, para. 2). By August 9, 2021, however, Canada surpassed Israel in both the percentage of those with two doses, 61.7% and 61.5% respectively, and for those with at least a single dose, 72% versus 66% (Mathieu et al., 2020, fig. Share of people vaccinated against Covid-19, Aug 9, 2021).

Also in the fall of 2020, a StatsCAN (2020c) September survey found that "76% of Canadians aged 12 and older… indicated that they would be somewhat or very likely to get a Covid-19 vaccine" (sec. 3), 11 points higher than Owen et al., but identical to the Ipsos survey. This survey also showed willingness differed by province, with residents of Prince Edward Island at 89%, BC at 82%, and Alberta at 70% (StatsCAN, 2020c, sec. 3), but the data for Alberta were not statistically significant (StatsCAN, 2021a, para. 5). A matter of concern, while Canadians with chronic health conditions are at far more risk of serious outcomes from Covid-19, in September 2020, they were no more willing to be vaccinated than those without such conditions (StatsCAN, 2020c, sec. 4).

As the first few months of vaccination proceeded, however, the number of "Canadians aged 12 and older [who] reported that they were somewhat or very likely to get" vaccinated rose to 82% by February and 88% by April 2021 (StatsCAN, 2021b, para. 1). Regional differences also shifted, with Quebec then reporting the highest willingness at 92%, closely followed by the Atlantic provinces at 91% (StatsCAN, 2021b, sec. 2). Encouragingly, the percentage of Canadians with chronic health conditions who were willing to be vaccinated rose even more than those without such conditions, and climbed from 84% to 88% in the first four months of 2021 (StatsCAN, 2021b, sec. 6).

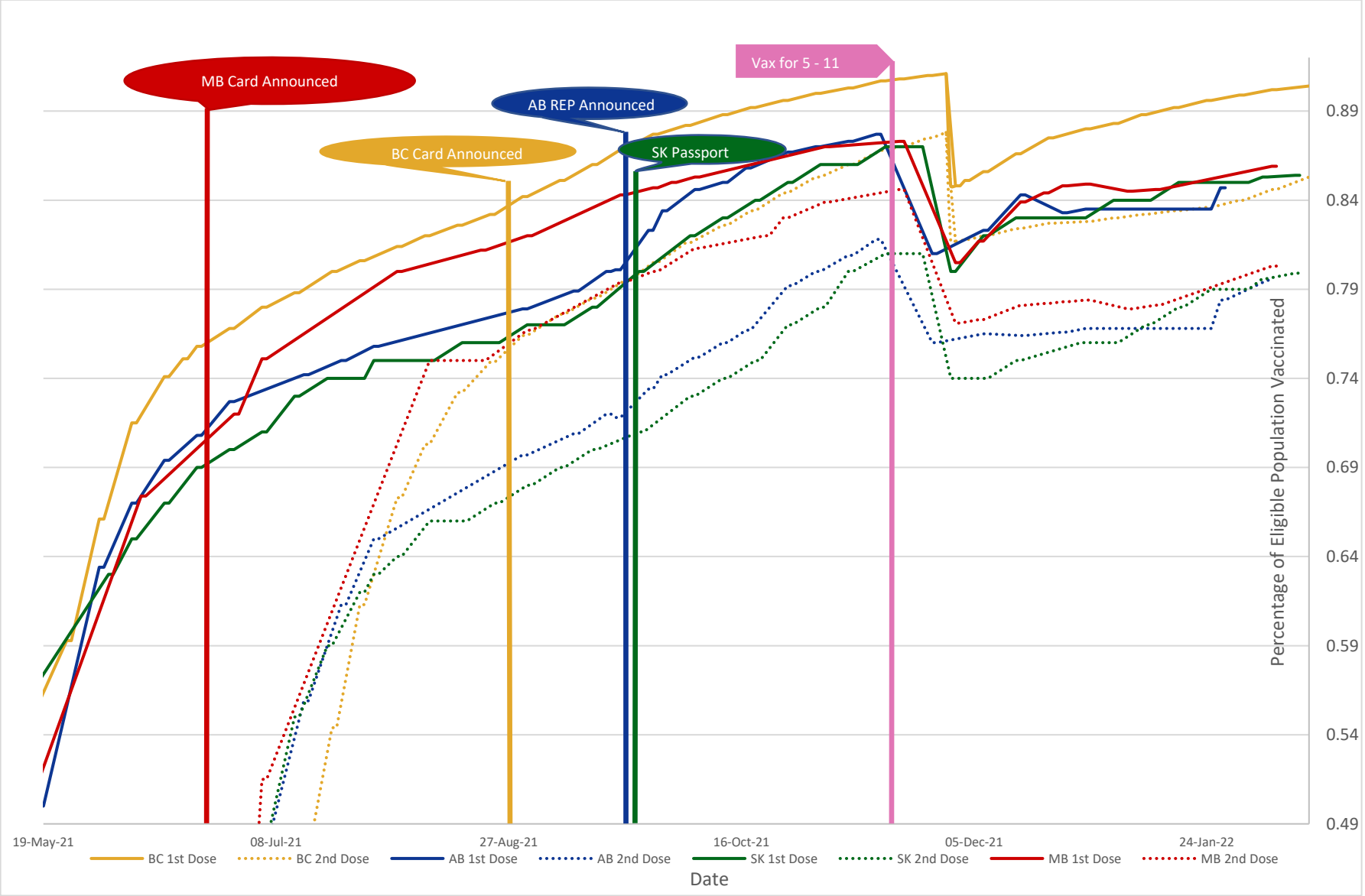
The Angus Reid Institute (2021a) released survey data in mid-May on VH in Canada. This showed rates of VH by province for January 29, April 8, and May 17, 2021, and demonstrated the same trend noted above, but with nuance: Across the three intervals, no

province exceeded 26% of people expressing VH, except for Alberta, which was at 45% in late January, but this dropped to 17% by May 17. Saskatchewan, initially with the second highest levels, only dropped from 26% to 24% in the same period, thus having the highest rates by May 17, and was the only province to have no appreciable drop in VH over this interval.

Yet the trend from June 2020 to April 2021 is clear, as an increasing number of Canadians were willing and actually did receive Covid-19 vaccinations. As they approached their limit, these trends decelerated through the fall of 2021 (N. Little, n.d.-c, fig. Canada Daily Uptake by Dose Number), but many Canadians continued to die through fall 2022 (Mathieu et al., 2020, fig. Daily new confirmed Covid-19 deaths per million people), and likely beyond.

For the remainder of this thesis, it is useful to consider the outcome most relevant to the policy tools analyzed, the veritable rates of vaccination—not merely intentions—in each of the four western provinces. This is the fundamental indicator by which to judge efforts the provinces put forth, but only the announcement of vaccine passports could be meaningfully associated with plausible causal, quantitative implications. The exception is Manitoba, as no data on how their vaccine passport affected vaccination rates were found through research for this thesis, yet they stood out because their vaccine passport was announced more than two months earlier than for any other province.

Figure 5 – Pct. of Eligible Population Vaccinated, 1st & 2nd Doses, May 2021 to Feb 2022



About the Graph

For BC, all data were obtained from the "Daily update on Covid-19" series. Some of these came in the form of joint statements from "Dr. Bonnie Henry, BC's provincial health officer, and Adrian Dix, Minister of Health" (Henry & Dix, 2021k, para. 1), this citation being an example; and others of these came as "BC Covid-19 pandemic update[s]" (BC Ministry of Health, 2021f), of which this latter citation is an example.

BC was the easiest province for which to gather data, and its daily press releases had several useful indicators in the first paragraph of each release. When searching through "BC Gov News" (Government of BC, 2022), 10 entries with the first paragraph of each were displayed, so key indicators from many days could be seen on one page, making data collection fast and easy. In addition, their data-presentation format was consistent over the period of analysis and beyond.

For Alberta, May through June 2021 data was obtained from numbered updates named "Covid-19 pandemic in Alberta" (Government of Alberta, 2021t), and this citation for number 226 is an example, under the "Covid-19 vaccination program" section. Such reporting became sparse thereafter, however, and could typically only be found in special, rare announcements specifically about vaccination rate benchmarks, like one entitled "More than 8M vaccine doses administered" (Government of Alberta, 2022a). Unfortunately, these did not provide fulsome information. For example, while the other provinces changed their reporting to include 5- to 11-year-olds within a couple of weeks of the first pediatric vaccine approval, Alberta never did.

For September through January, it was, therefore, necessary to rely on a series from CBC News (2021d) called "Everything you need to know about Covid-19 in Alberta," this citation being an example. CBC probably built this data from the province's "Covid-19 Alberta statistics" (Government of Alberta, n.d.-c), under the "vaccination" tab, which gave regularly updated data, disaggregated by age groups at five-year intervals, but for which there are no online, public archives. Note that data from December 15 might have a reporting error (CBC News, 2021j, sec. The latest on vaccines), as the graph goes up significantly only to drop back down, and this is not because of a change increasing the number of people eligible. The fact that no publicly available archives exist, and that they did not provide the relevant information in regular press releases, made data-gathering difficult and time-consuming.

Saskatchewan had a regular "Covid-19 Update," and they provided the relevant data in their "Vaccines Reported" section (Saskatchewan Ministry of Health, 2021z), but on Aug 3, 2021, this data began to appear in the "Covid-19 Summary" section instead (Saskatchewan Ministry of Health, 2021ac). In terms of finding data, Saskatchewan was the next easiest, and apart from the one minor change in reporting format, was also consistent. Unlike BC, however, where updates for multiple days could be seen on the same webpage, each update had to be viewed individually for Saskatchewan, and it was several paragraphs down, rather than in the very first. It was nevertheless easy and relatively fast to collect this data.

Manitoba appears to have reported data on the percentage of the eligible population vaccinated only on its dashboard, but this ended in March 2022 (Unger, 2022b), and no archival information is forthcoming. They had regular "Covid Bulletins" (Province of Manitoba, 2021ao), which only gave the absolute number of doses administered (Province of Manitoba, 2021an, sec. Vaccine), obscuring inter-provincial comparisons. The exception was the month of December 2021, when their regularly updated press releases provided data on the percentage of the eligible population vaccinated. That changed again in January 2022, however, from which point, this data only appeared a few times a month, and any regular updates provided data only for those between five and 11, thus excluding other age groups (Province of Manitoba, 2022c, sec. Vaccine). Because no dashboard archives exist, data could not be collected from a consistent source, so searching through news media websites was necessary. For example, a Canadian Press article on November 3 (2021f), and a CTV News article from January 13 (Unger, 2022a).

A few comments on the relative ease or difficulty in collecting data are worth making. All four provinces show generally similar vaccination trends, but when examined at a more fine-grained level, BC stands apart. The other three provinces cluster together, yet Manitoba deviated from Alberta and Saskatchewan from late June to early October. BC was most transparent in its reporting, which correlates with BC also achieving the highest vaccination rates.

Saskatchewan was like BC in terms of its transparency, but Manitoba and Alberta were far opaquer than the other two provinces; however, all three provinces other than BC showed similar vaccination trends. It is unlikely that higher transparency caused vaccination rates to increase, but relatively low rates plausibly influenced governments to be less transparent. Indeed, BC should be applauded both for its transparency and its high vaccination rates, but Saskatchewan should also get credit for its transparency, despite its relatively lower rates.

Given Saskatchewan's example, Manitoba and Alberta could have approached this similarly, so it is fair to speculate that the reasons were political. According to an Angus Reid (2022) poll measuring Premier approval ratings, Kenney of Alberta consistently ranked second last, and Manitoba's Stefansson and Pallister before her ranked last over the 18 months before the graph's endpoint. In contrast, Horgan of BC and Moe of Saskatchewan had high approval ratings, despite a transient drop in the middle of 2021 for Moe, from which he largely recovered (Angus Reid Institute, 2022; Press Progress, 2021). Last, by August 2022, double-dose vaccination rates for those five and up in BC were at 87.9%, 85.2% in Manitoba, 82.7% in Saskatchewan, and 81.6% in Alberta (N. Little, n.d.-b, n.d.-a, n.d.-k, n.d.-d).

By fall 2022, it appeared there would be no further major pandemic upheavals in Canada. Yet making this transition globally may ultimately depend on converting Covid-19 vaccine skeptics into adherents, making policy tools targeted at them essential. It is therefore worthwhile exploring the various instruments deployed for this purpose, and the next chapter describes the policy tool typology applied in the document analysis, followed by an exploration of the nature of VH and means to address it, from which the 14 categories of VH tool types were derived and then applied.

Chapter 3: Literature Review

Introduction

This literature review identifies and examines academic literature on policy instrument typologies and VH, and grey literature for the latter. The following section is the first of two phases, an overview of policy instrument typologies and explains the choice of model. The second phase is the remainder of this chapter and is a scoping review of the literature on VH (for a definition of a scoping review, see Grant & Booth, 2009, p. 95). To begin with, VH is given a definition. This is followed by a section discussing the reasons for VH, followed by another section that explores the ways VH can be addressed. This latter section provides the categories for the document analysis that formed the core of the research for this thesis. Future considerations for addressing VH are discussed in the second to last section, and the chapter concludes with a summary of findings, 14 ways to decrease VH. In conducting this literature review, the following databases were searched:

- Academic Search Complete (EBSCO)
- British Medical Journal
- Canadian Health Research Collection
- Elsevier ScienceDirect
- International Encyclopedia of the Social and Behavioral Sciences
- Public Library of Science
- PubMed
- SAGE Journals
- Scopus (Elsevier)
- UVic Summon search tool

Searches occurred from September 2021 to January 14, 2022, using the following terms:

- (targ* OR tailo*) vaccin* messag*
- anti-vaccination ideology
- Covid (mort* (other OR all) disease*)
- Covid (vaccine OR facemask) mandates Canada
- Covid delay* ((health care) OR healthcare)
- Covid fear Canada
- Covid polic* (challeng* OR difficul* OR problem*)
- Covid policy variety Canada
- Covid vaccine (policy OR (public policy) OR (strateg* (public OR governmen*) (BC OR British Columbia OR Ontario OR Alberta OR Canada)
- Covid vaccine hesitanc* (policy OR (public policy)) (BC OR British Columbia OR Ontario OR Alberta OR Canada)

- ideolog* Covid Canada
- vaccine hesitanc*
- vaccine hesitanc* AND (address* OR reduc*) AND (polic* OR strateg* OR interventio*)
- vaccine hesitanc* polic*
- vaccine hesitanc* policy (BC OR British Columbia OR Ontario OR Alberta)
- vaccine hesitanc* policy Canada
- vaccine passport (BC OR Canada)

Literature Review on Typology for Policy Instruments

This phase of the literature review amounts to what Grant and Booth (2009) refer to as an "overview" (p. 94), which they describe as a summary of the relevant literature and attempts to survey and describe its characteristics. There are many lenses through which to interpret policy instruments, and as Pal (2014) notes, perspectives on these categories have changed over the last 60 years, when classification efforts were first made (131–132). While the methods of classification differ, they all imply varying degrees of coercion (Pal, 2014, p. 133), a concept which is central to this thesis. Nevertheless, the purpose of the present literature review was to find the typology of best fit, and some models were examined but rejected.[19]

Capano and Engeli (2021) analyzed five common policy instrument typologies used in comparative research. Pal (2014) provided an overview of four well-known instrument typologies (pp. 131−133), which partly overlapped with Capano and Engeli, Other sources were also reviewed (Bardach & Patashnik, 2020; Clark, 2017), and while informative to the process of finding the best fit, they were ultimately unfruitful for the current discussion.

Combining Capano and Engeli's typologies with those described by Pal yields seven unique classification systems, and after careful examination, Schneider and Ingram's (1990) model was selected. This proceeded qualitatively, and the frequency of tool types as implemented by the provinces was counted. Their typology was selected because, a priori, their categories appeared to best match the policy tools related to VH and VU, which was confirmed as the analysis proceeded. Also, their categories are based on the classification criterion of the "behavioural assumption with respect to target groups" (Capano & Engeli, 2021, p. 6), i.e.,

[19] Two other models were examined but rejected because they were a poor fit. One was a comparative analysis of Covid-19 policy mix responses by Goyal and Howlett (2021), which used "topic modelling… [a] machine learning technique for discovering the latent 'topic' in a document collection" (p. 252). While this approach avoids imposing predetermined categories and extracts them from the data set instead, only one or two of their 16 categories were appropriate (p. 255), which would provide little or no distinction to the current topic. The other model was by Thomson et al. (2015), which has a five-fold taxonomy to categorize the various causes that enhance VU, their so-called 5As: access, affordability, awareness, acceptance, and activation. This could have been used for in the present chapter, but since that chapter involves ways to address VH, rather than its root causes—a subtle difference—this was also excluded. It would have also collapsed this chapter into many fewer categories, making the analysis less precise.

getting "people to do things that they might not otherwise do" (Schneider & Ingram, 1990, p. 513). This fits well with an analysis of policy instruments aimed at improving VU and reducing VH. The following are their five categories:

1) *Authority tools* are expressions of the "legitimate authority of government that grant permission, prohibit, or require action under designated circumstances" and largely assume obedience (Schneider & Ingram, 1990, p. 514). For example, people typically obey red lights even in the middle of the night if no other cars are nearby (p. 514), something consistent with the self-surveillance function of disciplinary power described by Foucault (1977/1995).
2) *Incentive tools* "rely on tangible payoffs, positive or negative, to induce compliance or encourage utilization" (Schneider & Ingram, 1990, p. 514). This assumes the standard economic model of individuals as rational agents meeting their preferences by maximizing their utility of tangible goods or services. A $100-payout to those who get vaccinated is an incentive tool, as is a levy of similar magnitude placed on those who refuse vaccination, a carrot and a stick, respectively.
3) *Capacity tools* "provide information, training, education, and resources to enable individuals, groups, or agencies to make decisions or carry out activities" (Schneider & Ingram, 1990, p. 517). These assume incentives and motivations are not lacking; instead, barriers frustrate the realization of individual wants, including lack of information or knowledge, resources, or skills, and once overcome, targets will move toward the policy goal. They are usually "associated with voluntary activities… rather than *mandates* [emphasis added]" (Schneider & Ingram, 1990, p. 519).
4) *Symbolic tools* attempt to motivate individuals' actions based on their beliefs and values. They often use "persuasive communications that seek to change perceptions about policy-preferred behavior through appeals to intangible values… such as justice, fairness, equality, right and wrong… or through the use of images, symbols, and labels" (Schneider & Ingram, 1990, p. 519).
5) *Learning tools* are used when a problem may be recognized, but how to change target population behaviour is unknown or largely uncertain. These are often "rather open-ended about purposes and objectives, specifying only broad-based goals…. [and are] adjusted through time to reflect what is discovered to be reasonably achievable" (Schneider & Ingram, 1990, p. 521).

Note that vaccine mandates were classified as incentive tools, rather than authority tools, because it was unreasonable to "assume obedience" for many of the people who expressed VH in the face of such mandates, and such tools worked coercively, instead.

Defining Vaccine Hesitancy

The WHO, through the SAGE Working Group on Vaccine Hesitancy, first defined VH in 2014 (Lin et al., 2021, p. 2): The "delay in acceptance or refusal of vaccination despite availability of vaccination services. Vaccine hesitancy is complex and context specific, varying

across time, place, and vaccines. It is influenced by factors such as complacency, convenience, and confidence" (MacDonald, 2015, p. 4163). To improve this definition, a panel of vaccination experts and front-line vaccine providers in Canada defined it as the "reluctance to receive recommended vaccination because of concerns and doubts about vaccines that may or may not lead to delayed vaccination or refusal of one, many, or all vaccines" (Dubé et al., 2016, p. 6). The core aspects in both these key articles most relevant to Covid-19 VH in Canada are:

1. Issues of uncertainty about (particular) vaccines.
2. A lack of confidence or trust in vaccine safety or efficacy or in the organizations involved in their development and promotion.
3. The delaying of vaccination up to and including refusal (Dubé et al., 2016, p. 6; MacDonald, 2015, pp. 4162–4163).[20]

Some people, however, are absolutely opposed to vaccines, often rooted in ideology (Hornsey et al., 2021, pp. 6–8). Notably, the WHO (n.d.) identified VH as a key threat to global health in 2019 (pt. 8), before Covid-19 emerged.

Literature on Reasons for Vaccine Hesitancy

Through analyzing Canadian Twitter data, Griffith et al. (2021) found the most common reason for VH was safety concerns, representing 48% of tweets (p. 5). In descending order, the remaining reasons included political skepticism, such as conspiracy theories and doubts about the intentions behind vaccine rollouts, 32% of tweets; lack of knowledge about medicine and vaccines, 26%; mistrust of authority figures, 8%; the legacies of using certain minority groups for unethical medical research, 4%; and mistrust of drug companies and their lack of liability in case of injury from vaccines, 3% (pp. 5–6). One benefit of this research approach is that it involved a real-world, behavioural analysis, so the range of biases that can impair surveys did not affect them. They got these data in December 2020, overlapping with the approval of the first two vaccines in Canada, Pfizer-BioNTech on the 9th and Moderna on the 23rd (p. 3).

Owen et al. (2020) found among those who were opposed or unsure, the biggest reason was safety concerns, consistent with Griffith et al. (2021); this was followed by doubts about vaccine efficacy, and third, risks of Covid-19 infection seen as not serious, but these findings were before vaccines rolled-out (Owen et al., 2020, p. 4). According to Ipsos (2020) in the summer of 2020, intentions to not vaccinate were related to concerns about side effects, 54%; perceived inefficacy, 34%; low self-perceived risk from Covid-19, 22%; being generally opposed to vaccines, 18%; "another reason," 26%; or lack of time, 2% (p. 4).

[20] Among the leading VH researchers in Canada are Eve Dubé and Noni MacDonald, as their names appear just above; some of this work they completed together (Dubé & MacDonald, 2016); Dubé led at least one study on VH (Dubé et al., 2016), while MacDonald (2015) defined some key parameters; together and separately, they compiled reviews and meta-analyses (Dubé et al., 2015, 2021; MacDonald, 2015; MacDonald et al., 2018); and each was a non-lead key contributor to other work too, much of which was international (Attwell et al., 2019; Butler & MacDonald, 2015; Eskola et al., 2015; S. Goldstein et al., 2015; Nowak et al., 2015). This body of work is extensive, and many important points made therein are dispersed throughout the present literature review.

With specific reference to Covid-19 vaccines, a major factor influencing VH was their speed of development, which caused skepticism about the safety and efficacy of those vaccines. Mondal et al. (2021), in a systematic review of the research of the determinants of Covid-19 VH, echoed all the above points (p. 3). Since technological innovation was a substantial reason they developed these vaccines so fast, similar skepticism may apply to future vaccines too, Covid-related, or not. Mondal et al. also noted the role of social media in rapidly spreading mis- and disinformation (p.4).[21] Consider epistemic bubbles and the potential to reinforce echo chambers (Nguyen, 2020, pp. 141–149), wherein cognitive biases, often related to social identity, are likely to operate (Linker, 2015, pp. 1–3), potentially reinforcing hesitancy.

Vaccine experts and health professionals view the reasons for VH similarly but rank them differently than those who are hesitant themselves: Experts see the leading reason being the diffusion of negative information on vaccination through the internet and social media—this contributing no doubt to uncertainty—followed closely by a cluster of other reasons: lack of confidence in the safety and efficacy of vaccines, mistrust of the pharmaceutical industry, lack of knowledge about vaccination, and the influence of the anti-vaccine movement (Dubé et al., 2016, p. 7). This was before the current pandemic but given Mondal et al. (2021) made similar points, these experts still likely hold these views.

Based on data from late 2020 and specifically related to Covid-19, Humble et al. (2021) note an important clue: "Perceptions of vaccine-related (e.g., safety, necessity) factors were more important predictors of parents' low Covid-19 vaccination intention for their children than sociodemographic characteristics" (p. 7675). Something that might (partly) explain the differences in perceptions of vaccine-related factors could be rooted in psychology. Therefore, a strain of research worth further exploration relates to the psychological factors that might influence VH and its origins.

Anthropologist, Gul Deniz Salali, asserts that "some people have a strong negative response to believing their freedom of choice is in danger, or to believing they're being made to conform to what the majority wants" (Kidd, 2021, para. 23). This is an example of the psychological phenomenon of *reactivity* that Steven Taylor, a clinical psychologist at the University of British Columbia, explains as "a motivational state driven by the feeling that someone is trying to curtail one's freedom" (Pappas, 2021, sec. Vaccine communication). Similarly, trauma plays a role in VH, and in an article from the Royal Society of Canada, they noted how "adverse childhood experiences were also linked to vaccine hesitancy" (Afifi, Stewart-Tufescu, et al., 2021, sec. "The evidence"), which amounts to various forms of abuse,

[21] A more recent category is *malinformation*: "Information that is based on reality but used to inflict harm on a person, organisation, or country. An example is a report that reveals a person's sexual orientation without public interest justification" (Wardle & Derakhshan, 2018). Yet as highlighted in Chapters 7, justifications were not always forthcoming from the relevant authorities. One could argue the conclusion of this present thesis is malinformation: The information is true; the criticisms in this thesis could be interpreted as intending to harm the Government of BC's reputation; and dissenters could claim—wrongly—that this goes against the public interest. Yet despite the potential for misuse of malinformation, it is a useful category since it distinguishes nuances that were conflated with mis- and disinformation previously.

intentional or not. Some of the same researchers repeated a similar point in a research paper in June 2021 (Afifi, Salmon, et al., 2021, p. 3476). Given the prevalence of these types of traumatic childhood experiences among adults, which was established over two decades ago (Felitti et al., 1998), and how these relate to problematic relationships with authority figures involving violations of trust, the phenomenon of VH might be partly explained by parenting of the worst kind. Nevertheless, the focus should be achieving high VU, so exploring the means of doing this is paramount.

Literature on Addressing Vaccine Hesitancy

Through the middle of the last decade, there was uncertainty and concern about best practices for addressing VH. For example, "educational interventions to correct 'misinformation' about vaccines… were largely ineffective… [and may even] augment negative attitudes in the most vaccine-hesitant participants" (Dubé et al., 2016, p. 11). For some people, public health communications may increase VH, and attempts to "correct false claims about vaccines may be especially likely to be counterproductive" (Nyhan et al., 2014, p. e835). Focusing on parental VH, Sadaf et al. (2013) explained that "there is limited evidence to guide implementation of effective strategies to deal with… vaccine refusal" (p. 4293). Dubé et al. (2015) later echoed this, as the evidence was weak for any "specific intervention to address vaccine hesitancy/refusal" (p. 4200). Knowledge about effective strategies has grown recently, however, as shown in the next sections.

Building Communications Capacities

The following two recommended public health strategies apply but are not limited to Covid-19 VH at both general and more specific levels. In a paper about Covid-19 vaccination uptake strategies, French et al. (2020) noted tools for "building communication and behavioral influence capacity and expertise should be a priority" (p. 11). How to communicate also matters, and in the concluding chapter of a book about public health risk communication, Bennett et al. (2010) discussed key elements to make this effective, like ensuring uncertainty is honestly admitted, and maintaining the openness of the process and of information (pp. 324–325; see also, Heine & Wolters, 2021, for other ways to improve governmental communication for VU). Moreover, in an article about a June 2020 survey regarding the potential for the acceptance of Covid-19 vaccines, before their availability, Lazarus et al. (2021) explained the importance of developing communications strategies that go beyond merely "pronouncing that vaccines are safe and effective" (p. 226; see Inform and Educate HCPs About Vaccine Safety and Efficacy subsection for more on this topic). They go on to say:

> Clear and consistent communication by government officials is crucial to building public confidence in vaccine progams [*sic*]. This includes explaining how vaccines work, as well as how they are developed, from recruitment to regulatory approval based on safety and efficacy. Effective campaigns should also aim to carefully explain a vaccine's level of effectiveness, the time needed for protection (with multiple doses, if required) and the

> importance of population-wide coverage to achieve community immunity. Instilling public confidence in regulatory agency reviews of vaccine safety and effectiveness will be important. Credible and culturally informed health communication is vital in influencing positive health behaviors [see Culturally Adapted and Tailored Messages subsection for more on this topic], as has been observed with respect to encouraging people to cooperate with Covid–19 control measures. (p. 227)

There is a great deal to dissect here, but for simplicity's sake, the analysis in this thesis extracts from above the importance of *building communications capacities*.

Strategies Layered at Social Levels

Finney Rutten et al. (2021) recommended a layered approach involving interventions at the organizational, interpersonal, and individual levels to "improve population adoption of Covid-19 vaccination"(p. 699), in a US review on this topic. This can be interpreted as a specific type of policy instrument mix. Another point made by Paterson et al. (2016) is the need to strengthen trust between HCPs, health authorities, and policymakers, through more shared involvement in developing policies and using a sentinel network to pick up emerging vaccine concern trends to deter future trust breakdowns (pp. 6700, 6705). Verger et al. (2021) made a similar point in a study of HCPs' attitudes towards Covid-19 vaccination in France, parts of Belgium, and Quebec: They have low trust in both ministries of health and the pharmaceutical industry (p. 6), which likely ultimately detrimentally affects their patients' uptake of vaccines. Therefore, having coherence and consistency across various levels of social organization is important, i.e., s*trategies layered at social levels*.

Amplifying The Voices of The Vaccinated

In a report on a 2017 international conference about improving vaccination rates, Attwell et al. (2019), focusing mostly on parents, explained this is best fostered through effective communication, designing and evaluating of targeted interventions, and surveillance of VU (p. 677). They promoted the use of social marketing, which "goes beyond communication… since it examines the determinants of behavior and the causes of those determinants in the context in which people live," Washington State's community immunity initiative being an example (p. 687), for which the original research was conducted by Schoeppe et al. (2017):

> The community immunity initiative in Washington State…. was developed to ensure that the voices of the majority of parents who vaccinate their children that are usually not heard could be heard…. [which] over three years… showed a 38% reduction in vaccination hesitancy among parents. (Attwell et al., 2019, p. 679)

They also noted the "I Immunise" social marketing campaign from Fremantle, Western Australia: This showed that framing vaccination in terms of values and identity "resonated positively with a third of survey participants who had previously refused a vaccine" (p. 679). Chevallier et al. (2021) made a similar point in their recommendations to overcome the "last

mile" regarding VH: "Help early adopters communicate about their decision to be vaccinated to accelerate the emergence of pro-vaccination norms" (p. 331). These efforts amount to *amplifying the voices of the vaccinated*.

Leveraging Trust Relationships HCPs Have with Their Patients

In her review of known barriers and ways to overcome them, Williams (2014) noted that HCPs are "consistently cited as the most important resource for vaccine information by" VH parents and they play a central role in improving uptake (p. 2584). In convincing parents to get their children vaccinated, how practitioners "initiate and pursue vaccine recommendations is associated with parental vaccine acceptance" (Opel et al., 2013, p. 1037), in a study exploring what communication style works best in addressing VH. This was repeated by Dubé et al. (2016) when they noted how "patients see health care professionals as the most trusted source of information on vaccination" (p. 11).

Similarly, in researching the associated factors and reasons for VH, Gust et al. (2008) found "the largest proportion of parents who changed their minds… listed 'information or assurances from health care provider' as the main reason," which involved trust (p. 718). In a review of 185 studies about HCPs' role in VH, Paterson et al. (2016) found two key elements positively associated with them recommending and ultimately increasing vaccination to their patients: First, practitioners' favourable attitudes and getting vaccinated themselves (pp. 6701–6702); and second, increasing their knowledge about (particular) vaccines (p. 6703), while feeling unprepared and lacking resources were obstacles to having challenging conversations with patients about VH (p. 6704). Benham et al. (2021), in a paper specifically about Covid-19 VH in Canada, also noted that ensuring HCPs "are knowledgeable and supported in their vaccination counselling may be effective" (p. 1). However, in a small-scale, qualitative study done in Spring 2021 in Canada, Dubé et al. (2022) found an interesting nuance: while HCPs recognized they were a key source of knowledge for their patients, they typically did "not consider it their role to provide advice on Covid-19 vaccination" (p. 1). Nevertheless, one means of addressing VH is through *leveraging trust relationships HCPs have with their patients*.

Inform and Educate HCPs About Vaccine Safety and Efficacy

It is therefore especially important to understand why some HCPs themselves express VH. Dubé et al. (2016) said: "Further studies will be needed to better understand… [VH] among front-line vaccine providers" (p. 12), and Paterson et al. (2016) shed some light on this: Information campaigns, like lectures, courses, meetings, or individual letters, and various means of nudging were linked to HCPs being more likely to get vaccinated after attending such events (p. 6703), but no causal link was established. While more recent research from Saudi Arabia suggested this is not a serious issue (Almojaibel et al., 2022, p. 1), Saudi Arabia lagged Canada by 12 percentage points in terms of the total population who had received a "complete initial

[vaccine] protocol" as of July 20, 2022 (Mathieu et al., 2021, fig. Share of people vaccinated against Covid-19, May 15, 2022), casting doubt on this claim.[22]

Lin et al. (2021) systematically reviewed 96 studies about HCPs' attitudes and proclivities to recommend vaccination to their patients, which covered 17 vaccines but mostly HPV and influenza (p. 3): HCPs themselves are hesitant when their confidence in and knowledge about a vaccine is low, and generally, vaccination rates among them are suboptimal (pp. 1, 11). These vary widely, however, depending on the particular vaccine, country, and the presence of vaccine mandates (Çiftci et al., 2018, pp. 111, 114). Reasons for their receptivity to vaccination include perceived safety, efficacy, and disease severity, consistent with the public at large (Lin et al., 2021, p. 11). Thus, a key gap between vaccines and getting vaccinated is providers' lack of knowledge about vaccines and the diseases they address (Lin et al., 2021, p. 11).

Five years after Dubé et al. (2016) said more needed to be known about VH among HCPs, Gobert et al. (2021) studied VH among general practitioners in Belgium and found three positively correlated factors: "being under 50 years old, not having children, and no reported experience with a selection [of] vaccine-preventable diseases in the past five years" (p. 10).[23] However, since most Covid-19 vaccines were not administered through the typical route, as mass vaccinations did not involve clinical settings (Treble, 2021), these considerations were irrelevant through those early efforts. As the remaining unvaccinated dwindled to an ever-smaller minority, however, this was increasingly germane. Thus, efforts to *educate HCPs about vaccine safety and efficacy* are important.

Positive, Altruistic Messages

Chou and Budenz (2020) explored ways to affect targets' emotions when communicating about Covid vaccines, with the aim of behaviour change. They said it is useful to attend to people's "negative emotions such as fear and anxiety, raising awareness of emotional manipulations by anti-vaccine disinformation efforts… [but ultimately to activate] positive emotions such as altruism and hope" (p. 1718). That is, when encouraging people to get vaccinated, it is helpful to frame this as an altruistic action and associate it with positive emotions. No communication channel is specified, e.g., targeted through social media, personal interactions between HCPs and patients/citizens, mass media campaigns over television or radio, or other means, but crafting *positive, altruistic messages* is easy, so worth pursuing.

Culturally Adapted and Tailored Messages

Another key consideration is demographic differentiation. Those who express VH are a diverse and heterogenous group (Dubé et al., 2016, p. 10), and "culturally adapted and

[22] While providing ongoing data for other countries, this data set gave no data for Saudi Arabia past July 20, presumably, because Saudi Arabia stopped reporting these figures.

[23] The third was marginally statistically significant but shown significant by Paterson et al. (2016) previously.

personalised interventions… [have] been shown to be effective in enhancing compliance with preventive behaviours, including vaccination" (Dubé et al., 2015, p. 4201). Provincial differences were previously noted (see Literature on Reasons for Vaccine Hesitancy section), but differences exist between ethnic groups too: As of late March 2021, the willingness of Latin American and Black Canadians was lower than average, while South Asian Canadians were higher than average (StatsCAN, 2021a, para. 6). Data on actual rates of vaccination by ethnicity are difficult to obtain in Canada, however, and must be done by proxy, compared to the US and the UK, where this is done directly (Public Health Ontario, 2021b; E. Thompson et al., 2021). However, visible minorities are typically at higher risk of infection and mortality from Covid-19 (StatsCAN, 2021a, para. 6). As for Canadians aged 50 and older, Covid-19 increased their willingness to obtain not only Covid-19 vaccines but also those for flu (Waite et al., 2021, p. 1). A surprising detail is that while VH "exists in all stratums [*sic*] of the population, it is often associated to [*sic*] highly-educated parents" (Dubé et al., 2016, p. 11); thus, to speculate, this may contribute to VH among front-line HCPs noted earlier.

One strain of literature related to the issues just mentioned examined how to best communicate with those who express VH, and it appears message tailoring is effective. Kreuter et al. (2004) explained how "tailored immunization calendars can help increase child immunization rates" (p. 122). This study involved 321 babies for whom their parents received individually tailored immunization schedules. Although they did not specifically address VH parents, this nevertheless showed the value of both tailoring and scheduling, a form of messaging, in the context of childhood immunization (Kreuter et al., 2004). In the same context but specifically targeting VH parents, research by Gowda et al. (2013) suggested messages that are individually tailored might be effective. Although tailored messages substantially improved vaccination intentions over untailored ones, the researchers acknowledged the study's drawback was its 77-participant sample size, making findings not statistically significant (p. 437).

Both Lee et al. (2019) and Gerend et al. (2013) investigated the role of message tailoring in bolstering young women's intentions to get vaccinated against human papillomavirus (HPV); the former of these targeted a specific cultural group, Korean American immigrants, through mobile text messaging. In both cases, tailored messages increased vaccination intentions, but a randomized control trial by Panozzo et al. (2020) examining tailored messages targeted at mothers who did not intend to vaccinate their 11- to 14-year-old daughters showed that while the intervention improved HPV vaccination intentions, the effect was not strong and vaccine concerns remained high even in the intervention group (p. 253). Panozzo et al. suggested improvements in the rates of intention may not translate into substantial increases in rates of vaccination, and this requires further research (p. 260). However, in their article discussing means of addressing Covid-19 VH for minority groups, Strully et al. (2021) highlighted the value of emphasizing "understandable and culturally appropriate messages that directly address people's concerns" (p. 1). Thus, given the low cost and potential for benefit, it is worthwhile to proceed with implementing tools involving *culturally adapted and tailored messages*.

Presumptive Communications

Communication that is presumptive rather than participatory is also effective in addressing VH. In a study specifically on this topic, Opel et al. (2013) established, that among parents who expressed VH, a presumptive communication style by clinicians reduced resistance (p. 1037), e.g., "when do you want to schedule your vaccination appointment?" instead of "do you want to schedule an appointment?"[24] More recently, Brewer et al. (2017) showed something similar in a randomized control trial involving HPV vaccines and adolescent girls. Training clinicians to use a presumptive style with the parents of these girls improved vaccination initiation over those who were trained to use participatory conversations (p. 1). Moreover, the use of presumptive communication is among the key recommendations from leading researchers in the field (Dubé et al., 2015, p. 4201; Dubé & MacDonald, 2016, p. E18; MacDonald et al., 2018, p. 221), so tools employing *presumptive communication* are worth implementing.

Normative Pressure

Another way to address VH involves the use of normative pressure, i.e., communicating to citizens that they live within communities that are highly receptive to vaccines in general or specifically to Covid-19 vaccines. Although some studies discuss using norms to increase vaccination rates (MacDonald et al., 2018, p. 219; Thomson et al., 2015, p. 1022), this might require targeting subgroup norms. While according to Attwell & Freeman (2015), this required further research (p. 6239), more recently, MacDonald et al. (2018) suggested that reinforcing the value of community protection might be helpful (p. 222). The use of *normative pressure* is therefore appropriate, given the minimal cost.

Improving Access to Vaccinations

Another consideration is the importance of access to vaccinations. One notable way of improving access is by providing them in schools, for example (MacDonald et al., 2018, p. 220; Thomson et al., 2015, pp. 1020–1021), something that differentiated the four provinces (Bains, 2022). Access appears to be especially important for racialized communities (Quinn & Andrasik, 2021; B. Rosen, Waitzberg, et al., 2021, p. 10). Smith et al. (2015) noted that lack of access is often the primary reason for unvaccinated children and adolescents regarding measles (p. 485). Although this alone might typically be insufficient, it is often a key hurdle.

Four Last Means

Worth noting are a few strategies to avoid. "Respect with empathy for different perspectives on immunization" is essential (MacDonald et al., 2018, p. 218), which was reiterated by Dudley et al. (2020) in an issue of *Vaccine* just a few months before Covid became pandemic; being openly critical of those who express VH is unhelpful, so *do not admonish the*

[24] This is like the nudging strategy of making the desired behaviour the default option, as discussed by Serra-Garcia and Szech (2022), who explore using defaults to increase Covid vaccination rates.

unvaccinated. Large financial inducements are also of questionable value, and a series of studies by Cryder et al. (2010) on inducements in research showed perceptions of risk grow in proportion to the magnitude of these inducements. MacDonald et al. (2018), in a literature review on VH, noted two other studies (Fu et al., 2016; Wigham et al., 2014), and these showed financial incentives were ineffective, specifically for increasing vaccination rates (MacDonald et al., 2018, p. 220). This was the state of knowledge when governments were making decisions affecting VH, so the conclusion at the time should have been to avoid financial incentives. Appendix 3 provides much more recent research about financial incentives specific to Covid-19 vaccinations, but ultimately, the conclusion remains: *No large financial inducements*.

MacDonald et al. (2018) make two additional points: First, *loss-framed messages when addressing self-interest* appear more effective than those that emphasize the positive benefits of vaccination (p. 221; cf. Chang et al., 2021, p. 7, showing how this may be detrimental sometimes); second, vaccine mandates, although done with good intentions, "have sometimes backfired and increased anti-vaccine sentiments," and suggested nudging is probably a better approach in many circumstances (p. 220). The WHO (2022) echoed this in mid-2022, when they continued to not "support the direction of mandates for Covid-19 vaccination, having argued that it is better to work on information campaigns and making vaccines accessible" (p. 1); thus, *avoid vaccine mandates*, if possible. Some key academics involved in infectious disease, epidemiology, and medicine summarized many of the above points in a February 2022 news article: "Today, government and opposition leaders should promote policies to increase resources for proactive uptake and outreach that encourages vaccination and empowers people, rather than basing policies in mandates and penalties" (Chagla et al., 2022, sec. Politicians fuelling division).

One category excluded from the document analysis, which is the next chapter, was that of *fines, penalties, and enforcement* tools. These tools were deployed to address non-compliance with public health orders, and while many were not targeted at VH, some issues related to non-compliance with public health orders involved vaccination status. For example, some businesses were fined for not verifying vaccine passports (for an example of three businesses fined in Saskatchewan, see James, 2021). However, since no recommendations for this tool was found in the current literature review, this is not included in the list of 14 expert recommendation that form the second part of the two-fold analytical framework for the document analysis.

Future Considerations for Addressing Vaccine Hesitancy

The preceding illustrates some of the contextual complexities challenging governments when introducing and adapting policy instruments targeting VH. Much of the above literature relates to endemic infectious diseases, and the state of knowledge specific to Covid-19 and VH is still evolving considerably. The scale and speed of the Covid pandemic strained just how applicable some of the prior research might be; it is not just the virus that is "novel," but the entire scenario; and the world has changed dramatically since the end of the First World War, the last time something comparable occurred, the Spanish Flu (US–CDC, 2019).

Recent research by Vlasceanu et al. (2021) suggests a promising avenue to correct erroneous beliefs through having people make predictions based on those beliefs and immediately showing them the true data. For example, if a person believes the US justice system is fair to racial minorities, they would be asked to predict the likelihood of an African American being imprisoned compared to a White American for a similar crime; if they said twice as likely, they would immediately be shown the true rate ratio is five to one (sec. Supplementary materials). The larger their error, the more they update their erroneous belief, and this holds regardless of political leanings (p. 916). It is reasonable to speculate this could apply to erroneous beliefs that foster VH.

In an article on medical ethics, again regarding parental concerns about vaccinating their children, Williamson and Glaab (2018) argue for a nuanced approach: They suggest to "avoid simple reliance on either parental values or coercive public policies" (p. 1), and instead, engage citizens in vaccination policy development, which recently "played an important role in the extension of mandatory vaccination in France" (p. 5). A core message of this article is, that by going beyond the mere voicing of opinions—where people are prone to making unsubstantiated claims—and involving citizens in the process of deliberations, one can enhance the acceptance of the outcomes of such efforts. However, there is a potential further step beyond deliberations and into veritable *public engagement*, in which participants have a role in implementing and sharing the responsibility for outcomes (Lenihan, 2012, pp. 70–73).

In his book, *Social Physics*, MIT Professor, Alex Pentland (2015), discusses the various quantitative analyses he and his colleagues apply to vast quantities of real-world, behavioural data, and data generated through special sociometric devices akin to wearable technology. These provide extremely high granularity and sample sizes many scales of magnitude greater than previously possible in the social sciences, but he is not without his critics.[25] The research derived from these massive, high-resolution data sets leads him to argue changing people's behaviour is better accomplished by indirectly incentivizing their social networks, rather than directly incentivizing the target individual (Chapter 3, sec. Social pressure); and also through what he calls *engagement*: "how new ideas become habits, and how learning can be accelerated and shaped by social pressure" (Chapter 1, sec. Plan for the book). This is "usually within a peer group, that typically leads to the development of behavioral norms and social pressure to enforce those norms" (Chapter 1, sec. Language). These are ways to enhance the use of normative pressure (see Normative Pressure subsection), influencing people's decisions and actions, and driving it through novel tools derived from and applied to behavioural data.

Given the initial novelty of the scenario, public engagement and the application of the tools of social physics were probably inappropriate in 2020 through 2021. As months turn to

[25] Zuboff (2019) is highly critical of Pentland's role, in which she argues he enables companies like Meta and Google to influence people's behaviour dramatically. In her view, his project is simply a high-tech version of Skinner's Behaviourism and the related efforts to control people's behaviour from over a half-century ago (Chapter 12, sec. IV–IIV).

years, however, and the potential for other pandemics looms on the horizon—which climate change will exacerbate (Choffnes & Mack, 2014, pp. 1–3; Gorji & Gorji, 2021)—such considerations become increasingly appropriate. Nevertheless, these considerations were excluded from the document analysis, the core research of this thesis.

Summary of Findings: Expert Recommendation Categories for the Document Analysis

The preceding sections provided a detailed account of the range and types of policy tools to address VH that were available to the western provinces. These are diverse, but some of them were applied much more frequently than others, for a variety of reasons, which will be demonstrated in the next chapter. It is helpful to now summarize these tools in a list to structure the ensuing analysis. The order of this list is consistent throughout the remainder of this thesis:

1) Build communications capacities.
2) Use strategies layered at social levels.
3) Amplify the voices of the vaccinated.
4) Leverage relationships of trust with HCPs.
5) Inform and educate HCPs about vaccine safety and efficacy.
6) Use positive, altruistic messages.
7) Use culturally adapted and tailored messages.
8) Use presumptive communications.
9) Use normative pressure.
10) Improve access to vaccinations.
11) Use loss-framed messages when addressing self-interest.
12) Do not admonish the unvaccinated.
13) Avoid large financial inducements.
14) Avoid vaccine mandates, if possible.

Chapter 5 describes the findings as a result of applying the categories enumerated above. However, before presenting these, it is important to understand how this research was conducted. As such, the following section describes methods and methodology.

Chapter 4: Methodology and Methods

Introduction

This brief chapter first describes and justifies the assumption underlying this thesis. The next section then provides a definition for the method used herein, *document analysis*, discusses its relevant advantages and one key disadvantage, and explains why this method was chosen. Following this is a description of how this was applied to the present research and how the data was analyzed. The chapter concludes with a discussion of notable research limitations.

Methodology

Underlying this thesis is the assumption—not the assertion—that the world can be objectively observed and facts discovered, a position that is typically associated with a positivist research paradigm; that is, "social facts are things such as institutions, norms, and values which exist external to the individual [and can be observed and studied]" (Nickerson, 2022, sec. What Is Positivism?). Yet this research project involved sifting through government websites and interpreting whether descriptions therein fit any of the categories that were derived from the literature review. As such, the research paradigm was ultimately interpretivist, albeit one that involved a realist ontology.[26]

Philosophical realism has many strains, and while one can take a realist perspective in one field, macroscopic objects like rocks and planets, for example, one could simultaneously take a non-realist stance on moral and aesthetic values. The topic is complex, but suffice to say, there are two key elements: first, that things exist—like policy instruments in the case of this thesis—and second, that these things exist independently of the observer's mind (Miller, 2021a).

This is consistent with how the method for data gathering described below, document analysis, was conducted deductively, and how this was preceded by a literature review on VH, which provided the categories for that document analysis. Worth noting, in a case such as this, Bowen (2009) would describe this as "data selection" (p. 31), instead of data gathering.

Because the topic of policy tools for addressing Covid-19 VH is new and developing, this thesis adopts an exploratory research approach. Ritchie and Ormston (2014) provide descriptions of several types of such research, and one of these conforms to the approach of this thesis: to "map the range of elements, dimensions, classes, or positions within a social phenomenon…. [to] identify and define typologies…. [and] to investigate and capture interpretations of social phenomena" (pp. 31–32).

While the data gathering method for the core of this thesis is document analysis (described in the next section), this falls under an overall approach of policy analysis; that is, the

[26] An interpretivist paradigm is often associated with "meanings and actions of actors according to their own subjective frame of reference" (M. Williams, 2000, p. 210). The present study did not analyze people, entities, and their actions in this was. However, the researcher himself used his own frame of reference to interpret meaning.

focus is on outcomes resulting from the deployment of policy tools, (Dobuzinskis & Howlett, 2018, p. 14). In the present context, the key outcome is vaccination rates, and the remainder of outcomes amount to whether governments deployed policy tools that were consistent with expert recommendations, and if they did so extensively, moderately, or not at all.

Methods

The data gathering method used for the research core to this thesis is document analysis. Bowen (2009) defines this data collection tool as a "systematic procedure for reviewing or evaluating documents, both printed and electronic…. Like other analytical methods in qualitative research, document analysis requires that data be examined and interpreted in order to elicit meaning, gain understanding, and develop empirical knowledge" (p. 27).[27] This approach to data collection was used to write the background and policy analysis chapters.

While document analysis is typically used as a secondary means to supplement other sources of data (Cardno, 2019, p. 637), such as interviews or (non) participant observations (Bowen, 2009, p. 28), it can also be used entirely on its own (p. 29). This undergirds the core rationale for using document analysis in this thesis, and as noted by Bowen (2009), it is useful "as a stand-alone method for specialised forms of qualitative research… [where] documents may be the only necessary… [or] viable source [of data], as in historical or cross-cultural research" (p. 29). Indeed, it is often used in conjunction with grounded theory (Bowen, 2009, pp. 34–35), but analysis need not only be inductive, from data to theory.

As Cardno (2019) explains, this can also proceed deductively, when categories are already established, as extracted through a literature review, for example (p. 634). The categories listed in the Summary of Findings at the end of Chapter 3 were determined in just this way. Bowen makes a similar point: "Researchers typically review prior literature as part of their studies and incorporate that information in their reports" (p. 28). It is worth noting that *discourse analysis* (Cardno, 2019, pp. 635–636), *content analysis* (Bowen, 2009, p. 32; Cardno, 2019, pp. 635–636), and *thematic analysis* (Bowen, 2009, pp. 32–33; Cardno, 2019, p. 634) are all discussed as often integral to document analysis, but given that categories were defined through the literature review on VH, these forms of analysis were irrelevant and unnecessary.

Bowen and Cardno describe the benefits of document analysis: it is low cost, efficient, and unobtrusive and thus non-reactive, i.e., the researcher does not affect the observations (Bowen, 2009, p. 31; Cardno, 2019, p. 626), and Bowen goes on to include that materials are often easily available (p. 31). One disadvantage noted by Bowen relevant to this thesis is the potential for "biased selectivity"[28] (p. 32), which can be biased to align with an "organization's principals" (p. 32). An example for the present research is the press release transcripts published online by each province. Helping to address this potential, however, are the many news media

[27] In providing this definition, Bowen cites Corbin and Strauss (2008) and Rapley (2007).
[28] The original reference comes from Yin (1984, p. 80).

sources used in this thesis, allowing for data triangulation (Bowen, 2009, pp. 28–29; Cardno, 2019, p. 626).

Data Analysis

An extensive review of mostly government websites and documents, primary sources, and news media articles and websites, as secondary ones, was conducted.[29] Government news portals were searched chronologically and any entries with relevant titles were then extracted. Ancillary data from news media were obtained by applying search criteria in Google Search but also through government website searches. These entries were read, and data were extracted and tagged with a date. By province, the extracted data were then arranged chronologically.

Once completed, the extracted segments were each read using the two-fold analytical framework. The first of these was *instrument typology*, which slotted policy tools in one of five categories:[30] authority tools, incentive tools, capacity tools, symbolic tools, or learning tools (see Literature Review on Typology for Policy Instruments in Chapter 3). The second part was *expert recommendations*, 14 of which were drawn from a literature review (see Summary of Findings in Chapter 3 to see how this two-fold framework was applied in the document analysis, see Appendix 6, where typologies are indicated in **bold**, and recommendations are <u>underlined</u>).

One set of categories for the core research, the document analysis, was derived from the Literature Review on Typology for Policy Instruments, which is at the beginning of Chapter 3 (for a description of the method used for this, see that subsection of Chapter 3). The other set of categories used in the document analysis was derived from the Literature on Addressing Vaccine Hesitancy, which spans the remainder of Chapter 3. Thus, the document analysis of policy tools used by the four western provinces was done after having first determined the policy tool typology and after then having completed the analysis of the VH literature and deriving the 14-category framework shown at the end of Chapter 3.

Results were obtained using the following databases:

- Google Search
- BC Gov News Search
- Alberta News Search
- Saskatchewan News Releases Search
- Manitoba News Releases Search

[29] Counting entries in the citation management software yields 459 provincial government websites and documents and 184 new media articles and website (643 in total). Because management of these entries evolved as this thesis developed, there are approximately 20 to 50 websites, documents, and articles in all that are not reflected in this count. There were therefore anywhere between 663 and 693 documents analysed in total.

[30] Policy tools were sometimes slotted into two categories, but the goal here was to understand the variety of tools implemented and get an approximation of their use, not produce a rigorous quantitative analysis, which would have been accomplished in a very different manner. Thus, the issue of double counting was not problematic.

These data were gathered between January 20 and May 10, 2022, mostly by chronologically scanning all the press releases on each province's news portal that had the word "Covid" in it. The data were published mostly between December 9, 2021, and Feb 15, 2022, and while much of it was acquired from the government websites noted above, considerable ancillary data were obtained using Google Search. All searches for the data analysis used the following terms:

- Alberta covid vaccin*
- Alberta covid vaccin* (uptake OR hesitanc* OR mandat* OR willing*)
- Alberta vaccin* Covid
- Angus Reid vaccin*
- British Columbia covid vaccine* (uptake OR hesitanc* OR willing*)
- Manitoba vaccin* madat*
- Manitoba vaccin* polic* Covid
- Quebec Covid tax
- Saskatchewan Covid
- Saskatchewan covid press release
- Saskatchewan vaccin* Covid
- Saskatchewan covid vaccin* (uptake OR hesitanc* OR willing*)
- Vaccin* mandat* Canada Federal

Research Limitations

An important and obvious limitation is the inability to draw direct and clear causal relationships between policy instruments, sets thereof, and specific outcomes. This is a problem for any observational social research,[31] especially as complexity grows; and combined with how rapidly the situation evolved, there may be no more a wicked problem in the world in recent years than Covid-19. This was only exacerbated by the global nature of the pandemic, as, for example, only after the announcement of the discovery of the Omicron variant in South Africa was it determined to have been in the Netherlands at least many days prior to that announcement (Casert, 2021; WHO, 2021). Any causal conclusions are therefore tentative, they are supported by appropriate rationales, but are subject to future re-evaluations.

Another limitation, one noted by Capano and Howlett (2020) in a review of current knowledge gaps in policy instrument analysis in general, is the matter of temporality (pp. 3–4). For Covid-19, the policy cycle was extremely accelerated, so understanding how the sequencing of deployment affected interactions was impracticable, making any such analysis inappropriate for this thesis. Capano and Howlett also discuss going beyond the mere matter of the incentive structures for compliance and examining the related input factors, such as legitimacy, trust, and other social dynamics (p. 6). Such an examination was beyond the ambit of the present work, but for policy tools related to VH, social trust and institutional legitimacy are core issues.

[31] See Lu (2009) for a discussion of this topic in a medical context.

The next chapter presents findings. The first section is about the main similarities between the provinces, especially the many capacity tools for improving access to vaccinations and includes their minor differences. This is followed by a section of the most visible policy tools, the vaccine passports and vaccine mandates, and discusses the reasons allowed for accommodation and testing in lieu of vaccination for these tools. Then major differences are discussed, mostly the use of lotteries and financial inducements. The chapter concludes with a brief discussion with what appeared to be policy instruments deployed uniquely in each province.

Chapter 5: Findings – Analysis of Policy Tools

Introduction

This chapter begins by briefly comparing Canada and Australia to provide context for how each Canadian province had to declare its own state of emergency, in contrast to the federal declaration in Australia. The subsequent section analyzes the similarities between the four western provinces, along with their minor differences. A comparison of the most salient policy instruments, the vaccine passports for the populations at large and vaccine mandates on provincial public servants and HCPs, form the section which follows. The second to last section presents the major differences between the provinces, the absence or presence of lotteries being among the most noteworthy. This chapter then concludes with a sample of what appeared to be unique policy tools implemented by each province.

Before proceeding further, however, it is worth noting that the analysis found, in terms of frequency of use and not magnitude of effect, that capacity tools were, by far and away, the type most used. Learning tools were least and rarely used. In the midrange were symbolic tools and incentive tools, which were used extensively, followed by authority tools, which were used to a lesser degree.[32]

Background: Canadian Federal Government

To understand provincial efforts in fighting VH, a brief examination of the federal context is helpful. In contrast to Australia (Maclean & Elphick, 2020), for example, Canada's Federal Government did not use its Emergency Measures Act for Covid-19 (Dunham, 2020; Trudeau, 2020). One can speculate the federal government's resistance was because the last Prime Minister to use such a measure was Pierre Trudeau, and his son may have wanted to avoid any political blowback related to public perceptions.

Pierre Trudeau declared the War Measures Act during the October Crisis in 1970, (Connolly, 2022a; McIntosh & Cooper, 2013; D. Smith et al., 2020), which involved bombings, kidnapping, and murder (CBC Learning, 2001), terrorism in today's terminology. As challenging as it was for residents, the weeks-long trucker occupation of part of downtown Ottawa did not amount to terrorism (see Lamoureux, 2022; Pringle, 2022, for details about the protests in and occupation of downtown Ottawa). Ultimately, Justin Trudeau invoked the Act, but in response to the Freedom Convoy in February 2022, not for Covid-19. The subsection, The Response to the Freedom Convoy, in Chapter 6, explores this further, but suffice to say, the federal government left the declaration of states of emergency to the provinces.

[32] The total count from the four western provinces for each of these tools from Appendix 6 yields 183 capacity tools or 51.3%, 83 symbolic tools or 23.2%, 64 incentive tools or 17.9%, 22 authority tools or 6.2%, and 5 learning tools or 1.4%.

For policy tools at least partly meant to address VH, the federal government was active. Well before the pandemic, Budget 2016 announced the creation of the Immunization Partnership Fund, which got extra funding in 2020 for Covid-19 (PHAC, 2017b). By early April 2021, a federal competition for many $50,000 grants "encouraging vaccine confidence in Canada," was closed (Natural Sciences and Engineering Research Council of Canada, 2021). In July 2021, "Patty Hajdu, Minister of Health, announced five new projects…. [to] reduce barriers to vaccine uptake among communities disproportionately impacted… through… culturally relevant vaccination strategies" (Cision Canada, 2021, para. 2). By late September 2021, the federal government announced the requirement for "all federal public servants to be vaccinated… [come] the end of October 2021.... [including] federally regulated industries… [and] federal Crown corporations" (Czarnecki & Wehrle, 2021, paras. 1–2).

On December 7, they expanded that mandate to "all other federally regulated industries, such as road transportation, telecommunications, and banking" (Employment and Social Development Canada, 2021, para. 4). In part, this was meant as a symbolic tool, which Chrystia Freeland made explicit: "As the country's largest employer, the government of Canada is leading by example…. by requiring people who work in the public service to be fully vaccinated" (Skrzypinski, 2021, paras. 3–4). They also set the example of placing those who did not comply on unpaid leave, even making them ineligible for employment insurance benefits (Skrzypinski, 2021, paras. 5–6). The ineligibility for employment insurance was criticized, because it did not allow for regular testing in lieu (L. Goldstein, 2022, para. 11), a topic which is central to the conclusion of this thesis; and the federal government was further criticized for having inconsistent and incoherent suites of restrictions, and for "failing to be open, honest, and transparent with the public" (para. 16). While the preceding represents a sample of the policy tools used by the federal government to at least partly address VH, the next section summarizes instruments used by the four western provinces that were substantially similar across all four.

Similarities and Minor Differences Between the Four Provinces

There are two topics involving major similarities worth a brief examination to start. The four western provinces all generated many press releases and news conferences for Covid-19 (Government of Alberta, n.d.-g; Government of BC, n.d.; Government of Saskatchewan, n.d.-e; Province of Manitoba, n.d.-k), and some of these touched on VH. Some of these messages are discussed below, but generally, these amounted to building communications capacity tools, something experts recommend. While a limited number were related to VH, these types of tools were foundational to all governmental efforts involving Covid-19, how effective they were varied, but in terms of building communications capacities, they all excelled.

Related to this is how the provinces all took a multifaceted, layered approach to address Covid-19 and its many derivative issues, including VH. This was noted explicitly in June 2021 by the Saskatchewan Health Authority (SHA) Testing Chief, Carrie Dornstauder, regarding the deployment of rapid antigen tests, as these were part of a "multi-layered approach… added to our pandemic response along with vaccination" (Saskatchewan Ministry of Health, 2021b, para. 5).

Experts recommend taking a layered approach specifically for VH, and it is apparent that all Canadian jurisdictions did so, both for Covid in general and specific to VH; the many following sections show this, so layering strategies will be discussed little further in this thesis, but worth noting, a major challenge was having coherent policy sets within and across governments (see Maggetti & Trein, 2022; OECD, 2020, for discussions on addressing this issue).

Capacity Tools Improving Access to Vaccinations

The provinces were highly similar in one key approach to VH, facilitating access to vaccinations, almost if not all of which were capacity tools. Their early efforts were about uptake, not hesitancy, but set the groundwork and later transitioned into ways of addressing VH. All began by focusing their vaccine deployment efforts on long-term care and assisted living facilities, and the front-line workers in those facilities (Government of BC, 2020b, paras. 6–9; Government of Alberta, 2020b, sec. Vaccine distribution; Province of Manitoba, 2020a, paras. 2, 6; Saskatchewan Ministry of Health, 2020c). Their next steps involved identifying vulnerable populations,[34] apart from the facilities just mentioned, including their oldest citizens and older indigenous populations,[35] often in more remote regions (First Nations Health Authority, 2021a, para. 2; Government of Alberta, 2020c, para. 7; Province of Manitoba, 2021c, para. 1; Saskatchewan Ministry of Health, 2021c, paras. 3, 5).

Soon came the mass vaccination campaigns, for which the first mass clinic appeared in Manitoba on January 4, 2021 (Province of Manitoba, 2020c, para. 2), well ahead of the other provinces that followed in March and April (Government of Alberta, 2021d; Henry & Dix, 2021b; Saskatchewan Ministry of Health, 2021e). Although these too were initially intended merely to increase VU, these transitioned to VH efforts. Then came the bulk of mass vaccination clinics, the expansion of availability through pharmacies and pop-up clinics (Government of BC, 2021ac, para. 6), and means of booking appointments both by telephone and online; there were also online lists of vaccination locations as they changed through these campaigns (Government of BC, 2021c; Government of Alberta, 2021e, 2021n; Hinshaw, 2021b, paras. 28–29; Province of Manitoba, 2021r), and orders and agreements that increased the number and types of professionals who could administer vaccines or support those professionals (Blakley, 2021; College of Dental Surgeons of BC, 2021; Government of Alberta, 2021b, para. 2; Province of Manitoba, 2021l). As this proceeded, the provinces regularly and repeatedly changed eligibility criteria to prioritize people based on risk. By the time mobile and walk-in clinics first appeared, not only were they intended to address uptake (BC Ministry of Education, 2021; BC Ministry of Health, 2021i, paras. 3, 6; Government of Alberta, 2021k, paras. 14–16, 2021l, 2021ak;

[34] Among the vulnerable are those experiencing housing insecurity and homelessness, and Farha et al. (2020) argued Covid-19 presented a not-to-be-missed opportunity for the federal government to bolster its national housing strategy, something that is even more acute since they made this comment.

[35] Levesque et al. (2020) argue if the federal government "does not immediately and comprehensively address the systemic inequities in its services and programs to First Nations… measures aimed at managing the Covid-19 pandemic and potential future health crises will inevitably fail to produce equitable outcomes" (p. 382). This was in a chapter about the effects of systemic discrimination on First Nations regarding Covid-19.

Saskatchewan Ministry of Health, 2021i, paras. 5–6, 2021n, 2021af, 2021au, para. 4), but from their inception, they were also probably intended eventually to address VH.[36]

All four provinces legislated up to three hours of paid leave to get vaccinated (Government of BC, 2021b; Copping, 2021a), the first being Saskatchewan on March 18 (Saskatchewan Ministry of Health, 2021j, paras. 8–9), and the last being Manitoba on May 12, 2021 (Lockton Global Compliance, 2021, sec. Manitoba). When the National Advisory Committee on Immunization (NACI) recommended the interval between first and second doses be increased from 3 to 16 weeks (Zimonjic, 2021), the four provinces made this change within days, a key strategy that ultimately accelerated Canada past other countries previously well ahead in their efforts (see Chapter 2, subsection, Intentions to Get Vaccinated and Actual Uptake). Rates climbed rapidly, especially from mid-March through mid-June, but by November, this slowed tremendously (see Figure 5).

It was at this point, in mid-November, when the Janssen vaccine was finally available in Canada, even though it was approved for use in March (Thurton, 2021, para. 3). Because it is a one-shot vaccine, all four provinces quickly deployed their limited Janssen supplies to specifically target those expressing VH. Other medical treatments were announced too, which were typically prioritized for the highly vulnerable and the unvaccinated, including Sotrovimab in November 2021 (CBC News, 2021k, para. 3; Hinshaw, 2021p; Weeks, 2021), and Paxlovid in January 2022 (Gerwing, 2022; Hinshaw, 2022i; Rabson, 2022; Saskatchewan Ministry of Health, 2022c). They primarily meant all the above efforts to facilitate access and reduce barriers to getting vaccinated, and all four provinces excelled at adopting policy tools consistent with the expert recommendation of improving access.

Fines, Penalties, and Enforcement

Another key similarity was the use of fines and penalties as incentive tools to address those who did not comply with public health orders, and while some of these related to vaccination status, their link to VH is tangential. While the four provinces all implemented fines, few of these fines were specifically for not being vaccinated. Instead, they were typically broad in scope, for violating public health orders which could therefore include not being vaccinated in a space where a vaccine passport was required.

These varied in magnitude, the lowest being in BC for $230 (Office of the Premier, 2020b, para. 9).[37] Saskatchewan, BC, and Manitoba differentiated between fines for individuals

[36] Saskatchewan was an early adopter of mobile clinics, where they first appeared in March 2021 (Saskatchewan Ministry of Health, 2021i, para. 6); Alberta had early mobile clinics targeting elderly homebound citizens in March (Government of Alberta, 2021k, sec. “Providing”), and walk-ins as early as April (Government of Alberta, 2021l, sec. “Pharmacy”), but these early clinics were unlikely to have been intended to address VH.

[37] The range of fines in BC, for example, were as follows: Individuals could be fined $230 for being at an event and refusing “to comply with the direction of an enforcement officer…. Engag[ing] in abusive or belligerent behaviour in relation to the order… [or failing] to comply with an event condition such as dancing or congregating with others” (Government of British Columbia, 2021a, sec. “for individuals”); individuals could also be fines $230

and those for corporations (Office of the Premier, 2020b, para. 9; Province of Manitoba, 2020b, para. 8; Vittorelli, 2020, para. 2), but Alberta had no such distinction. The largest fines were in Alberta and Saskatchewan, each for $100,000 (Government of Alberta, 2020a, sec. “Strong”; Vittorelli, 2020, para. 2): In Saskatchewan, this was the maximum fine for corporations for the broad category of those not complying with public health orders, which had originally been set at $10,000 (Vittorelli, 2020, para. 1).

More narrowly related to vaccination status, one could be fined $100,000 for falsifying vaccination records in Alberta (Government of Alberta, 2021ao, para. 12). In November 2021, Alberta also noted how they would not “accept verbal history for proof” of vaccination (Hinshaw, 2021c, paras. 4–7). BC announced in mid-December 2021 that vaccine records that were “suspected to be fraudulent” were reported to law enforcement (Government of BC, 2021d, paras. 1–2). It is unclear if anyone had to pay these highest fines, but all four provinces had many instances of smaller fines being issued for a variety of reasons (see Appendix 6 for more examples).

In BC and Manitoba, fines remained the same throughout the analysis period (CBC News, 2022d; Province of Manitoba, n.d.-n, sec. Enforcement Information, 2020b, para. 8), Saskatchewan changed the level of fines at least once, and Alberta did so multiple times (CBC News, 2022a, para. 6; Government of Alberta, 2021q, sec. Strengthening enforcement; Vittorelli, 2020; White, 2021a, para. 4). One reason Alberta doubled its fines in May 2021 was for repeat offenders, for which they implemented a new protocol to “coordinate a multi-agency response” (Government of Alberta, 2021q, para. Strengthening enforcement).

Messages on the Efficacy & Safety of Vaccines to Educate and Inform HCPs

Experts also highlight the importance of conveying messages about the efficacy and safety of vaccines to educate and inform HCPs, and in turn, to communicate with their patients. Indeed, all four provinces created a great many messages about vaccine safety and efficacy (BC–CDC, n.d.-b; Government of Saskatchewan, n.d.-b, n.d.-c, n.d.-g; Hinshaw, 2021f, 2021g, paras. 18–24; Province of Manitoba, n.d.-o), but relatively few were aimed specifically at HCPs. Instead, they were generally broadcast, but given that Covid-19 was a pandemic, it was impracticable for most of these messages to be HCP specific. Sometimes, however, these were poorly or questionably crafted.

The following is an example from BC: “Our vaccines are highly effective. However, we are starting to see a gradual decline in protection over time” (Government of BC, 2021y, para. 3). Indeed, this was factual, and perhaps governments had a duty to report it, but to those expressing

for being at a restaurant and “engag[ing] in abusive behaviour towards a restaurant or bar employee in relation to the PHO orders [or] fail[ing] to comply with the patron conditions set out in the Food and Liquor Serving Premises order” (sec. “for individuals”); individuals could also be fine $575 for attending a “non-compliant event [or] encourage[ing] other people to attend a non-compliant event” (sec. “for individuals”). Owners, operators, and event organizers could be fined $2300 for “fail[ing] to check a person's proof of vaccination…. [for hosting] a non-compliant event…. [or for not meeting] the requirements of the Food and Liquor Serving Premises order (sec. "Violation tickets for proof of vaccination... [to] tickets for food and liquor serving premises").

VH, it may have conveyed a lack of efficacy. Another example is one from Alberta from March 24, 2021, about rare risks with the AstraZeneca vaccine: "This condition is treatable and very rare. Globally, this outcome has been reported in about *one in 1 million doses* [emphasis added]" (Hinshaw, 2021d, para. 36), but MacDonald et al. (2018) recommended examples like this should be framed as 99.99% safe (p. 221).

These types of messages covered a range of topics, such as the safety of children's vaccines (Government of BC, 2021aa), issues about fertility and pregnancy (Hinshaw, 2021j), and a few dispelling myths about vaccine inefficacy that repeatedly proliferated online, especially through social media, like rumours claiming "that vaccines are not working against the Delta variant… [which were] categorically untrue" (Hinshaw, 2021l, para. 27). While the provinces created an extensive number of these types of messages, it is unclear if, being broadly targeted, they were effective against VH. It is reasonable to speculate that those who are most prone to VH are not receptive to mainstream information, so this might have backfired, but again, governments were duty-bound to communicate this information. However, there were examples of using more direct, narrow channels via HCPs, as experts recommend, and while these were relatively few compared to the abundance of those that were broadcast, they were numerous, nevertheless.

There is a guide for HCPs from the federal government which has links to webpages about vaccine safety and adverse events (PHAC, 2007, 2021a, 2022), another similar guide for HCPs from the Alberta Medical Association (2021), and web-based courses for HCPs to address VH (Berry, 2021; Canadian Pediatric Society, n.d.-b, n.d.-a). There are online resources for VH and dispelling myths in Saskatchewan, largely targeting HCPs (SHA, n.d.-b, n.d.-a, 2021b), and similar ones in Manitoba (Province of Manitoba, n.d.-j, n.d.-m, n.d.-d, n.d.-i), who also had a novel approach: They had a team of physicians that provided advice and guidance to better inform concerned citizens at vaccine super sites and doctor's offices (Province of Manitoba, 2021w). Thus, all four provinces met this expert recommendation, even if dwarfed by comparison to the large number of broadcast messages of this nature.

Building Communications Capacity Through Townhalls

A capacity tool used by all four provinces was the use of various types of townhalls, and this met the expert recommendation of building communications capacities. Some of BC's townhalls were run by Bonnie Henry (Government of BC, 2021a), and another by John Horgan (Government of BC, 2021g); Alberta had them on issues around vaccine safety and efficacy for particular populations (Hinshaw, 2021o, 2021t); SHA had town halls meant primarily for physicians in Saskatchewan (Schick, 2021); and Manitoba had a series of them to allow citizens to engage and ask questions of experts (Manitoba Government, 2021, 9:55–10:26).

Positive Messages that Appealed to Altruism

With the messages that were crafted to address VH, all four provinces were again similar. In terms of tool-types, these messages fell into two categories: They were either symbolic tools

or capacity tools, and often they were both. Consistent across all provinces was the use of positive messages that appealed to altruism, a recommendation made specifically for Covid-19 vaccination communication (Chou & Budenz, 2020). These were appeals to protect the community (Province of Manitoba, 2021ah, para. 3; Saskatchewan Ministry of Health, 2021m, para. 7), or to the needs of the vulnerable, like older citizens or children, (Government of BC, 2020b, paras. 6–9; Elmore, 2021, para. 7; Government of Alberta, 2021ap, para. 5; Hinshaw, 2022e, 2022f, paras. 44–45), as vaccines were not initially available for those younger than 16, then younger than 12, and on July 14, 2022, the first vaccine was approved for those under 5 years of age (Health Canada, 2022).[38] All four provinces effectively reflected this expert recommendation.

Presumptive Communication

The recommendation for presumptive communications is meant to apply to the context of the interpersonal relationship between HCPs and their patients. There is no evidence that any province made any specific effort to foster such communications in these interactions, so this may have been a missed opportunity. Nevertheless, all provinces employed a presumptive approach to a relatively small number of their broadcast messages (Government of BC, 2021ad, para. 6; Office of the Premier & Ministry of Health of Saskatchewan 2021, para. 13; LaGrange, 2021, para. 4; Whiteside, 2021, para. 10). For example, "when it is your turn… [get] immunized as soon as possible" (Province of Manitoba, 2021v, para. 6). Because the use of these types of messages relies significantly on interpersonal relationships, however, and is not merely about being presumptive, these broadcast messages did not specifically conform to what experts recommend.

Messages Applying Normative Pressure

Messages applying normative pressure typically involved frequent reports of the percentage of residents vaccinated or when target benchmarks were reached (Government of Alberta, 2021ax, paras. 1–2; Henry & Dix, 2021f, para. 8; Government of BC, 2021h; Province of Manitoba, n.d.-l, 2021af; Saskatchewan Ministry of Health, 2021ab, para. 3, 2021am), and sometimes requested people to "join" those who were already vaccinated (BC Ministry of Health, 2021i, para. 5). In terms of expert advice, this was appropriate (MacDonald et al., 2018, p. 219; Thomson et al., 2015, p. 1022), but only partially so: A generalized approach should probably have been supplemented by efforts targeting specific subgroups, although further research on this approach is needed (Attwell & Freeman, 2015, p. 6239), and could have further included leveraging interpersonal networks, as suggested by Pentland (2015, Chapter 1). How effective these messages were in addressing VH is unclear, but they also performed the function of reporting on progress, which helped to legitimize government efforts by demonstrating

[38] See Appendix 1 for when vaccines were announced for each age group and the relevant references, and note the vaccine approved for those under five did not include infants under 6 months of age.

transparency. With many non-subgroup-specific messages, all four provinces at least partially met this expert advice.

Messages Featuring Loss-Framing when Appealing to People's Self-Interest

Another type of expert-recommended message they all used, most of which were crafted appropriately, were ones which featured loss-framing when appealing to people's self-interest (BC Ministry of Health, 2021r, para. 15; Province of Manitoba, n.d.-b; Saskatchewan Ministry of Health, 2021ah, para. 1). A typical example was noting risks of ICU admissions in terms of rate ratios by vaccination status, e.g., how the unvaccinated were "40 times more likely to be admitted to the ICU" than the fully vaccinated in Alberta on September 23, 2021 (Hinshaw, 2021l, para. 25). From Saskatchewan in early September 2021, "nearly 84% of all new cases and hospitalizations… in August were unvaccinated or partially vaccinated people" (Saskatchewan Ministry of Health, 2021ah, para. 1). Or in BC, when on September 9, they began to use rate ratios in their messages: "After factoring for age, people not vaccinated are 34 times more likely to be hospitalized than those fully vaccinated" (BC Ministry of Health, 2021r, para. 15). A few weeks prior, BC had already changed its pandemic update format to include data differentiating cases based on vaccination status (BC Ministry of Health, 2021m, paras. 9–12). These types of messages only appeared as summer 2021 ended and well over two-thirds of those eligible had received at least one dose. All four provinces repeated such messages many times, consistent with expert advice.

Admonishing the Unvaccinated

Some high-profile public figures admonish the unvaccinated, going against expert advice. Although it was largely true by September that the pandemic had reached a point that it was a "crisis of the unvaccinated" (Short, 2021), this was an unwise statement from Jason Kenney. It was claimed in an article by the Canadian Press that Adrian Dix also admonished the unvaccinated in September (N. Wells, 2021), and while his frustrations were understandable—they were in the context of protests outside hospitals related to the vaccine passport—this goes against expert recommendations; but in watching the news conference to which that article referred (CPAC, 2021), Dix did not do as claimed; instead, he expressed frustration about people not being vaccinated (7:00–9:21); but separately, while acknowledging the right to protest, he said "yelling at our health-care workers serves no purpose" (10:23–11:25). Thus, he did not admonish the unvaccinated so much as he was critical of protestors for harassing HCPs.

Also in September, Premier Moe criticized northern First Nations for low vaccination rates, which the Federal Indigenous Affairs Minister said was an "alarming and unproductive" comment (Warick, 2021, para. 3). Moreover, Saskatchewan made it clear in September that the pandemic was "primarily driven by the unvaccinated population" at the time (Saskatchewan Ministry of Health, 2021aj, para. 1). The present research efforts found no message of this sort from Manitoba, however. This nevertheless demonstrates the challenge of communicating factually while simultaneously needing to consider the potential negative consequences of such

messages. While the current section explored most of the tools with significant similarities, the following section explores the most conspicuous tools of all.

Table 1 – Summary of Similarities

	BC	AB	SK	MB
General Level Recommendations				
Built communications capacity	✓	✓	✓	✓
Used multi-layered strategies	✓	✓	✓	✓
Improving Access — Expert Recommendation				
Many vaccination venue types	✓	✓	✓	✓
Many means of booking	✓	✓	✓	✓
Expansion of vaccinators	✓	✓	✓	✓
3-hours paid leave	✓	✓	✓	✓
Inter-dose period increase	✓	✓	✓	✓
Janssen, Sotrovimab, & Paxlovid	✓	✓	✓	✓
Fines — Neutral in Terms of Expert Recommendation				
Various fines	✓	✓	✓	✓
Townhalls — Expert Recommendation to Build Communication Capacity				
Various types	✓	✓	✓	✓
Messages — Expert Recommendation				
Inform HCPs re: safety & efficacy	✓	✓	✓	✓
Positive & altruistic	✓	✓	✓	✓
Used presumptive style	Partly met	Partly met	Partly met	Partly met
Normative pressure: % vaccinated	✓	✓	✓	✓
• Subgroup specific	×	×	×	×
Loss-framed appeals to self-interest	✓	✓	✓	✓
Did not admonish the unvaccinated	✓	×	×	✓

Vaccine Passports and Vaccine Mandates

Vaccine Passports

Undoubtedly, the highest profile tools implemented by the provinces were the inter-related vaccine passports and vaccine mandates, essentially incentive tools. Although mandates could be classified as authority tools, they are not like stop lights, something that people obey typically without hesitation. Instead, much like the passports, they were primarily coercive, just more so, and thus should be categorized as incentive tools. Experts caution against the use of mandates because they have the potential to bolster anti-vaccine sentiments (MacDonald et al.,

2018, p. 220). This was acknowledged in early August by Bonnie Henry when she announced the mandate for all long-term care and assisted living staff, saying there might be some "backlash" (Judd, 2021b, para. 20).

Of course, vaccine passports were a unique innovation in response to Covid-19. Previously, a vaccine passport was merely a portable vaccine schedule document and its purpose was to provide information about vaccines a person had received and when they might be next due (Chadwick et al., 2018, p. 1191); they had nothing to do with regulating access to public and private spaces, but because they are something closely related to vaccine mandates, it is fair to assume that similar expert caution applies. In the US, Iyer et al. (2022, p. 9) measured people's attitudes on how they thought passports would affect their behaviours, concluding the effect of passports on VU would be weak, while similar research in Europe, also only on attitudes, showed a 2.5 percentage point increase in VU (Klüver et al., 2021, p. 1). Certainly, even small increments are likely valuable in trying to achieve herd immunity, and while mandates and passports had an impact, they also generated extensive debate, caused a schism, and led to the dramatic Freedom Convoy, issues explored further in The Response to the Freedom Convoy section of Chapter 6. Nevertheless, all four provinces took a similar approach with these various tools, but there were important differences too.

The first mandate- or passport-related tool was announced in Manitoba on June 8, 2021, the Manitoba Immunization Card (Province of Manitoba, 2021ad). They were the earliest in Canada to adopt this tool, and Saskatchewan was next to announce its position on passports when on June 29, Premier Moe said "the Government of Saskatchewan is *not* [emphasis added] moving [in] that direction" (CKOM News, 2021, para. 12). Next was the August 23 announcement of a bona fide passport, the BC Vaccine Card (BC Ministry of Health, 2021n), followed by Alberta three weeks later, on September 15 (CTV News Calgary, 2021). Last was Saskatchewan, which announced its reversal of course on September 16, (Saskatchewan Ministry of Health, 2021aj), giving it a proper name days later, the "Saskatchewan Vaccine Wallet" or "SK Vax Wallet" (Saskatchewan Ministry of Health, 2021ak, para. 9).

Alberta named its passport the Restrictions Exemption Program (REP) to distinguish itself as supposedly not being a vaccine passport. The "innovation" here was that, rather than impose vaccine passports on various venues and businesses, Alberta imposed restrictions that were loosened if a business opted-in to the voluntary REP (Government of Alberta, 2021ah, sec. Restrictions Exemption Program). Initially, this was not unique to Alberta, as on September 28, Saskatchewan announced that "employers outside the public service… [could] voluntarily opt-in should they wish to implement a proof of vaccination or negative test policy for employees" (Saskatchewan Ministry of Health, 2021an, para. 3). By September 30, however, they announced it would "be *required* [emphasis added]… for public access to a range of businesses [and] event venues," i.e., it was no longer optional (Saskatchewan Ministry of Health, 2021ap, para. 1). Alberta's effort appeared to be an attempt to avoid having it publicly labelled as a vaccine passport, ineffective as this was.

Three provinces reported a dramatic increase in first-dose vaccination rates in the days immediately following the announcement of vaccine passports, all of which were roughly doubled over the short-lived period of a matter of days (Government of BC, 2021p; Joannou, 2021, para. 1; Saskatchewan Ministry of Health, 2021am, para. 2). The exception was Manitoba, for which research for this thesis found no evidence of such reporting. However, when seen over the timeframe of mid-May 2021 through mid-February 2022, these dramatic but short-term increases are not apparent (see Figure 5). Not to minimize the effect of passports, but their short-term consequences were probably much less important than how they likely prolonged the long-run trend of increasing vaccination rates—they probably shifted the trend lines for each province on the graph upwards.

Other similarities related to vaccine passports were the tools implemented in their support. For example, the passports for the four provinces all evolved to include the use of QR codes and mobile phone apps both to show and verify these codes (Government of Alberta, 2021as; Government of Saskatchewan, n.d.-f; Government of BC, 2021m; Province of Manitoba, n.d.-g). Of course, along with these passports was a dizzying array of different capacity limits for various specific venue types, which changed as waves ebbed and flowed. Restrictions like these began long before vaccines were ever available (Miller, 2020), but the advent of passports helped loosen them, and while these passports were substantially similar, there was one key difference, testing in lieu (see also the Reasons for Accommodations subsection in the present chapter and Chapter 6 in the Answering the Research Questions section).

Negative lab tests within the previous 72 hours were allowed in place of proof of vaccination in both Saskatchewan and Alberta, but the individual bore the costs (Hinshaw, 2021k, paras. 4–6; Saskatchewan Ministry of Health, 2021an, para. 4); and while rapid tests were allowed for this purpose in Alberta (Kost, 2021a, para. 16), they were not in Saskatchewan (Saskatchewan Ministry of Health, 2021an, paras. 9–11). BC and Manitoba, however, did not allow for negative lab tests for their vaccine passports (Government of BC, 2021c; Province of Manitoba, 2021ad, para. 4). On October 15, Saskatchewan announced the expansion of their passport program to include liquor retail outlets (Saskatchewan Ministry of Health, 2021aq, para. 2), something that only appears to have been done in one other province, Quebec in January 2022 (Montreal Gazette, 2022).

On February 8, 2022, Alberta was the first in Canada to end its passport. Soon followed Saskatchewan on February 14, then Manitoba and Ontario on March 1 (Harris, 2022, paras. 8, 10). BC was more cautious and waited until April 8 to drop theirs (Kotyk & Hasegawa, 2022). Much like during the initial announcement of passports, their ending too was controversial, and they were effective, but whether they were justifiable is considered in the Mandates, Passports, and Questions of Justification subsection of Chapter 6.

Vaccine Mandates

Along with these passports were vaccine mandates. Universities were among the earliest adopters of this tool in Canada, such as a few universities in Saskatchewan and Manitoba by the

third week of August 2021 (Canadian Press, 2021b). The process of vaccination verification was highly simplified by introducing vaccine passports, one way these tools were interrelated. This was an example of how governments played a role in supporting mandates imposed by postsecondary institutions, and while they left the decision to the institutions themselves,[39] they may have encouraged this behind closed doors. The first apparent provincially imposed mandate was announced in BC on August 12 for front-line HCPs working in assisted living and long-term care homes (Judd, 2021b), but many more followed.

On August 24, Manitoba announced one for all public employees working with vulnerable populations, including direct health-care providers (Province of Manitoba, n.d.-n), and Saskatchewan announced a mandate for front-line HCPs on August 30 (Saskatchewan Ministry of Health, 2021ae, para. 11). The next day, Alberta Health Services (AHS) announced one for all its employees and contractors, but unlike elsewhere, this was not directly implemented by the province (CTV News Edmonton, 2021), contributing to tensions between AHS and the Kenney Government (Climenhaga, 2021). On September 10, the SHA announced the mandate for front-line HCPs would expand to include all HCPs (Saskatchewan Ministry of Health, 2021ai, para. 16), and BC did the same three days later (Judd, 2021c). However, there was push back even from respected public organizations, like in mid-September when the BC Nurses' Union (2021) said, while it "strongly supports vaccination…. [they remained] concerned that the mandatory nature of the vaccination strategy will force members to leave, further exacerbating a staffing shortage" (para. 6).

Next came public service-wide mandates in each province, except Manitoba. The first was announced by Saskatchewan as an "interim" measure on September 16 (Meridian Source, 2021), the next announced by Alberta on September 30 (CBC News, 2021g), and then BC's October 5 announcement (Government of BC, 2021a). Manitoba made no changes, as their only mandate already covered public employees, but was limited to those who had contact with vulnerable populations. Effective December 15, however, Manitoba required all those who attended the legislature to be vaccinated, including MLAs (K. Rosen, 2021).

BC Public Service Agency (BCPSA) employees and HCPs who did not comply were put on unpaid leave with no option for frequent testing (Government of BC, 2021b; Judd, 2021c).[40] The same was initially true for AHS employees (CTV News Edmonton, 2021), but while Alberta public servants were also put on unpaid leave for failure to comply, they had the option of regular testing (CBC News, 2021g); yet, as explained below, frequent testing was soon introduced for AHS employees, too. The mandate which covered fewer categories of employees in Manitoba also imposed unpaid leave for non-compliance (S. Thompson, 2021, para. 1), but they had the option of frequent testing: "Designated public-sector workplaces… [were] required

[39] Worth noting, however, the Government of BC mandated vaccines for students living on campus (BC Ministry of Advanced Education and Skills Training, 2021b, para. 8).

[40] Initially, regular testing was an option in BC, which was the case as of late July 2021 (Vogel & Duong, 2021, para. 7), but by August 12, it was announced this would no longer suffice (Government of BC, 2021k).

to make rapid testing available on-site" and it appeared individuals did not have to pay (Gordon, 2021, para. 5), also implied in a CTV News Winnipeg (2021) article, and because Manitoba "budgeted $300,000 until year's end to deliver the tests" (Froese, 2021, para. 35). Saskatchewan permitted "proof of a negative test result on a consistent basis" for its public servants (Saskatchewan Ministry of Health, 2021aj, para. 6), and for SHA employees (Saskatchewan Ministry of Health, 2021ae, para. 11); in both cases, the cost was borne by individuals (Saskatchewan Ministry of Health, 2021aq, sec. Proof of a Negative Test). Saskatchewan was silent on what to do when a SHA or public service employees did not comply, but it appears they would be put on unpaid leave or possibly fired (Canadian Press, 2021e, para. 3).

On November 29, the Kenney Government announced it was "temporarily" suspending the AHS mandate at healthcare sites experiencing dire staffing challenges (Government of Alberta, 2021aw). On December 23, they announced an expansion to include all AHS employees (Government of Alberta, 2021ba), and both these actions are examples of further conflict between the Kenney Government and AHS. These were not a full suspension of the mandate, however: Instead, they then permitted negative lab tests in lieu of vaccination, yet on March 8, 2022, AHS fully lifted the mandate, as directed—some might say interfered with—by Health Minister, Jason Copping, (Heidenreich, 2022, paras. 1–2), while they lifted the mandate for public servants a week prior (CBC News, 2022f, paras. 1–2).

In April 2022, Alberta fired the AHS CEO a year before the end of her contract. They paid her $573,000, a year's salary, as severance dictated by the terms of her employment contract. This was the culmination of the conflict between AHS and the Kenney Government, and the latter's politicization of policy direction (Johnson, 2022). In contrast, Premier Horgan of BC was clear in his February 8, 2022, post-Throne Speech comments that elected officials would follow advice rather than direct the actions of public health officials (Chiang, 2022, paras. 1–2).

Saskatchewan ended its public service and SHA mandates on February 14 (Saskatchewan Ministry of Health, 2022g; Skjerven, 2022, paras. 1–2). Manitoba lifted its mandate for public service employees on March 1, 2022 (Lambert, 2022, paras. 1–2). However, as of August 2022, BC's mandate for its public service agency remained (BCPSA, n.d.), while, by the end of March, they changed the one for HCPs. They still required HCPs in specific settings to be vaccinated, but in other settings, they lifted the requirement and instead, employees had to disclose their vaccination status; this informed patients, so they could choose to engage such HCPs or not, the so-called "informed consent" system (Daflos & Weichel, 2022).

Unlike vaccine passports, governments provided no data for the effects of these vaccine mandates; and doing this work for this thesis would have been onerous, making their evaluation practically impossible; yet they likely had a net positive effect, but how strong is unknown (see Chapter 6 in the Answering the Research Questions section for further discussion of this matter).

Reasons for Accommodations

Some of this was already acknowledged in the previous two sections but is worth expanding. An authority tool that bolstered the legitimacy of vaccine passports and mandates was having accommodations for those who could not be vaccinated. In BC, there were absolutely no accommodations for its vaccine passport, except for children under 12 (O'Brien, 2021, sec. British Columbia). However, there were potential accommodations for the HCP-mandate on a case-by-case basis (Judd, 2021c, paras. 1–6), and was presumably on medical or protected grounds. As for the BCPSA vaccine mandate (Government of BC, 2021a), exemptions were possible "based on a medical condition or other legitimate grounds" (Government of BC, 2021b, para. 6), "as defined under BC's Human Rights Code" (BCPSA, n.d., sec. "Medical"). Presumably, a person seeking an accommodation had to show why those grounds implied one could not be vaccinated, and since there were no testing in lieu options in BC, this implies that when accommodations were granted, no testing, paid or not, occurred.

Alberta had something similar for its REP, but they were more explicit, saying they permitted any "valid medical exemption…. [and venues must] accommodate a person with a disability or another relevant protected ground, such as religious beliefs, that supports that the person cannot be vaccinated…. [but not based on] personal opinion or political beliefs" (Alberta Human Rights Commission, 2021, para. 1). As for Alberta Public Service employees, those who did not get vaccinated were given "education about the safety and efficacy of vaccines, in addition to the other testing requirements" (Government of Alberta, 2021am, para. 6); and it is likely those public servants who were granted accommodations were treated consistent with the AHS mandate: If AHS granted an employee an accommodation for a "medical reason or for another protected ground under the Alberta Human Rights Act" (Yiu, 2021, p. 3), they did not have to pay for tests (p. 4);[41] only those who were unvaccinated without an accommodation had to pay for in lieu tests (pp. 3–4).

For any employee under their vaccine mandate, Manitoba permitted accommodations for valid medical reasons or on protected grounds (The Manitoba Human Rights Commission, 2021), and at least on medical grounds for their passport (McKendrick, 2021), so probably on protected grounds too. The province gave a list of reasons for potentially granting medical exemptions (Doctors Manitoba, 2021), and the length of this extensive list appears to have been unique. Also unique to Manitoba was the possibility for "political beliefs" to constitute grounds for accommodation, and the key requirement was for those beliefs to be demonstrably sincere, yet religious reasons had to be connected to sincere beliefs as well (The Manitoba Human Rights Commission, 2021, sec. 14). When Manitobans received passport accommodations, they received passports identical to the regular ones (MacLean, 2021), and no evidence supporting the

[41] The language is somewhat ambiguous: Either those granted an accommodation were exempt from testing, or they were required to submit to testing but were exempt from paying for such tests. However, since section 3, Workplace Accommodations, excludes any mention of testing, this suggests that no testing was required.

notion they had to submit to for testing in lieu was found through extensive research, so presumably, this was not required in such cases.

However, with Manitoba's vaccine mandate for judges and some court staff, they were not required to show proof and relied instead on the "honour system" (Schmitz, 2021, para. 9). Unique to this group, a judge who disclosed they were unvaccinated, even without good reason, remained on full pay, with or without being assigned duties (Schmitz, 2021, para. 11). This was because of technical legal reasons, some related to judicial independence (Schmitz, 2021, paras. 12–14), but the average Manitoban likely did not view this as terribly "just."

Saskatchewan had the option of testing in all cases, so they explained that "securing affidavits objecting to immunization…. [had] no purpose" (SHA, 2021c, para. 2). However, since accommodations were possible based on their Human Rights Code (Saskatchewan Ministry of Health, 2021an, para. 5), those who sought accommodations for "medical reasons… [had] to show a supporting doctor's note" (CBC News, 2021e, para. 8); and it appears religious grounds were also a potential reason (para. 5). SHA employees granted an accommodation were likely exempt from the requirement from testing in lieu. Yet the wording is somewhat ambiguous (Saskatchewan Ministry of Health, 2021an, para. 5), but it suggests they were exempt from testing, instead of being required to submit to testing. Since this appears to be the case for SHA employees who were granted accommodations, this is assumed in the case with the public service sector mandate and the vaccine passport, as no evidence to the contrary was found.

Data on the number of accommodations granted was not forthcoming in any of the four provinces, even though they were requested from provincial authorities for this thesis, but one news article sheds some light: By mid-December, 2021, AHS had received over 11,000 requests, 251 of which were on medical grounds, and only 40% of those 251 were granted; 883 requests were on religious grounds, approving only a few (Valleau, 2021, paras. 20–26). To put this into perspective, there were approximately 130,000 AHS employees (AHS, n.d.), so 77.2 accommodations granted per 100,000 people, plus a little more to account for the religious accommodations, so less than 80 per 100,000.[42] If accommodations for the rest of Alberta were granted at the same rate as AHS, this would mean roughly 3,500 Albertans were granted such accommodations,[43] relatively few. Assuming this case is representative of other provinces, even if only very roughly, then the number of accommodations granted was many scales of magnitude lower than the number of citizens vaccinated.

Accommodations and testing in lieu satisfied legal requirements resulting from passports and mandates, but these fundamentally involved ethical considerations. While evaluations of the moral considerations concerning passports, mandates, accommodations, and

[42] 251 medical accommodations requested x 40% granted = 100 granted; (100 granted / 130,100 employees) x 100,000 = 77.2 granted per 100,000.

[43] 4.4 million Albertans (AHS, n.d.) / 100,000 = 44; (80 accommodations / 100,000) x 44 = 3,520 accommodations granted in Alberta in total.

testing in lieu are discussed further in Chapters 6 and 7, the next section describes the ways the four western provinces substantially differed in terms of the types of policy tools they deployed.

Table 2 – Summary of Vaccine Passport and Vaccine Mandate Comparisons

	BC	Alberta	Saskatchewan	Manitoba
Passports				
Announcement to end	Aug 23 to Apr 8	Sep 20 to Feb 8	Sep 16 to Feb 14	Jun 8 to Mar 1
Name	BC Vaccine Card	REP	SK Vax Wallet	Manitoba Immunization Card
Testing In Lieu[1]	×	✓user paid	✓user paid	×
Accommodations[2]				
Medical	×	✓	✓	✓
Religious	×	✓	✓	✓
Poltical	×	×	Probably not	✓
Mandates				
Some HCPs	Aug 12; Change Mar 31[3]	N/A	Aug 30 to Feb 14	Aug 24 to Mar 1[5]
All HCPs	Sep 13; Change Mar 31[3]	Aug 31 to Mar 8	Sep 10 to Feb 14	Aug 24 to Mar 1[5]
Public Service (PS)	Oct 5; remains	Sep 30 to Mar 1	Sep 16 to Feb 14	Aug 24 to Mar 1[5]
Unpaid Leave, HCPs	✓	✓	✓	✓
Unpaid Leave, PS	✓	✓	✓	✓
Testing In Lieu for Those Without Accommodations				
HCPs	×	×⇨✓ user paid	✓user paid	✓ gov't paid
PS	×	✓ user paid	✓user paid	✓ gov't paid
Accommodations[4]				
Medical	✓	✓	✓	✓
Religious	Maybe	✓	✓	✓
Poltical	Maybe	×	×	✓

[1] This was for people who did not receive accommodations. [2] People who received an accommodation did not require testing: In BC, this was only confirmed for their mandates, since they had no accommodations for their passport; in each case, wording was somewhat ambiguous but likely the true in Alberta, Saskatchewan, and Manitoba. [3] Change to a new approach: HCPs in certain settings were still required to be vaccinated, while others had to inform their patients of their vaccination status through the informed consent system. [4] While wording was somewhat ambiguous, it nevertheless suggested that no testing was required in Alberta, Saskatchewan, and Manitoba for people who received an accommodation. The likelihood of this is bolstered by the fact that it was confirmed in BC the people granted and accommodation did not have to submit to testing. [5] One order covered all these, but this was more limited than later expansions elsewhere.

Major Differences Between the Four Provinces

Lotteries

An obvious difference between provinces was the use of lotteries as incentive tools to encourage vaccination among those who were hesitant or resistant. While research on large inducements continues, such incentives can enhance the perception of risk (Cryder et al., 2010). Appendix 3 is about recent developments in understanding how financial incentives affect Covid-19 vaccination acceptance, and a summary of this makes two things clear: First, recent research suggests such measures should probably target specific subgroups in the US, and so probably in Canada; but none of the provinces that deployed financial incentives did so in a targeted manner, except for the arguable case of Métis Nations Saskatchewan; second, large incentives are not established as substantially changing North Americans' behaviour, only their intentions or attitudes; this, combined with the fact that such measures were not targeted, makes them inadvisable. However, the preceding was unknown when governments were making decisions relevant to VH, but even before, experts warned against implementing financial incentives.

On June 9, 2021, BC Premier, John Horgan, said he would not rule out incentives (Weichel, 2021, paras. 1–3), but BC ultimately never implemented financial inducements. The Province of Saskatchewan did the same and announced on June 15 that they would refrain from such an approach (Global News, 2021). Métis Nation Saskatchewan, however, did implement a lottery, which it announced on the 1st of September. On offer were 191 prizes for 22,000 Métis citizens who were eligible to enter, which included several new vehicles and "80 educational scholarships of $25,000 each for Métis citizens aged 12 to 30" (Kliem, 2021, paras. 9–12).

Manitoba was the first to announce a lottery, which it announced on June 9 and included seven "prizes of $100,000…. and 10 draws for $25,000 scholarships for young people aged 12 to 17 across the province" (Province of Manitoba, 2021ae, para. 4). They added another similar set of prizes within weeks of the first round (Province of Manitoba, 2021ah), but they announced no further prizes. Several days after Manitoba's initial announcement, Alberta first announced its lottery on June 14 and 15.

Here, the largest prizes were for $1 million, one for a first dose and two for second doses, the latter of which were staggered and given out on August 24 and September 23 (Government of Alberta, 2021v, 2021w). Alberta repeatedly added additional prizes to their lottery, like when they added 40 travel prizes on June 16 (Government of Alberta, 2021y), and again, on June 21, they added 635 various Calgary Stampede-related prizes (Government of Alberta, 2021z). On June 29, they announced another new draw, yet again, which gave every Albertan who got their first dose the chance to register for the "Open for Summer Lottery by July 22… [and] chances to win season tickets for football, VIP hockey packages, and rounds of golf in Kananaskis" (Government of Alberta, 2021aa, para. 2).

There were many other smaller prizes too (Government of Alberta, n.d.-i), including lifetime hunting, fishing, and special harvesting licences (Government of Alberta, 2021ac). Beyond these lotteries, however, they also implemented a $100 debit card for anyone who "got their first or second dose between September 3 and October 14," and merely by registering, they received their $100 (Government of Alberta, n.d.-h, sec. $100 Debit Card).[44] The cost to the province was over $15 million to induce upwards of 150,000 residents to get vaccinated (White, 2021b, paras. 1–3). Kenney credited the debit card program for a substantial increase in vaccination rates (Small, 2021, para. 3), but they announced the REP 12 days later, and the increase in vaccination rates in those 12 days was less than 20%, whereas the short-term increase was 200% immediately following the REP announcement (Small, 2021, paras. 14–15). Kenney's dissembling was likely motivated by the desire to construct a narrative to appease his base (Small, 2021, sec. Mandating vs. free market).

The $100 debit card incentive appeared largely ineffective, especially since many of the 150,000 who received it may have gotten vaccinated regardless, but evaluating the success of the lottery incentives is more challenging.[45] One thing is clear, however: Through the period of analysis, BC achieved notably higher vaccination rates than the three other provinces and did so without lottery prizes. Perhaps the other three provinces have populations with a more "independent streak" and have relatively larger indigenous populations, yet this was argued for BC's north, which had low vaccination rates compared to the rest of BC (Kurjata, 2021). That is, the other three provinces might have populations inherently more prone to expressing VH, and thus had a higher hill to climb than BC in achieving high rates.

Indeed, the difference in proportions of Indigenous people is dramatic, and because they are more prone to VH (First Nations Health Authority, 2021b, para. 3; Gerretsen et al., 2021, p. 1; Muhajarine et al., 2021, p. 1), it is worth comparing Canada Census data. In 2016, the percentage of the population that was Indigenous in BC was 5.9%, 6.5% in Alberta, 16.3% in Saskatchewan, and 18.0% in Manitoba (StatsCAN, 2017d, 2017c, 2017b, 2017a). While the challenges for VH involving Indigenous populations are therefore much bigger issues in Saskatchewan and Manitoba, with populations 2.8 and 3.1 times relatively larger than BC's, not so for Alberta. Thus, the smaller Indigenous population proportions put BC and Alberta at an advantage in achieving higher vaccination rates.

An Angus Reid poll from May 17, 2021, showed residents of Saskatchewan and Alberta ranked first and second, respectively, for provinces with the highest percentage of people who expressed VH; 24% in Saskatchewan, 17% in Alberta, 12% in Manitoba, and 11% in BC (Angus Reid Institute, 2021a, fig. 4). Thus, there may be another factor or factors making Albertans

[44] In the early weeks when vaccines were first approved for use, Serra-Garcia and Szech (2022) conducted research in late 2020 through early 2021; this showed US$100 was enough to positively affect people's intentions to get vaccinated, so the CAN$100 (about US$80 at that time) was likely in the appropriate range; but again, this was only intentions, not actual vaccination rates (see Appendix 3 for more details).

[45] Ohio implemented a similar lottery and its positive effects were minimal, perhaps 1 percentage point for overall vaccination rates (Chang et al., 2021, p. 2; see also Appendix 3).

more inherently resistant to vaccinations, but less so than Saskatchewan. All other things being equal, and if Alberta had no lotteries, it should have had vaccination rates better than Saskatchewan, but all other things were not equal: Alberta used lotteries on a large scale, so if they were effective, its vaccination rates should have been substantially higher than Saskatchewan's, perhaps midway between BC and Saskatchewan. Even beyond the period of analysis, however, up to mid-June 2022, Alberta's vaccination rates stubbornly remain the lowest in the country among provinces (N. Little, n.d.-a, n.d.-d, n.d.-b, n.d.-k, n.d.-j, n.d.-i, n.d.-h, n.d.-g, n.d.-f, n.d.-e).[46]

Therefore, either Alberta had a new factor or factors introduced since May 17 that increase VH—but the prior trend was downward—and the lotteries were partly effective in making up some of the difference, or the net effect of Alberta's policy approach caused it to rank lowest in Canada. A plausible explanation is the lotteries backfired, and as noted earlier by Cryder et al. (2010), large inducements can cause people to perceive the associated risks to be higher (p. 455). This potentially undermined the intention of those lotteries, the case for them is weak, and resources could have been better spent elsewhere.

Access Differences

There were two access differences worth highlighting, which fall under the rubric of capacity tools. First, once NACI said mixing brands for first and second doses was safe, BC encouraged people to get vaccinated with whatever was on offer and did not advertise what was available at any vaccination location (Henry & Dix, 2021i, paras. 7–8). Manitoba encouraged the same, and while they initially advertised what brands were at each vaccination site (Hoye, 2021), this did not appear to persist past June. Saskatchewan and Alberta, however, emphasized that people would get whatever vaccine they wanted, and they facilitated this by advertising which brand was available at each location (Bell, 2021, para. 11; Hinshaw, 2021f; Saskatchewan Ministry of Health, 2021p, para. 9). Nothing in the literature review revealed any recommendations around this topic, but it is reasonable to speculate that giving people choice might remove one potential factor contributing to VH by giving them a sense of autonomy regarding vaccine access; indeed, it is plausible and even likely that this formed part of the rationale for this approach in Alberta and Saskatchewan.

The second issue around access was the availability of in-school clinics for children. On May 18, two weeks after vaccines were approved for those 12 and up, Saskatchewan announced clinics in elementary and secondary schools for all of June, the last month of school (Saskatchewan Ministry of Health, 2021r, para. 2). In mid-August, Alberta announced temporary in-school clinics to serve students, teachers, and staff of those schools for the upcoming school year (Government of Alberta, 2021ad, paras. 7–8), and Manitoba started in-school vaccination clinics on September 20 (Bergen, 2021).

[46] N. Little (n.d.-c) provides a separate page for the vaccination rates of each province, so this was determined by comparing them, hence the many entries in this citation.

Once vaccines were approved for 5- to 11-year-olds in November, both Manitoba and Saskatchewan eventually expanded their in-school vaccination programs to include them. Not Alberta, however, because of poor uptake for older children earlier in the fall. In contrast, BC offered no in-school programs, while every other Canadian province did (Bains, 2022). While there is limited discussion of this in the literature (MacDonald et al., 2018, p. 220; Thomson et al., 2015, pp. 1020–1021), it is not specifically recommended; but the general notion of improving access to vaccinations is expert-recommended, so BC missed this opportunity. Why it failed and was later scuttled in Alberta is unclear, but perhaps they implemented it poorly. There is no way to appropriately evaluate these other than noting whether they met with expert recommendations. Therefore, in terms of advertising brands, only Alberta and Saskatchewan succeeded, and in terms of in-school clinics, only Saskatchewan and Manitoba were successful. Next is an issue directly related to in-school vaccination programs.

Consent for Minors

In Saskatchewan, there is no legal age of consent for medical interventions, but SHA explains various nuanced preferences depend on age: An assessment to determine if minors themselves can give consent to a vaccine is possible, but for those 16 and under, parental consent is preferred; and while anyone 12 and under requires a consent form for vaccinations (SHA, 2021a), unique for Covid-19, a parent had to be present for those 12 and under (Salloum, 2021). Manitoba is similar (Province of Manitoba, 2021aa, p. 5), but because of visitor restrictions, parents could not attend in-school vaccinations (Bains, 2022, para. 3).

In Alberta, for vaccines in general, any child might qualify as a "mature minor," and this is determined through an assessment (Alberta College of Pharmacy, 2021). However, for their in-school Covid vaccination program, they announced on Aug 13, 2021, they required consent from a "parent or guardian… for students… through consent forms," with no age distinction, (Government of Alberta, 2021ad, paras. 7–8), making it unclear if an assessment was possible for Covid vaccines. By December 1, in response to some parents "withdrawing their consent for all vaccines at schools because they… [were] worried that their child may receive a Covid-19 vaccine without their knowledge…. [Alberta then required a] parent or guardian's consent and knowledge," apparently withdrawing potential mature minor status uniquely for Covid-19 vaccinations (Hinshaw, 2021t, paras. 33–36). This was in the context of 5- to 11-year-olds, however, who are unlikely to pass an assessment anyway, so this statement amounted to reassurance for parents, not a change in practise.

BC had no in-school vaccination programs, but issues around consent for minors were still relevant. Like elsewhere, BC has no age limit for consent to medical treatments, including vaccinations, and an assessment can be used. Notably, there were no alterations to BC's framework—already in place for several years—nor were there any substantial discussions on the topic: It was a non-issue in BC (Judd, 2021a), probably because of the lack of in-school vaccination programs. As for consent forms, they were "optional and not required for youth to

get their Covid-19 vaccines [and] depending on the clinic location, a health care provider" could use one of two forms (BC–CDC, n.d.-b, paras. 3–4).

Consent instruments could be classified as either capacity or authority tools, but how they conform with expert recommendations is challenging to determine. Indeed, they improve access, but the recommendation for improving access is a practical, logistical issue, whereas consent for minors also has major symbolic value. The personal and social values related to this topic are highly charged, so it suffices to bring attention to the issue without further analysis or evaluation.

Amplifying Voices and Tailored & Culturally Adapted Messages

Another major difference between provinces was the presence or absence of ways to amplify the voices of those who were vaccinated. The only province to do this in any concerted way was Manitoba, through its #ProtectMB campaign, which was first announced on March 17, 2021. This had several components, one of which involved the current topic, and one key subcomponent was a website providing ways people could share stories about their vaccination experiences. This included equipping "the keenest of Manitobans with messages and materials that… [would] help them to encourage friends, family, and their social networks to sign-up and get vaccinated as well" (Province of Manitoba, 2021t, para. 4).

They used an ongoing engagement process, targeted specific populations with outreach programs, and refined and adapted their efforts as they proceeded. Manitoba also had a social media campaign targeted at those 18 to 35, which involved selected influencers who asked questions of an Indigenous physician to debunk myths and misinformation (Province of Manitoba, 2021x). They even had an engagement campaign specifically meant to better understand VH through soliciting feedback (Province of Manitoba, 2021z). Last, they offered "incentive grants… of up to $20,000 to Manitoba organizations, businesses, churches, and others who work in and with low-uptake communities" (Province of Manitoba, 2021ac, para. 8).

Not only were these capacity tools, but the ongoing engagement process made them rare learning tools, too. Indeed, this conformed with the expert recommendation of amplifying the voices of the vaccinated, but it also helped generate tailored or culturally adapted messages, another expert recommendation. They even relied on close ties within people's social networks to apply normative pressure, similar to recommendations by Pentland (2015, Chapter 1, sec. Language), but there was no apparent substantial effort in this direction.

Saskatchewan's Stick It To Covid campaign included TV and YouTube ads appealing to altruism, and in part, these amounted to a small effort to amplify the voices of those who "planned" to get vaccinated, rather than those who already were (Government of Saskatchewan, n.d.-h). In another effort, they spent "more than $1.6 million… on online and print media content, as well as advertising in Cree, Dene, and Michif languages…. [and] sent letters to all households that had one or more residents who were eligible to receive a vaccination, but who had not yet been immunized" (Ghania, 2021, paras. 21–23); these letters fall under the rubric of vaccine schedules (Kreuter et al., 2004), which are closely related to tailored messages, but since

they were merely translations with no changes in content, they were not genuinely culturally adapted.

On at least one occasion, Alberta conveyed a message that encouraged those who knew someone who was "hesitant to… get the shot… [to] share… [their] own experiences and reasons for being vaccinated and encourage them to speak to a healthcare professional" (Hinshaw, 2021n, paras. 27–30); but this was apparently the extent of such efforts. They also had their Sign Up, Show Up, Follow Up campaign, which included no element soliciting stories from the vaccinated and sharing them (Government of Alberta, 2021ab, para. 5), so Alberta missed capitalizing on this opportunity. In BC, one element of the Vax for BC program involved soliciting messages from citizens, but these were only to express gratitude for so-called heroes (BC Ministry of Health, 2021i), and they made no apparent attempt to do something similar to Manitoba. Ultimately then, only Manitoba made a clear, concerted, and substantial effort to amplify the voices of the vaccinated or develop tailored or culturally adapted messages, thus reflecting expert advice. While evaluating the effect of these tools is difficult, given they were largely citizen-driven, they would have cost little.

Leveraging Trust Relationships Between HCPs and Patients

In June 2021, Premier Pallister of Manitoba acknowledged the value of leveraging trust relationships with HCPs: "We know from research and clinical leadership that there are thousands of Manitobans who are open to vaccination, but they need support from people they know and trust to make that decision" (Province of Manitoba, 2021ac, para. 4). By September, his government announced $14 million to support HCPs in addressing VH with their patients to "cover administrative costs and physician fees connected to the outreach, coordination, and visits" (Bernhardt, 2021b, para. 14); and "to support community-focused and one-on-one outreach to improve access to" immunization (Province of Manitoba, 2021ak, para. 1).

Saskatchewan also supported physicians in addressing VH with their patients. In October, they announced the expansion of vaccine availability through physician offices and two new related physician service codes: One was meant "to compensate physicians for counselling unvaccinated patients in their office while they are there for another service," and the other for vaccinating their patients (Saskatchewan Ministry of Health, 2021av, paras. 1–3). In November, they broadcast a related message: "If you are a parent and unsure about the safety of the Covid-19 vaccine, please contact your family physician or primary health care provider" (Saskatchewan Ministry of Health, 2021ax, para. 9). BC nor Alberta made any apparent effort to support HCPs leveraging trust with their patients in trying to vaccinate them and only Saskatchewan and Manitoba followed this expert advice.

Unique Policy Instruments

Many ancillary policy instruments appear to have been unique at the time, but some of these have since been replicated elsewhere. For example, while Saskatchewan's combined flu and Covid appointments appeared to be unique among the 4 provinces in fall 2021, this was

possible in fall 2022 in Victoria, BC (Island Health, n.d., sec. Appointments are required). Nevertheless, the following lists a sample of several of these to illustrate their range and variety.

British Columbia

- On August 4, 2021, BC announced its "first provincewide Walk-In Wednesday…. [with] clinics throughout the province… for anyone 12 years and older still needing their first dose or people eligible to receive their second dose" (BC Ministry of Health, 2021i, para. 6).
- On August 24, BC announced that students living on campus had to provide "proof of vaccination" (BC Ministry of Advanced Education and Skills Training, 2021b, para. 8), whereas, in the other provinces, this was left to postsecondary institutions themselves. In mid-February 2022, they extended this to June 30, 2022 (BC Ministry of Health, 2022e), but on April 5, they announced its repeal as of April 8 (BC Ministry of Health, 2022f, para. 8).

Alberta

- On February 11, 2021, "Premier Jason Kenney said…[they] would pursue additional domestic production of vaccines after Manitoba made a deal to buy two million doses of a Calgary-made Covid-19 vaccine" (Dryden, 2021, para. 1).
- On March 29, they announced a mobile clinic program specifically for those with mobility challenges, "administered by AHS Public Health or Home Care" (Government of Alberta, 2021k, sec. Providing Covid-19 vaccine to homebound Albertans).
- On November 24, they announced a capacity tool supporting other VH tools, a 45-minute REP "safety training… [for] employees of Alberta-based businesses and organizations who are implementing the REP and other Covid-19 safety requirements" (Government of Alberta, 2021av, para. 1).
- On January 20, 2022, Alberta changed their reporting of Covid-19 data, then noting so-called "incidental" hospitalizations: "45 percent of non-ICU Omicron hospitalizations are incidental" (Government of Alberta, 2022c, para. 2), something that was plausibly politically motivated.
- On January 21, a news article noted, as of at least this date, Alberta had "a new vaccine hesitancy advisory committee" (Babych, 2022, para. 5; Bains, 2022, para. 18), but one must wonder how responsive the Kenney Government would be to its recommendations.

Saskatchewan

- On October 19, 2021, Saskatchewan announced residents could get "both flu and Covid-19 vaccinations at the same time and location" (Saskatchewan Ministry of Health, 2021as, para. 15).
- On November 23, they announced, "group appointments for siblings or families" for all to be immunized together (Saskatchewan Ministry of Health, 2021ba, para. 3).
- On November 25, a news article explained how neighbourhood VU differentiation implied a socioeconomic dimension to VH, and how the Janssen vaccine was used to target people in these populations. This included a "micro [targeting] strategy… community by community

[and] very small geographies" as explained by SHA Vaccine Chief, Sheila Anderson (Ellis, 2021, para. 4; Vescera, 2021, para. 10).

Manitoba

- In July 2021, they "introduced the $30-million Healthy Hire Manitoba Program, a new wage support to help private-sector employers reopen and encourage employees to get vaccinated," i.e., to qualify, new employees had to be vaccinated (Province of Manitoba, n.d.-e, 2021ag, para. 11).

Table 3 – Summary of Differences and Remaining Expert Recommendations

	BC	AB	SK	MB
Large Inducements — Against Expert Recommendation				
Lotteries	×	Extensive	Métis Nation only	Limited
$100 debit card	×	✓	×	×
Access Differences				
Advertising brands[1]	×	✓	✓	Not after June
In-school clinics[2]	×	Only at first	✓	✓
Conset for Minors				
Parents must be present	×	×	✓ if < 13	Barred from schools
Assessment possible	✓	Not for in-school	Discouraged if < 16	Discouraged if < 16
Form required	Optional	✓	Preferred[3]	Preferred
Amplifying Voices and Tailored & Culturally Adapted Messages — Expert Recommendation				
Amp voices of vaccinated	×	Very limited	Limited	Extensive
Tailored & cult-adptd msg	×	×	Limited similar tool	Extensive
Leverage Trust Relationships with HCPs — Expert Recommendation				
Outreach	×	×	×	✓
Physician billing codes	×	×	✓	×

[1] Speculated as beneficial. [2] Inferred from expert recommendations. [3] Insufficient if under 13 years old.

This chapter began briefly describing how, in terms of policy tool typology, the majority of tools deployed were capacity tools, followed by a substantial number of symbolic tools and incentive tools, a small number of authority tools, and a rare number of learning tools. The areas of policy tool convergence for the four provinces were then demonstrated. These included many ways to improve access to vaccinations, fines and penalties, and the building of communications capacities, like town halls. This also included many appropriate messages, and while most were targeted effectively, presumptive messages were not optimally applied.

The four provinces also converged with the use of two critical tools, vaccine passports and vaccine mandates, which were highly similar but differed in some key ways: Alberta and Saskatchewan allowed for testing in lieu for their vaccine passports, but not Manitoba and BC;

and while they all applied vaccine mandates to their healthcare and public service sectors, only Manitoba narrowly targeted those who were in contact with vulnerable persons, whereas these were universally applied in the other three provinces; last, only BC did not allow for testing in lieu with their vaccine mandates.

There were also areas of major divergence: First, Only Alberta used lotteries extensively, two provinces used these in limited ways, and BC did no such thing; second, only Manitoba made extensive use of amplifying voices of the vaccinated, along with tailored and culturally adapted messages; Saskatchewan made similar but more limited efforts, and only these latter two provinces made any efforts to leverage trust relationships between HCPs and their patients.

There were other instruments too, but this chapter accurately detailed the breadth of the policy landscape in the four western provinces. Efficacy and efficiency matter when choosing policy tools, but there are always political considerations too. While the preceding explicitly avoided such matters, the next chapter explores issues that were especially contentious.

Chapter 6: Discussion and Analysis

Introduction

This chapter starts with a section that provides tentative answers to the research question. The subsection below provides a scorecard indicating which of the 14 recommendations each province did or did not implement. These were the literature review summary of findings that were, in turn, the categories for the document analysis. This subsection also summarizes the areas of recommended policy tool convergence, and it concludes with a summary of the recommendations that the provinces did not deploy, which differentiated them from each other.

The second subsection discusses vaccine passports and vaccine mandates and explores whether they were justified in terms of duty ethics. Since getting vaccinated is medical in nature, this subsection focuses on *informed consent*. The chapter closes with a section on the highly charged Freedom Convoy, a response to the many tools deployed to mitigate and resolve Covid-19 as a pandemic, but which was triggered by the federal vaccine mandate for truckers, which was nested within the mandate on all federally regulated industries (Employment and Social Development Canada, 2021).

Answering the Research Questions

Assessment of Policy Tools

Table 4 – Scorecard of Expert Recommendations

	BC	AB	SK	MB
Expert Recommendation				
Built communications capacity	✓	✓	✓	✓
Used multi-layered strategies	✓	✓	✓	✓
Amplified voices of the vaccinated	×	Negligible	Limited	✓
Leveraged HCP trust relationships	×	×	✓	✓
Educated HCPs on safety & efficacy	✓	✓	✓	✓
Used positive & altruistic msgs	✓	✓	✓	✓
Used cult. adapted & tailored msgs	×	×	Limited	✓
Used presumptive communications	Partly met	Partly met	Partly met	Partly met
Used normative pressure	Partly met	Partly met	Partly met	Partly met
Improved access to vaccinations	✓	✓	✓	✓
Used loss-framing re: self-interest	✓	✓	✓	✓
Did not admonish the unvaccinated	✓	×	×	✓
Avoided financial inducements	✓	×	✓	Limited
Avoided mandates	×	×	×	×

The table above reproduces the Literature Review Summary of Findings (Chapter 3) but in scorecard format. Ideally, this would be quantified, but there was no way to do so appropriately without doing work well beyond the scope of this thesis. What is obvious from this scorecard, however, is how Manitoba came closest to following all these recommendations, at least to some extent. Again, it would be best to quantify the degree to which each was implemented on a more granular scale, but that is not the aim here. Nevertheless, the four western provinces are to be commended for many of their efforts.

All four provinces built their communications capacities, the use of townhalls being a key example; they all used multi-level strategies for Covid-19 in general, and VH in particular too; the four governments educated and informed HCPs about the safety and efficacy of the various vaccines as the scenario and knowledge evolved; all provinces implemented positive messages when appealing to altruism; they all excelled at improving access to vaccinations, perhaps their best achievement, dedicating tremendous efforts and resources here—the caveat being BC and Alberta missing the mark with in-school vaccinations; and all four implemented loss-framing in appealing to self-interest.

Yet there were many expert-recommended tools that each province did not adopt:

1) Except for Manitoba, the other three provinces made no efforts to amplify voices of the vaccinated. Recall how effective this was for the community immunity initiative in Washington State, and the cost would have been minimal.
2) BC and Alberta did not support HCPs in leveraging their trust relationships with their patients, while Saskatchewan and Manitoba did. This was a serious oversight by the former two provinces because this is a well-established means of addressing VH.
3) BC, Alberta, and to a large extent, Saskatchewan, missed the opportunity to use culturally adapted and/or tailored messages to target specific groups that predictably expressed higher levels of VH.
4) While they all used presumptive communications, no province fostered this most effectively, at the interpersonal level.
5) They all used normative pressure, but they did not target specific groups in doing so, nor did they incentivize the social networks of targets. As these recommendations are tentative, this was not a failure so much as an opportunity missed to innovate and subsequently evaluate such efforts. Points two through five represent broad deficits to capitalize on interpersonal relationships, except for Manitoba.[47]
6) It first seemed that apart from Manitoba, the other three provinces admonished the unvaccinated, but BC's Minister of Health, Adrian Dix, was misinterpreted. Thus, only Saskatchewan and Alberta appeared to have made such unhelpful comments.
7) With large financial inducements, Alberta's policy approach was extensive yet counter to expert recommendations. Conflict between the Kenny Government and

[47] See the European Centre for Disease Prevention and Control (2017) for further examples of capitalizing on interpersonal relationships to reduce VH.

AHS suggests this was guided by ideology, not science, and along with related issues, this was a recurring theme throughout the pandemic in Alberta. This might be the fundamental reason Alberta is dead last in Canada in terms of vaccination rates: The symbolic value of the many messages sent by the Kenney Government plausibly undermined attempts to address VU and VH. Manitoba's relatively limited lottery is one of the few contraindicated steps they took.

8) Last, they all implemented various vaccine mandates and vaccine passports, and while the latter was the only tool that was demonstrably effective in raising vaccination rates, these raised ethical and legal questions.

Mandates, Passports, and Questions of Justification

In a commentary article published in November, medical anthropologist, Kevin Bardosh (2022) reiterated several points he and colleagues (Bardosh et al., 2022) made in an article published in the British Medical Journal earlier in the year (received in February and accepted in May).

> As Canada emerges from a pandemic fog of war, we need an independent scientific and policy evaluation of the mistakes made during the pandemic, including with vaccine policy. This should incorporate a broad cost-benefit assessment, legal and ethical evaluation, and consider the unintended negative consequences for Canadian society. (Bardosh, 2022, p. 7)

This section addresses these concerns, specifically, the legal and especially ethical considerations.

Vaccine passports and vaccine mandates were not unique to western Canada, and jurisdictions all over the world implemented variations (Dye & Mills, 2021; Looi, 2021), which appeared to produce a norm enabling their deployment. While passports affected VU, mandates and passports were controversial, and Health Canada made an important point decades ago:

> Unlike in some countries, immunization is not mandatory in Canada; it cannot be made mandatory because of the Canadian Constitution. Only three provinces have legislation or regulations under their health-protection acts to require proof of immunization for school entrance…. [and] in these three provinces, exceptions are permitted for medical or religious grounds and *reasons of conscience* [emphasis added]…. [this does not therefore] imply compulsory immunization. (Division of Immunization, 1997, p. 3)

The non-governmental organization, Immunize Canada (n.d.), reiterated this in its most recent update in April 2019. Part of the challenge here involved the ethical bases on which mandates and passports were justified, which the preceding quote implies had to be substantial and forthcoming. Before proceeding further in understanding the ethical implications of the vaccine passports and vaccine mandates, it is worth exploring arguments that concluded that they were legally justified and withstood the requirements implied by the Charter.

Cheryl Milne, executive director of the David Asper Centre for Constitutional Rights at the University of Toronto, asserted that vaccine mandates were not forced vaccination (Bogart, 2021, sec. Vaccine mandates are not "forced vaccination"), and this is technically true. People subjected to a vaccine mandate could choose not to get vaccinated, but their remaining options may have been "inconvenient or unwanted," according to Samuel E. Trosow, associate professor in the faculty of law and faculty of information and media studies at Western University (Bogart, 2021, sec. Vaccine mandates are not "forced vaccination"). Yet noncompliance with the vaccine mandates did not present merely inconvenient or unwanted options, they typically led to the loss of one's income. Moreover, while vaccine mandates did not involve "physically holding people down and giving them a vaccine [which] would probably be a pretty clean charter breach" (Bogart, 2021, sec. Vaccine mandates are not "forced vaccination"), coercion does not only include such violent extremes; indeed, significant threats (Anderson, 2023), like losing one's income, suffice.

In not wanting to comply with a vaccine mandate and assert a charter violation, Trosow argued that a person would have to

> prove that the infringement was under circumstances that violated principles of fundamental justice. In other words, the mandate is arbitrary, overly broad, or grossly disproportionate. Because vaccine mandates seek to protect the health and safety of the public... [and that] vaccines reduce the severity of illness and can reduce transmission... it would be hard to argue against those points. (This was a summary of Trosow's arguments as presented by Bogart, 2021, sec. Vaccine mandates are not "forced vaccination")

While Section 7 of the Charter (Canadian Charter of Rights and Freedoms, 1982), "the right to life, liberty and security of the person" is cited in this article (Bogart, 2021), the concept of bodily integrity which it implies is not mentioned. Requiring someone to prove that something they do not want done to their body is a violation of bodily integrity under the circumstances is to put the onus on the wrong entity; it is the entity violating the Charter who must show that it is justified. Such an argument is tantamount to someone being subjected to forced sterilization having to prove that such an act is a charter violation, rather than requiring the state to show that violating bodily integrity is justified before forcing sterilization on someone.

Of course, all rights are subject to reasonable limits, and as Milne explains, "governments can actually limit people's rights, so long as they have a very good reason and can demonstrate why. A global pandemic might just be one of those reasons" (Bogart, 2021, sec. Vaccine mandates are not "forced vaccination"). The point about having a very good reason and demonstrating why is discussed several paragraphs below, but the spectre of a global pandemic is scrutinized first.

To "protect the… safety of the public" is the same reason given for the enactment of the Patriot Act in the US. According to then President George W. Bush, "the Patriot Act is essential to protecting the American people against the terrorists" (United States, n.d., sec. "Highlights"). Substitute "global pandemic" for "terrorists" and these statements are the same. Both are

extremely broad, generally defined problems used to justify the violation of civil rights. These imprecisely make any connection to why it might be justified in any specific case. Moreover, the underlying force is the same, the stoking of fear, the very thing that Herrington and Weiler (2018) warn against. They show how fear causes many people who would normally adopt a more liberal, fluid worldview to change, at least as long as fears within them remained stoked. For example, in the years immediately following 9/11, many people who normally expressed strong disagreement with the violation of civil liberties, shifted their perspectives and instead, approved of the atrocious and illegal practice of torture by waterboarding (Chapter 6 – You're Not Going to Be Scared Anymore).

Yet the ethics of vaccine mandates are nuanced. Consenting to medical treatment, like getting vaccinated, is a matter of ethics in healthcare, and there are two lenses through which to view this. There is the consequentialist view in its utilitarian form, which weighs outcomes and aims to maximize the good, and for which collective good can trump that of individuals; or the deontological or duty-based view in a Kantian formulation, for which the core concept is the value of the (individual) person and for whom their consideration is primary; these two ethical systems are not coextensive. The utilitarian approach is appropriate at the population level from the viewpoint of the Minister of Health, maximizing the health of the province's population, whereas HCPs are bound by duties to the individual persons who are their patients at the interpersonal level (Kluge, 2013a, pp. 12–21).

The notion of informed consent is a core element of medicine in Canada, and was fully legally established in 1980 (Kluge, 2013c, pp. 89, 96; McNally et al., 2004). This is circumscribed by duty-based ethics, and with respect to informed consent, the utilitarian approach is irrelevant. Practitioners must appropriately inform patient–citizens of what they are consenting to, and whether this happened for Covid-19 vaccines is an open question. Anecdotally, however, the author of this thesis received no such information at the time of any of his three vaccinations, nor family, friends, and acquaintances he asked, and these cases alone violate that universally applicable principle.

Part of the principle of informed consent, independent of but applicable to medicine, is that one cannot assume it continues ad infinitum (UVic HREB, 2018, p. 16): Practitioners must occasionally check in with patients to reaffirm they still consent and the moments preceding the administration of treatment is an obvious time. While the matter of being properly informed regarding Covid-19 vaccinations should therefore at least raise questions, and much could be discussed on the topic, this is not even the core issue of present concern: For consent to be valid, being informed is not enough, it must also be uncoerced (Kluge, 2013c, p. 94).

As explained previously, however, the vaccine mandates and vaccine passports were classified as incentive rather than authority tools, and their incentivizing force was essentially coercive. Thus, from the duty-based view—the only relevant ethical framework through which to understand informed consent—justifying these tools becomes problematic. One alternative approach is to redefine Covid-19 vaccinations as non-medical somehow, inconceivably; another

is to redefine the problem as being only on the population level and not at all at the interpersonal one; but this would be a moral abrogation of the entire edifice of rights—not to mention, a legal violation of the Charter—and would be politically and socially regressive. Thus, no matter how one views it, informed consent applies, but there remains one way coercion might be justified.

From the perspective of the primacy of the value of the person, each person rightfully maintains autonomy, but only to the extent to which one does not significantly impede the autonomy of others. Zechariah Chafee (1919) succinctly expressed this: "Your right to swing your arms ends just where the other man's nose begins" (p. 957). It is therefore unacceptable and unethical, in the typical case, for some citizens to substantially endanger the wellbeing and even lives of others; but every time someone gets behind the wheel of a motor vehicle, they endanger pedestrians, cyclists, and other drivers (substantially less because they are not openly exposed).[48] For Covid-19, we must determine "where the other man's nose begins."

Imagine those pedestrians and cyclists could dramatically mitigate the risks motor vehicle drivers present to them by some freely available and easily accessible means. This substantially reduces how justifiable it would otherwise be to coerce drivers away from driving. Indeed, in an August 11, 2021, CBC broadcast (Kluge & Craigie, 2021),[49] the day before BC's first announced vaccine mandate, Professor Kluge invoked Chafee's statement and used it to bolster his argument that mandates were justifiable.[50] However, Kluge did not address a central issue related to a question from the host, Craigie:

> Whenever I get behind the wheel of a car… there's the potential that I could hurt someone, but not necessarily the inevitability that I'll hurt someone, isn't there? [Kluge responded by saying] There's potential but that's not the point: The point is you're required to have a driver's license…. [so that] you will not likely do something that will kill somebody else. (6:00–7:00)

He made the analogy that a driver's license is like a Covid-19 vaccination,[51] but obtaining a driver's license allows a person simply to drive; vaccine mandates and passports forced a scenario where one had to get vaccinated to allow one to work or engage in activities central to a meaningful life. For those who do not drive for a living, driving is not equivalent to

[48] Unlike cyclists and pedestrians, drivers implicitly consent to the risk posed by other drivers to some extent, but this is mediated by vehicle type: Heavy, high center-of-gravity vehicles pose far more risk to drivers of small vehicles than do the latter to the former (Haq et al., 2022, p. 499); and this is similar to how drivers download risks to pedestrians and cyclists (Insurance Institute for Highway Safety & Highway Loss Data Institute, 2019).

[49] Although CBC maintains an extensive publicly available archive of most of its shows, including *On The Island*, this interview was not available. But serendipitously, the author of this thesis recorded the live broadcast and saved it for future reference.

[50] Through two courses, Professor Kluge substantially contributed to the knowledge of the author of this thesis, to whom he is deeply grateful. One was on biomedical ethics in the fall of 2017. Any disagreement with Kluge expressed here is out of the utmost respect, as his teachings are formative in this author's present conclusions.

[51] Maybe he meant that vaccine passports are like licenses, as noted by Neil McArthur, Director of the University of Manitoba's Centre for Professional and Applied Ethics (S. Thompson, 2020, para. 3); but based on what Professor Kluge said, the present interpretation is appropriate; and even if the alternate interpretation holds, it still implies coercion for getting vaccinated.

these and is a relative privilege, and the requirement to get a licence to drive does not violate bodily integrity, a Charter-protected right (Department of Justice, 1999, sec. (iii) Right to security of the person); but for those who would otherwise refuse, requiring vaccination to engage in activities central to living one's life results in such a violation.[52] At the core of Craigie's question, however, is how he may potentially, but not necessarily, harm someone by driving,[53] and this implies: What level of risk for some citizens justifies the coercion and violation of the Charter rights of others? Kluge never answered, but this is an essential question.

Most circumstances involving Covid-19 did not imply that citizens should be required to be vaccinated,[54] because the best way to mitigate significant negative outcomes from Covid-19 was to get vaccinated oneself. That is, by getting vaccinated, one could put those swinging their arms out of reach of one's nose. However, this still leaves the question of what to do about those at high risk of Covid-19, but for some reason or another, could not be vaccinated. This is the only remaining ground on which coercing citizens to get vaccinated might be justified. To determine this, the various risks must be weighed and calculated, and this leads to a remaining test the implementation of such tools must pass.

It is worth highlighting a point made my Milne above when she argued that vaccine mandates were justified under the Charter: governments can limit citizens' rights, but that they must have good reasons and show why. The central question then becomes a matter of the magnitude of the benefit these tools provided—or prospectively, would have likely provided—and the benefit must be sufficient to justify them. Put another way, the risks and the concomitant risk reduction each had to be high enough to justify the use of highly coercive policy instruments that violated a Charter-protected right; again, if one would refuse without coercion, then one's right is being violated. Chomsky answers when reiterating a general point, not specific to the current topic, made by Wilhelm von Humboldt some 200 years ago, saying how coercive institutions must show

> under existing conditions, perhaps because of some overriding consideration of deprivation or threat, some form of authority, hierarchy, and domination is justified, despite the prima facie case against it on the authority who takes coercive action—a burden that can rarely be met. (Chomsky & Pateman, 2005, Chapters 6, Sec. Discussion)

[52] Roe v. Wade's overturning (Totenberg & McCammon, 2022), troubling as it may be, provides an interesting contrast with the similarly divided issue around vaccines and mandates (Brumfiel et al., 2021; Wise, 2021): Broadly speaking, each side asserts bodily integrity in one case, but denies it in the other, so both are ethically inconsistent.

[53] Through listening to this CBC Radio program over the years, it is abundantly clear Craigie is a cyclist first and a driver second—just like the author of this thesis—and the risks of driving are much more salient to cyclists than to those who are only or primarily drivers.

[54] The distinction between duties and supererogatory actions, those above the call of duty, is important. For example, the author of this thesis was vaccinated three times so far for two reasons: First, his employer required it, and second, he would have done so even without that requirement to protect several people especially vulnerable to Covid-19, including his mother. But if it were merely a matter of pure self–interest, he would have declined.

Thus, whatever the magnitude of the effects of the mandates, it is implausible their benefits were sufficient for them to be justified,[55] and the same may be true of the vaccine passports. The burden of proof falls on the coercive institutions, and the calculations of risk noted above that might provide justification must be demonstrated by those who implement the tools. This reiterates a point made by Milne, that government can limit people's freedoms, "so long as they have a very good reason and can demonstrate why" (Bogart, 2021), also echoing Chomsky and Pateman. Just as informed consent cannot be assumed forever going, governments vested with the authority to act must continue to show their coercive actions are themselves justified. Indeed, while political popularity was plausibly one of the reasons behind the repeal of the vaccine passports and some of the vaccine mandates, these ethical and legal considerations are probably among the reasons the WHO (2022) did and does not support vaccine mandates for Covid-19. Moreover, these should have been a major factor in deliberations that led to those repeals, as discussed previously (see the Vaccine Passports and Vaccine Mandates section of Chapter 5).

However, there was a way to solve this problem: Allowing negative tests in lieu of vaccination, which could satisfy the ethical challenges presented by coercion.[56] While BC was unique in not allowing testing, it is important to examine how genuinely ethically consistent the other provinces were by having testing as a tool. In Alberta and Saskatchewan, testing was an option for both passports and mandates,[57] but individuals had to pay for these tests; this was prohibitive for lower-income citizens, thus violating the principle of fairness and justice, yet the vaccines were free. By allowing testing in all cases, however, the coercive force of these tools was significantly mitigated, if only doing so in a way that disadvantaged lower-income citizens.

Independent of those who were granted accommodations, if governments had covered the costs of testing for people who did not want to get vaccinated merely as a matter of personal choice, the ultimate cost burden on taxpayers may have been high,[58] but small relative to pandemic-related expenditures in total. Manitoba was the only province to solve this problem, as they covered the costs for both vaccinations and testing, relieving the coercive pressure of the mandate and meeting the principle of fairness and justice; unfortunately, testing in lieu, paid or

[55] As a counterargument, it is not the magnitude of their effect that mattered, but whether they were enough to push past the threshold of herd immunity: If vaccination rates were at 88%, 90% was needed for herd immunity, and they produced a 2 percentage point bump, the effect would be dramatic; but it is highly unlikely that vaccine mandates caused an increase anywhere near the magnitude of even a single percentage point.

[56] Omicron overwhelmed testing capacities (Miller, 2022; Young, 2021), and rendered rapid tests less effective (Ferreira, 2021), making testing in lieu a less viable option; but its severity was also lower, so on balance, it may have been no more justifiable to maintain mandates and passports during this phase of the pandemic.

[57] People granted accommodations were an exception in Alberta (Yiu, 2021, p. 4), and in Saskatchewan (Government of Saskatchewan, 2021ao, para. 5), but the wording is ambiguous in both cases: It is not clear whether they were exempt from paying for testing, or if they were exempt from testing, full stop. It is reasonable to assume the latter, however, since an accommodation for BC's mandate implied no testing, and in Manitoba, a passport accommodation appeared to also require no testing (see Reasons for Accommodations in Chapter 5).

[58] Whatever the costs, these could have easily been absorbed into spending on Covid-19-related policy instruments, given their unprecedented extent. Relatively minor cost savings do not justify violating core principles of Canadian society.

not, was not available for the Manitoba Immunization Card, so their efforts only partly met the appropriate ethical standards.

Thus, while the details differed, Alberta, Saskatchewan, and Manitoba implemented tools to address the coercive force caused by their vaccine passports and vaccine mandates, and on this count, the balance of their efforts was commensurate with each other. That is, Saskatchewan and Alberta extended testing in lieu to all citizens, but did so in a way unfair to those with lower incomes, while Manitoba solved the income fairness problem, but testing was not extended to all citizens.[59] While BC achieved the highest vaccination rates in the period of analysis—the faster this happened, the fewer the number of citizens who would die—they provided no mechanism to mitigate the coercive policy force of the BC Vaccine Card, the BCPSA mandate, and the one on HCPs, having no testing options whatsoever.

One last issue worth addressing is the matter of the strain Covid-19 put on healthcare systems (Canadian Medical Association & Deloitte, 2021), especially when this became driven by the unvaccinated (CBC News, 2021i, para. 6; The Globe and Mail, 2021). However, the answer is simple: If healthcare systems become overwhelmed beyond capacity, it becomes acceptable to use a triage model (Aacharya et al., 2011); if someone therefore required medical attention because of a Covid-19 infection but willingly chose not to be vaccinated, they would simply be a low priority; again, the exception being those who could not be vaccinated, i.e., they were given an accommodation. The burden of the consequence of not being vaccinated should be on those who made that choice, not on HCPs who might respond to those consequences.

It is especially worrisome, however, that in media reporting about anti-vaccine protests and similar matters, how rarely discussed some of the preceding considerations were. Moreover, even when addressed directly, as in the interview with Kluge, essential questions around justification were not answered. One should never assume that governments' actions—even based on efforts to enhance public health—are necessarily justified, for which the following section provides another example.

The Response to the Freedom Convoy

The end of the period of analysis coincided with the now infamous Freedom Convoy. While the encampment in Ottawa was its most newsworthy and prolonged expression, weekly protests outside various legislatures happened throughout Canada (CBC News, 2022b; Tasker, 2022b). Some claim the evidence suggests nefarious entities played a key role in organizing these protests (Connolly, 2022b; E. Thompson, 2022a), but the Director of the Canadian Security Intelligence Service, David Vigneault, made remarks to the contrary. The Public Order Emergency Commission (POEC) was given a summary transcribing key conversations he was involved in, and on February 6, 2022, eight days before the Emergency Measures Act was invoked, he said that "hardened elements who… [would] likely use violence…. [were] not

[59] Recall this thesis excludes private corporations and any mandates they imposed.

actively participating or *organizing* [emphasis added] it and… [were] likely using this as a recruiting ground" (E. Thompson, 2022b, para. 19). A week later however, the POEC heard that as the scenario evolved, Vigneault ultimately recommended on February 13 that the act be invoked, based on a broader definition of national security (Tunney & Major, 2022, sec. "David Vigneault says").

Whatever the case, the author of this thesis, along with his wife, watched hours of raw video footage from Ottawa, and he spoke to a variety of friends and acquaintances—all credible citizens—who attended protests in Victoria; this anecdotal evidence appeared to contrast with the news media, who, reasonably, focused on the days most noteworthy events, but the mass of people protesting and most of what happened during these protest appeared to have nothing to do with these malevolent entities. They were merely ordinary citizens expressing their objections to government policies. Whether one agrees with their reasons for protesting is irrelevant, and the very point of freedom of expression and freedom of assembly is not to cherry pick what issues people should or should not protest about, but to uphold those rights for those with whom one disagrees.

Whether the encampment in Ottawa was appropriate is debatable, but these events were highly politicized. Even Tucker Carlson of Fox News gave substantial airtime to the topic (Fox News, 2022). In a strange turn of events, Carlson quoted Karl Marx saying how these protests related to the notion of "workers of the world unite," and these protests sparked similar events in many other advanced nations. He then criticized Marx for being a "rich kid" who knew nothing about the experiences of working-class people and then blamed small "l" liberals and Democrats for attacking working people. This is even more astounding, since, as Chomsky points out, it is rare to find references to social class in American media (Chomsky & Barsamian, 2012, sec. The unmentionable five-letter word). Carlson (Fox News, 2022) later said:

> "Scratch a liberal and you will find a fascist," that was a Black Panther slogan; actually, they weren't entirely stupid [(4:25–4:33); and later] you knew that CNN was the Pretorian Guard for our ruling class; did you know they serve the same role in Canada... how much money does CNN take from the Government of Canada? (10:45–10:56)

There is much to unpack from Carlson's statements, but remarkably, in speaking with friends, the author of this thesis discovered many self-described left-wingers substantially agreed with Carlson's take on the Freedom Convoy. He comes across as a blowhard, but he is far from it, and the above amounts to sophisticated and nuanced propaganda. Ironically, Carlson outed himself in terms of his class allegiance—the criticism he made of Marx—through his reference to the Pretorian Guard. He used key talking points to elicit emotional reactions from left-wingers to get them to sympathize and align with the points he made, and he made key omissions that are implausibly non-deliberate. The question is not: How much money does the Canadian Government give CNN? As if that were even a plausible scenario. Rather, how beholden are governments to the rich and powerful entities whose interests those governments largely serve? Carlson undermines popular support for the institutions of government and democracy—among

the few means available to average citizens to affect socioeconomic trends—by making such insinuations. His disingenuous but ingenious use of the Freedom Convoy does not, however, imply the federal government was justified in the approach it took towards it.

The Government of Canada implemented a vaccine mandate for all its employees and all federally regulated industries (Employment and Social Development Canada, 2021), which, crucially, included truckers, the very flash-point for those protests (Tasker, 2022a); and recall, like BC, there was no testing in-lieu option (L. Goldstein, 2022, para. 11); yet there was no apparent reasonable justification for that mandate, nor was it necessary in any rational analysis of the situation: Truckers appeared to be a vector of low transmission (Gollom, 2022), their vaccination rates were already high (Canadian Trucking Alliance, 2022), and most of all, the federal government could have used the negotiation tactic of *appealing to a higher power*, as the US mandate would have forced vaccinations on any cross-border truckers anyway (CBC News, 2022f, paras. 1–2). Rather than speak to those protestors, as they requested of Trudeau (Aiello, 2022a), he derided them by saying some stole "food from the homeless…. [and flew] racist flags" (Gilmore, 2022a, paras. 3–4), conflating the many with a rare, extreme element within them.

Trudeau's ultimate invocation of the Emergency Measures Act not only drew criticism (Steinbuch, 2022), it even led to a law suit from the Canadian Civil Liberties Association (CCLA; Boisvert, 2022): they argued that "the federal government has been using cabinet privilege to try to shield an increasingly wide range of government information from meaningful scrutiny" (Deshman, 2022, para. 2).[60] On February 17, 2023, the final report for the POEC was released (POEC, 2023; Rouleau, 2023). While Justice Rouleau ultimately determined that the very high threshold to invoke the act was met (Tunney, 2023, paras. 1–2), he also said that "reasonable and informed people could reach a different conclusion than the one I have arrived at" (para. 13). To whit, that same day, the CCLA (2023) responded, saying "we disagree with the Commissioner's conclusion that the legal threshold for invoking the Act was met" (para. 2); and while Justice Rouleau concluded that it was met, this does not imply that the Emergencies Act should have been invoked, only that it was merely permissible.

Trudeau's justification was "keeping Canadians safe, protecting people's jobs, and restoring confidence in our institutions" (Quenneville, 2022, sec. A measure of "last resort"); but this is revealing, because often, the word "jobs" is code for profits, that is, protecting the economic interests of the powerful (Chomsky & Barsamian, 2012, sec. The unmentionable five-letter word), and it was the blockade over cross-border traffic and hence trade that was plausibly the primary concern.[61] Trudeau's entire approach showed a lack of political acumen, seemingly

[60] This is consistent with the claim by Cooper et al. (2022), in their book about BC and Canada's ongoing money-laundering scandal, *Wilful Blindness*, that "in Canada, privacy laws are cited extremely broadly by the government," implying they too often rely on this as a shield.

[61] This speculation was confirmed through the last half of November 2022 at the POEC. First, the commission heard that a federal government official said that "downtown Ottawa may not constitute a national

very different from 2015, when he was still an aspiring PM. Carlson's observation that "if you scratch a liberal, you find a fascist," has some merit here. However, it is reasonable to posit that his intentions in citing that "quote" are consistent with the very accusations he made,[62] and Carlson is implausibly interested in genuinely enhancing democracy.

Back in May 2021, North Dakota announced a program to help vaccinate Canadian truckers crossing their border (Province of Manitoba, 2021ab), as did Montana, which did so for free (Government of Alberta, 2021r, para. 6). This adds to the evidence that, by early 2022, vaccinating truckers was not an issue that warranted such a coercive policy instrument. As stated in a video by Michael Prince (2013), Bruce Doern classifies policy tools by their level of coercion (5:20–7:25; see also Pal, 2014, p. 132), and few things are as coercive as the Emergency Measures Act. To repeat a point made earlier in this chapter in the Mandates, Passports, and Questions of Justification subsection, Chomsky said the burden of proof for coercive institutions and their coercive actions falls on those institutions and can only be justified on grounds something like deep material deprivation or serious existential threats (Chomsky & Pateman, 2005, Chapter 6); legally, the point about the burden of proof is true for the Emergency Measures Act too, as noted by Cara Zwibel from the CCLA at the onset of the POEC, "the government has yet to prove that the legal threshold to invoke the Act was met, and the burden is on them" (Gilmore, 2022b, para. 8).

The federal government gave no credible justification for its trucker mandate; moreover, the CCLA's lawsuit against the federal government implies they thought the same about the subsequent invocation of the Emergency Measures Act; and proceedings at the POEC show that while all three levels of police, the RCMP, the Ontario Provincial Police (OPP), and the Ottawa Police Service found its invocation "helpful," none has gone so far as to say it was necessary

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security issue, but border integrity could" (Fraser & Smith, 2022, para. 18). Within days, the POEC also learned that Trudeau wrote the Premiers on Feb 15, 2022: "We are facing significant economic disruptions…. costing Canadians their jobs and undermining our economic and national security…. affecting Canada's reputation internationally [and] hurting trade and commerce (Canadian Press, 2022c, para. 17). The commission subsequently heard from Emergency Preparedness Minister, Bill Blair, that it was border blockades that elevated the situation to a national security threat. A transcript of his statement read that "what concerned him the most were the threats to the critical infrastructure of Canada's [ports of entry] caused by the border blockades" (Tunney & Major, 2022, sec. Witnesses this week). Several days later, Finance Minister and Deputy PM, Chrystia Freeland told the POEC that a high-profile American investor called Canada a "banana republic," notably affecting electric vehicles and batteries trade (Tunney & Andrews, 2022, sec. "CEOs warned"). Indeed, for these economic reasons, "US Cabinet secretaries pressed their Canadian counterparts to… [use] 'federal powers' [to resolve the crisis]" (Coletta, 2022, para. 13).

[62] Through extensive research, including a sample of 29 out of 129 publications on Black Anarchism (The Anarchist Library, n.d.), no attribution of such a statement to the Black Panthers nor Huey P. Newton was found. This is consistent with Carlson's use of false attribution to evoke support from people who would normally oppose his views, in a sort of bate-and-switch tactic similar to the one used by the now deceased Michael Joyce, when he was chairperson of the Bradley Foundation: Joyce harnessed people's exasperations with politics but then explained the solution was to become active in various social arenas; yet he was conspicuously silent on matters like voting, implying people should turn away from politics (Chomsky & Barsamian, 2012, sec. Defective democracy). The idea in both cases is to evoke sentiments grounded in socioeconomic position but then turn those sentiments against those very interests.

(Nardi & Lévesque, 2022); and retired OPP Chief Superintendent, Carson Pardy, was explicit in making this point (Tunney, 2022b). These highly coercive measures exposed sentiments of authoritarianism in Canadian democracy, something Canadians might not recognize because of the enormous shadow of recent American history and the ongoing saga of Trump (see The Associated Press, 2022; Hooper, 2022; Pengelly, 2022, for details about the turmoil surrounding Trump).[63]

On February 6, 2022, a day before Carlson's remarks, Angus Reid Institute President, Shachi Kurl, said on CTV News (2022) that Trudeau was wrong to claim the truckers represented a fringe group, as "54% of Canadians… [were] ready for a conversation about whether it's time to start lifting and ending restrictions" (0:34–1:33). Two days prior, Minister Farnworth (2022) in BC said, "while the police will respect lawful protests, they will also consider all the tools and options available to them to protect people, preserve public safety, and investigate unlawful conduct" (para. 2). By February 7, however, Saskatchewan Premier, Moe, said "I would hope that the federal government would listen to what they have to say. For the most part, I think it's been peaceful" (Stein, 2022, paras. 15–18), repeating his statements from January 29 (Patterson, 2022, para. 3). Moe's statements were likely politically motivated and whether he genuinely also made them on moral grounds is an open question. However, the highly coercive approach taken by Trudeau, using the Emergency Measures Act, was consistent with some troubling findings.

An Angus Reid (2021b) poll from mid-November found that 70% of Canadians thought health workers, teachers, and other employees who refused inoculation should be fired. In January, a Maru (2022) poll found 37% favoured refusing the unvaccinated access to any publicly funded healthcare services, and more concerning, 27% thought they should be jailed for up to five days (p. 1). This is consistent with the finding that a large minority of the population is open to fascist ideas (Adorno et al., 1950/2019; Hetherington & Weiler, 2009; MacWilliams, 2016; Nelson, 2022, sec. "Testing"). These are serious threats to democracy, especially given the rise of populism ironically reflected by the Freedom Convoy. Recall, as recently as May 30, 2022, the WHO (2022) did not support mandatory vaccinations for Covid-19 (p. 1), and this is in a global context, which does not take into consideration the additional constraints on authoritative power given by the Canadian Charter. To repeat what Health Canada (Division of Immunization, 1997) said in 1996, "immunization…. cannot be made mandatory because of the Canadian Constitution" (p. 3).

[63] Snyder (Politics and Prose, 2017) wrote what amounts to a manifesto recommending ways to resist the advancement of tyrannical forces, and while he does not explicitly cite Trump, in a recording of a launch event for the book, he made this clear (Politics and Prose, 2017).

Chapter 7: Conclusion

The Covid-19 pandemic caused extensive social upheaval on a global scale, and Canada's four western provinces were no exception. A vast array of policy tools was deployed to address a range of issues related to the virus and its many variants, and the focus of this thesis was the tools implemented to enhance VU by decreasing VH in western Canada. There were two categorical frameworks for the document analysis: The first was based on a policy tool topology by Schneider and Ingram (1990), which slotted instruments into one of their five categories. In descending order of their frequency of implementation, these were capacity, symbolic, incentive, authority, and learning tools. The second framework for the document analysis involved determining how to categorize tools in terms of one of 14 expert recommendations.

Given the complexity of the many interactions of these tools, the scope of this thesis made it impossible to provide a quantitative evaluation of each. Even for a generously resourced research project, this would be extremely challenging. Therefore, the evaluation amounted to whether each province met with each of the 14 expert recommendations. The exception was vaccine passports, for which short-term upward bumps in vaccination rates were observed.

Broadly speaking, the four provinces, especially Manitoba, are to be commended for following through with many of the expert recommendations. Where they most excelled was in improving access to vaccinations, as they deployed many tools to enable this, most if not all being capacity tools. All four provinces deployed a variety of appropriate instruments: ones to educate HCPs on vaccine safety and efficacy; tools that built communications capacities, like townhalls; positive messages that appealed through altruism; strategies across multiple social levels; loss-framing when appealing to self-interest; and two partly implemented instrument types were those that used presumptive messages, which should have been extended to the interpersonal level, and those that used normative pressure, which could have targeted subgroups and incentivized targets' social networks.

There were notable deficits too, however, and only Manitoba made substantial efforts to amplify the voices of the vaccinated and use this to encourage those who were hesitant; again, only Manitoba substantially implemented tools involving the use of culturally adapted and/or tailored messages. When implementing tools to bolster and take advantage of trust relationships HCPs had with their patients, only Saskatchewan and Manitoba did, and BC and Alberta missed this opportunity. As for admonishing the unvaccinated, Alberta and Saskatchewan did so, counterproductively. In implementing lottery inducements, which was nevertheless limited, Manitoba deployed a rare contraindication, yet Alberta deployed such tools extensively. This latter case formed part of a policy toolset for which the net effect plausibly backfired and increased VH, as Alberta continued to have the lowest vaccination rates as fall 2022 progressed.

The most important issue, however, was the matter of vaccine passports and vaccine mandates.[64] Given the novelty, rapid dynamics, inter-jurisdictional frictions, and global nature of the Covid-19 pandemic, it is understandable governments turned to such tools, including Canada's four western provinces. Indeed, of all the tools analyzed in this thesis, only vaccine passports were synchronized with clear increases in vaccination rates in three of the four provinces: BC announced its three and a half weeks before Alberta and Saskatchewan and its upward shift in vaccination rates was also three and a half weeks earlier; this further supports passports being the cause and not some other Canada-wide or even global causal factor.

Experts either cautioned against or did not support vaccine mandates and they were implausibly necessary. Whatever small and possibly negligible degree to which they contributed to increasing VU, it was unlikely sufficient to justify them. Yet the exception was those whose jobs, healthcare-related or not, put them in close contact with particularly vulnerable citizens. Once again, only Manitoba addressed this by making this distinction in their mandate, which only covered employees who had significant physical interactions with vulnerable citizens.

The principle of informed consent requires that consent be given freely—without coercion—and that people be appropriately informed of what they are consenting to, yet coercion was the very purpose of vaccine passports and vaccine mandates. Moreover, informing citizens effectively was not universal and rigorous and may have fallen well short of the necessary standards. Related to this is the principle of autonomy and the right to bodily integrity: What one does with one's body is up to that person, as misguided, wrongheaded, or risky as an empathetic, reasonable, objective observer might think or know such actions to be (see Kluge, 2013c, pp. 98–99, on the objective reasonable person standard); and for those who meet personhood criteria (Warren, 1973, p. 55), a paternalistic approach is never acceptable (Kluge, 2013b, pp. 74–80). Yet one's autonomy is not unlimited, despite the claims of some free speech advocates.[65]

Each person is limited by the autonomy of the other persons in their communities, so this becomes a matter of knowing where those boundaries are and not crossing them. The central case where this may have genuinely applied has two closely related strains: people who were highly vulnerable to adverse outcomes from a Covid-19 infection and who, for whatever reason, could not be vaccinated; or those who were highly vulnerable to adverse outcomes even if vaccinated, a rare circumstance (for an example of risk reduction from vaccination among the elderly, see US–CDC, 2022b; for a less credible claim, cf. McKeever, 2021, tit. Why fully vaccinated older people are at high risk for severe Covid-19).[66]

[64] While vaccine mandates are obviously compulsory, with no option for testing in lieu, the highly coercive restrictions related to vaccine passports made them essentially compulsory too.

[65] An example of the extremity of free speech is Alex Jones' take on Sandy Hook, where he claimed the murder of children was staged (Dinkin, 2022; Nast, 2022; Queen, 2022).

[66] While not directly demonstrating this, it is supported by the BC–CDC's December 2021 assertion that unvaccinated residents were "56 times more likely to end up in critical care due to Covid-19 than people who have received two vaccine doses" (Office of the Premier, 2021n, para. 5).

Apart from these two cases,[67] the best way to mitigate the potential negative effect of the unvaccinated on others was simply to get vaccinated oneself. There is no good reason Mary should be forced to benefit John when John can easily benefit himself to a greater degree. This applies to most pandemic-related cases, but the principle of equality and fairness means going beyond that vast majority and meaningfully considering the two involving vulnerable people noted above; but this does not imply that it is justified to coerce others into getting vaccinated.

Merely presenting citizens with some vague notion of enhancing public health or public safety is not sufficient justification; nor is referring to getting vaccinated as the "right" or "considerate" thing to do. When incorporated into messaging, these latter points are means of reducing VH, not justifications for public health policy tools. If one agreed that such coercion was reasonable without being presented with an appropriate justification, then one of three conclusions can be drawn: first, one may have not contemplated this thoroughly and is merely adhering to broad cultural norms;[68] second, a person might explicitly disagree with fundamental principles of Canadian society and democracy; or third, and perhaps most concerning, an individual is in a state of false consciousness, thinking one agrees with those principles, but only superficially—many Canadians may be prone to authoritarian influence more than they realize.

Context is almost always relevant, however, and the two cases of vulnerable citizens may still yet have implications: They might imply a duty on others to take precautions for them, but it does not follow that being vaccinated becomes that requirement. Between the mid-1990s and the approval of the first Covid vaccine, there were no legal changes nor precedent set regarding mandatory vaccinations (Bryant & Zwibel, 2020; Walkinshaw, 2011), and in the mid-1990s, Health Canada held vaccinations could not be compulsory because of the Charter (Division of Immunization, 1997).[69] However, regardless of the legalities of Covid-19 vaccine passports or vaccine mandates, there was a tool that could bolster their legitimacy and justify them ethically: Governments could provide the option for regular testing in lieu of vaccination.

All provinces except BC did this reasonably well. To their credit, Manitoba limited its mandate to those working with vulnerable populations, and government-funded testing in lieu was available; the one thing they could have improved was to extend free testing to their vaccine passport too, for which there was no testing option, free or not. Alberta and Saskatchewan, conversely, allowed testing in lieu in all cases, but their mandates were, unnecessarily, more extensive, and costs for testing had to be paid by the unvaccinated individuals themselves. Yet in BC, there were no testing options in any circumstances, be it for mandates or passports.

[67] Adverse outcomes and hospitalizations were much less prevalent among children than adults (Public Health Ontario, 2021a, p. 1; Sajan, 2022)

[68] This can be equally true of anti-vaxxers; they just have a different in-group and hence a different norm.

[69] Health Canada's assertion referred to school vaccination programs, so this would apply equally to the Government of BC's vaccine mandate for its Public Service Agency, for example. Health Canada noted that if a government allows for conscientious objectors to continue going to school, this implies that the policy tool is not compulsory. Testing-in lieu is the corollary in the present case, but unlike other provinces, BC did not allow this.

As variants developed, testing may have been less accurate, thus strengthening the case for overriding the right to bodily integrity and mandating vaccinations on people who worked in close contact with these vulnerable citizens over that truncated period. Ultimately, in these cases, and these cases alone, this may have been justified, but the burden of proof fell on the authorities who implemented such policy tools, be they health authorities, private corporations, or the four western provinces. Such proof should have been readily available, yet even the research for this thesis found no clear evidence. They often asserted the importance of these policy instruments, but any reasons given were far too vague to amount to reasonable justification, and to repeat a point consistent with this made by Lazarus et al. (2021),[70] public health policy communications must go beyond merely "pronouncing that vaccines are safe and effective" (p. 226).

Vaccination requirements by most private employers were apparently widely accepted, and so far, legal challenges against them have typically been unsuccessful; but most of these challenges involved employers who mitigated the coercive force of their mandates by including testing in lieu or other means of continuing work without being vaccinated, such as working from home (Canadian Press, 2021c; Melnitzer, 2022). In some narrow circumstances, the case for provincial authorities had some merit, but nobody provided the appropriate justification, certainly not readily; as Chomsky said, "a burden [of proof] that can rarely be met."

While the cause may have been a good one, resolving the pandemic aspect of Covid-19, it is deeply concerning how little attention people have given to the unjustified coercion of fellow citizens: The ends do not justify the means. Equally troubling is how, in a BC case, an arbitrator ruled in July 2022 in favour of Coca-Cola's vaccine mandate for its employees; the deadline for having a primary series was January 1, 2022, but they had no option for testing in lieu (S. Little, 2022). What largely remained of the Freedom Convoy was a media narrative about some of its leaders (Ibrahim, 2022a, 2022b; Osman, 2022; Taekema, 2022), and serious concerns about white supremacy and other forms of prejudice (Lapierre, 2022; V. S. Wells, 2022), but this changed with the onset of the POEC (Canadian Press, 2022b; Gurney, 2022). That narrative distracts from the issue of justification for coercion, which was reflected in the vaccine passports, vaccine mandates, and use of the Emergency Measures Act.

Starting on October 13, 2022 (Aiello, 2022b; Tunney, 2022a), coercive public policy was explored at the POEC, which was automatically triggered by declaring the act to occur within 60 days of its expiration or revocation (Legislative Services Branch, 2022). China may have caused Covid-19 to become pandemic by actively suppressing early knowledge about its spread,[72] but by deploying draconian Covid measures (The Economist, 2022), it may have lowered Canadian public sensitivity to potentially excessive Covid-19 policy responses and beyond.

By August 2022, BC led with respect to double dose vaccination rates and was ahead by 2.7 percentage points of Manitoba, second of the four (N. Little, n.d.-d, n.d.-b), and this could be the difference between achieving herd immunity or not. Concurrently, deaths per 100,000 were

[70] See the subsection on Building Communications Capacities from Chapter 3.
[72] See McMullen (2021) for a compelling PBS Frontline documentary showing how this likely happened.

lowest in BC at 77.4, 106.3 in Alberta, 124.4 in Saskatchewan, and 150.2 in Manitoba (N. Little, n.d.-c). While BC may have obtained the highest vaccination rates among the four western provinces, had the least deaths by a wide margin, and was the most transparent concerning Covid-19 data,[73] it was the only province to provide no means of mitigating its coercive vaccine passports and vaccine mandates. This is troubling, especially given how the governing BC NDP broke the Confidence and Supply Agreement with the Green Party and called an election mid-pandemic (Meissner, 2020).

A democracy is only democratic to the extent to which its citizens participate and exercise their rights.[75] Contraventions of those rights must be explicitly justified or mitigated, even for a cause as good as resolving a pandemic. Good outcomes do not justify democratic deficits, nor curtailing the rights of citizens, and Canadians should be cautious to not allow such issues to be eclipsed by overcoming the pandemic. The use of highly coercive policy tools to address VH, along with the use of the extremely coercive Emergencies Act to address the consequences of those tools are likely to erode the social trust which is critical to reducing VH. Yet the likely erosion of social trust has consequences more broadly for Canadian society.

While Justice Rouleau concluded the POEC by stating that the threshold for invoking the Emergency Measures Act was met by the Government of Canada (Tunney, 2023, paras. 1–2), he also noted that other reasonable and informed actors could conclude differently (para. 13). Moreover, he seriously criticized all three levels of government for their botched approach to the Freedom Convoy (Tunney, 2023). Together, these two points mean that his claim regarding the threshold having been met was not emphatic. The CCLA (2023) responded to Justice Rouleau's conclusion with just such an assertion of dissent, and even as the POEC concluded, the CCLA thought that the invocation of the Act was wrong (para. 2). Resonating with this concluding point was Sujit Choudhry of the Canadian Constitution Foundation in an opening statement made back at the start of the POEC:

> For 34 years the Emergencies Act was never used. The public order emergency of 2022 was a historic first, but now that the glass has been broken on the act, it can be used again. The act was used by this government against individuals protesting vaccine mandates, but a future government of a different political stripe could use the act in response to protests against pipelines or climate change. When the commission asks hard questions about the act's use in 2022, the commission must also focus on the act's potential misuse in the future and protect the right to protest parliamentary democracy and federalism. What the commission says matters not just to Canada, but globally where the use of emergency powers is on the rise. The world will be watching our work. (Aiello, 2022b, para. 11)

[73] One caveat, BC was criticized for not providing data specific to First Nations and for "giving lip service to reconciliation" by the President of the Nuu-chah-nulth Tribal Council, Judith Sayers (Dyok, 2020).

[75] The National Democratic Institute (2016) describes the centrality of participation for democracies.

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Appendix 1: Timeline of Notable Events

AB – Alberta; MB – Manitoba; SK – Saskatchewan

Dec 9, 2020: Health Canada approved the first vaccine for people 16 and older, and the provinces announced their initial plans in the following days and weeks (Health Canada, 2020).

Dec 14: MB announced its first clinic (Pallister, 2020).

Dec 15: In SK, the first vaccinations started, involving front-line HCPs in ICUs, Emergency Departments and Covid Units (Government of Saskatchewan, 2020b, para. 4).

Dec 15: The first British Columbian was vaccinated (Migdal, 2020).

Dec 17: SK announced the expansion of vaccination to other HCPs and long-term care residents (Saskatchewan Ministry of Health, 2020c).

Dec 31: MB announced a partnership with First Nations experts and organizations (Province of Manitoba, 2020d, paras. 1, 3).

Jan 4, 2021: MB's RBC Convention Centre super site opened, earlier than other provinces (Province of Manitoba, 2020c, para. 2).

Jan 8: AB expanded the number of professionals permitted to administer Covid vaccines (Government of Alberta, 2021b, para. 2).

Jan 15: MB announced a survey at EngageMB.ca, one of many efforts for feedback (Province of Manitoba, 2021d, para. 3).

Jan 18: MB's second super site opened (Pallister, 2021b, para. 2).

Jan 21: SK completed first doses for all long-term care homes (Saskatchewan Ministry of Health, 2021c, para. 4).

Jan 21: Horgan said, "the review of our legal options made it clear we can't prevent people from travelling to British Columbia" (Office of the Premier, 2021a, para. 4).

Jan 22: BC announced its immunization plan (Office of the Premier, 2021b).

Jan 29: MB hit 100% of care home first doses (Province of Manitoba, 2021h, para. 2).

Jan 29: Angus Reid (2021a) poll showed, that out of all provinces in Canada, AB was the outlying leader in terms of percentage of population expressing VH, 45%, with SK in second at 26%, BC in third at 24%, and MB in fourth at 23%.

Feb 1: MB's third super site opened (Province of Manitoba, 2021j, para. 5).

Feb 2: MB townhall about vaccination roll-out (Province of Manitoba, 2021g, para. 14).

Feb 9: MB opened a clinic in Winnipeg targeting priority First Nations populations (Province of Manitoba, 2021k, para. 1).

Feb 10: An AB press release announced findings from a fall 2020 survey: "46% [of Albertans] expressed loneliness, and more than half felt that their mental health had gotten worse" (Hinshaw, 2021a, para. 34).

Feb 10: AB announced that 71% of long-term care and assisted living residents were double-dosed (Hinshaw, 2021a, para. 3).

Feb 11: MB announced a deal to buy vaccines, if eventually approved, from a Calgary company (Nickel, 2021, paras. 1–3).

Feb 18: MB announced Covid-19 immunization records were now available online (Province of Manitoba, 2021m).

Feb 23: BC's first announcement expanding the number of professionals permitted to vaccinate (College of Dental Surgeons of BC, 2021, paras. 1, 4).

Feb 24: MB made First Nations vaccination data available (Province of Manitoba, 2021n).

Feb 26: Canada approved AstraZeneca (Health Canada, 2021a).

Mar 2: AB announced three ways to book appointments, including the AHS online booking tool or through calling Health Link at 811 (Hinshaw, 2021b, paras. 28–29).

Mar 2: BC announced a 16 week extension for second doses (Henry & Dix, 2021c, paras. 12–13)

Mar 3: NACI recommended an increase to 16 weeks for second doses (Gillies, 2021).

Mar 3 to 5: The three other provinces announced a 16-week extension for second doses (Government of Alberta, 2021f, paras. 1–3; Province of Manitoba, 2021q, para. 9; Saskatchewan Ministry of Health, 2021g, para. 9).

Mar 17: "#ProtectMB" campaign launched (Province of Manitoba, 2021t).

Mar 18: SK enacted paid leave (Saskatchewan Ministry of Health, 2021j, paras. 8–9).

Mar 18: SK began using an online and a telephone appointment booking system (Saskatchewan Ministry of Health, 2021j).

Mar 19: MB announced a new accelerated process for administration at super-sites (Province of Manitoba, 2021u).

Mar 24: AB announced risks related to AstraZeneca, but they framed this as being "one in 1 million doses" (Hinshaw, 2021d, para. 36), not 99.99% safe.

Mar 26: SK announced a partnership with Indigenous Service Canada to get vaccines to on-reserve communities (Saskatchewan Ministry of Health, 2021l, para. 1).

Mar 29: SK announced the "Stick It To Covid" campaign (Government of Saskatchewan, n.d.-h; Saskatchewan Ministry of Health, 2021m).

Apr 6: BC's online booking system launched (Office of the Premier, 2021e, para. 4).

Apr 8: First identified case of Delta in AB (Pullen, 2021, sec. Delta variant concerns).

Apr 8: Angus Reid (2021a) poll showed A drop in VH in all Canadian provinces: AB saw the biggest drop, 20 percentage points, but was still in the lead at 25%; SK was second, with only a 4 percentage point drop, at 22%; MB was third with only a 3 percentage point drop to 20%, and BC saw the second largest drop nationally, 10 percentage points, down to 14%.

Apr 19: BC implemented paid leave (BC Ministry of Labour, 2021b).

Apr 21: AB implemented paid leave (Copping, 2021a).

Apr 26: AB identified meat-packing plants as high risk, so they soon implemented on-site clinics (Government of Alberta, 2021p).

May 3: BC's Premier held a virtual meeting with community leaders to bolster vaccination rates (Office of the Premier, 2021g, para. 3).

May 3: MB announced a physician team for giving advice and guidance to citizens at vaccine super sites and doctor's offices (Province of Manitoba, 2021w).

May 4: AB doubled fines to $2000 for violations of the Public Health Act (Government of Alberta, 2021q, sec. Strengthening enforcement).

May 5: Health Canada authorized the first use of a vaccine for children 12 to 15 years of age; same formulation previously approved for those 16 and up (Health Canada, 2021b, para. 1).

May 10: Announcement that Montana, which borders BC, AB, and SK, would provide free vaccinations to truckers entering the state (Government of Alberta, 2021r, para. 6).

May 11: MB announced a social media campaign targeting those 18 to 35, especially Indigenous youth (Province of Manitoba, 2021x).

May 12: MB enacted paid leave (Lockton Global Compliance, 2021, sec. Manitoba).

May 12: BC hit the 50% first dose mark for those eligible, people 12 and up (Office of the Premier, 2021h).

May 15: MB reached the 50% first-dose mark for those 18 years and up (Province of Manitoba, 2021y).

May 17: Angus Reid (2021a) poll showed SK now the leading province with the highest percentage of those expressing VH, 24%, taking the lead from AB, now in second at 17%; MB was at 12%, BC at 11%, and the range for the remaining provinces was between 10 and 11%.

May 18: AB hit the 50% first-dose mark for those 12 and up (Mertz, n.d., para. 1).

May 19: MB announced an engagement campaign, one of many similar efforts, but this was VH-specific (Province of Manitoba, 2021z).

May 21: MB announced a coordinated effort with North Dakota to vaccinate truckers (Province of Manitoba, 2021ab).

Jun 1: SK announced it would follow NACI guidelines and allow mixing of first and second doses (CTV News Regina, 2021), and what brands were available where was advertised to allow for choice (Bell, 2021, para. 11).

Jun 2: SK began reporting vaccination rates for all those eligible, people 12 and up (Saskatchewan Ministry of Health, 2021u, sec. Vaccines Reported), not just those 18 and up (Saskatchewan Ministry of Health, 2021t, sec. Vaccines Reported).

Jun 3: MB announced Community Outreach and Incentive Grants to fight VH (Province of Manitoba, 2021ac, para. 3).

Jun 8: MB announced its vaccine passport, the Manitoba Immunization Card (Province of Manitoba, 2021ad, para. 4), the first in Canada (Best Health, 2021).

Jun 9: MB announced a lottery of seven $100,000 prizes and ten $25,000 scholarships (Province of Manitoba, 2021ae).

Jun 9: MB reached 67.4% for first doses for those 12 and up (Bernhardt, 2021a, para. 3).

Jun 14 & 15: AB announced its first lotteries, each for $1 million, with others later announced (Government of Alberta, 2021v, 2021w).

Jun 15: AB announced that only "0.015% of all people who have been vaccinated… experienced an adverse event…. Most[ly] minor symptoms" (Hinshaw, 2021g, paras. 21–22); those expressing VH might find this dubiously low.

Jun 15: SK announced pop-up clinics in convenient places (Saskatchewan Ministry of Health, 2021v, paras. 1–2).

Jun 15: SK announced it would not use lotteries (Global News, 2021).

Jun 18: BC hit the 75.1% first-dose and 17.8% second-dose marks for those 12 and up, those eligible (Henry & Dix, 2021j, para. 2).

Jun 29: SK announced it would have no vaccine passport (Djuric, 2021, para. 2).

Jul 1: BC State of emergency ended (Office of the Premier, 2021k, para. 3), first called on Mar 17, 2020; they declared another three weeks later in response to wildfires (BC Minister of Public Safety and Solicitor General, 2021).

Jul 5: MB reached 75.1% first-dose and 51.5% second-dose marks for those 12 and up (CBC News, 2021a, para. 3).

Jul 7: SK's new slogan, "Living with Covid-19" (Saskatchewan Ministry of Health, 2021y).

Jul 7: MB passed the 75% first-dose and 50% second-dose marks for those 12 and up (Province of Manitoba, 2021ag).

Jul 11: SK ended its state of emergency (Djuric, 2021).

Jul 14: As Delta started spreading substantially, AB hit 74.2% for first doses and 55.9% for second doses among those eligible (Government of Alberta, 2021ac).

Jul 20: BC hit the 80% first-dose and 54.4% second-dose marks for those 12 and up (BC Ministry of Health, 2021h, para. 1).

Jul 22: AB hit the 75% first-dose and 61.3% second-dose marks for those 12 and up (CBC News, 2021b, para. 2).

Jul 26: SK announced Delta was circulating (Saskatchewan Ministry of Health, 2021aa, para. 11).

July 27: "Vax for BC" announced (BC Ministry of Health, 2021i, para. 4).

Jul 29: SK hit 75% first-dose and 63% second-dose marks for those 12 and up (Saskatchewan Ministry of Health, 2021ab).

By the end of July: BC walk-ins and targeted clinics appeared (BC Ministry of Health, 2021i, para. 3; Office of the Premier, 2021l, para. 6).

Aug 3: MB hit 80% first-dose mark with expectations to hit 75% second-dose mark the following week for those 12 and up (Province of Manitoba, 2021ai, para. 3).

Aug 3: SK began reporting data weekly instead of daily (Saskatchewan Ministry of Health, 2021ac).

Aug 12: BC announced that by Oct 12, long-term care and assisted living workers required two doses (Judd, 2021b, paras. 1–3).

Aug 19: U of Manitoba announced a mandate for all on campus (University of Manitoba, 2021).

Aug 21: MB Hit the 81.2% first-dose and 75% second-dose marks for those 12 and up (Billeck, 2021, paras. 1–2).

Aug 23: BC Vaccine Card announced, effective Sep 13 (BC Ministry of Health, 2021n).

Aug 23: BC changed reporting on data to reflect vaccination status (BC Ministry of Health, 2021m, paras. 9–12).

Aug 24: MB announced a mandate for provincial public employees who worked with vulnerable populations, requiring two doses by Oct 31, but they allowed for frequent rapid testing in lieu (Province of Manitoba, 2021aj).

Aug 24: In BC, Henry & Dix say that transmission is "primarily among unvaccinated people…. [who] continue to get sick and hospitalized" (BC Ministry of Health, 2021o).

Aug 25: BC announced a major uptick in vaccination rates, just after announcing the passport (BC Ministry of Health, 2021p).

Aug 30: SK announced that front-line HCPs would need proof of vaccination or undergo regular Covid-19 testing (Saskatchewan Ministry of Health, 2021ae, para. 11).

Aug 31: SK announced pop-up and walk-in vaccination clinics targeting under- and unvaccinated communities (Saskatchewan Ministry of Health, 2021af).

Aug 31: SK stopped using pages with the title "Covid-19 Update For The Week Of" as a consistent place to find data (Saskatchewan Ministry of Health, 2021af), and it had to be found elsewhere, often at "Stick It To Covid" pages (Saskatchewan Ministry of Health, 2021al).

Sep 3: The Manitoba Immunization Card went into effect (CHVN 95.1 FM, 2021).

Sep 3: AB announced a $100 payout to anyone vaccinated between this date and Oct 14 (Government of Alberta, 2021af, paras. 4–5).

Sep 3: Kenney called it a "crisis of the unvaccinated" (Short, 2021).

Sep 3: Métis Nation-Saskatchewan began its lottery (Kliem, 2021).

Sep 7: BC hit 85.1% of first doses administered and 77.6% of second doses (BC Ministry of Health, 2021q, para. 1).

Sep 8: Delta peaked in AB (Government of Alberta, n.d.-d).

Sep 10: The Saskatchewan Health Authority announced the mandate's extension to all HCPs, not just front-line employees (Saskatchewan Ministry of Health, 2021ai, para. 16).

Sep 13: BC announced mandate expansion to all HCPs, started Oct 26 (Judd, 2021c, paras. 1–2).

Sep 14: Alberta Health Services' vaccine mandate went into effect (Yiu, 2021, pp. 3–4).

Sep 15: AB announced the Restrictions Exemption Program, effective Sep 20, and full vaccination was required by Oct 25 (Government of Alberta, 2021ah).

Sep 16: AB's second state of emergency went into effect (Herring, 2021), the first of which was declared on Mar 17, 2020, and lapsed on June 15, 2021 (O'Malley, 2021, pp. 15–16).

Sep 16: SK announced a passport (Saskatchewan Ministry of Health, 2021aj, para. 1), contrary to prior statements, doubling first-dose uptake in the days following (Dove, 2021, paras. 2–3).

Sep 17: AB announced vaccination rates tripled since REP announced (Joannou, 2021, para. 1).

Sep 17: AB hit the 80% first-dose and 72% second-dose marks for those 12 and up (Government of Alberta, 2021ai, para. 1).

Sep 21: Kenney dissembled about the efficacy of the $100 payout (Small, 2021).

Sep 24: SK hit 80% first-dose and 71% second-dose marks for those 12 and up (Saskatchewan Ministry of Health, 2021am), and "first doses more than doubled in the past week compared to the week before" (Saskatchewan Ministry of Health, 2021am, para. 2).

Sep 28: CBC reported that "Albertans are dying from Covid-19 at more than three times the average Canadian rate" (Kost, 2021b, sec. The province's Covid inaction).

Sep 28: SK announced the cost of testing in lieu of vaccination would be borne by individuals (Saskatchewan Ministry of Health, 2021an, para. 4).

Sep 30: AB announced a vaccine mandate for Alberta Public Service employees, effective Oct 12, and they had until Nov 22 to be fully vaccinated (Government of Alberta, 2021am, para. 7).

Oct 1: MB hit the 85% first dose mark (Manitoba Government [@mbgov], 2021).

Oct 1: SK's vaccine passport and mandate for all Government of Saskatchewan ministry, Crown and agency employees went into effect; regular, individually paid testing was an option (Saskatchewan Ministry of Health, 2021ap, para. 1).

Oct 5: Announcement of a vaccine mandate for BC Public Service Agency, requiring full vaccination by Nov 22 (BC Ministry of Finance, 2021a).

Oct 14: BC reached the 8 million dose mark (BC Ministry of Health, 2021w, para. 15); it took from July 16 to Aug 9 to go from 6 to 7 million (BC Ministry of Health, 2021g, para. 10, 2021j, para. 9), and from Aug 9 to Oct 14 for the next million; 24 days compared to 66, or almost three times longer.

Oct 15: SK added retail liquors sales to their list of places requiring vaccine passports (Saskatchewan Ministry of Health, 2021aq, para. 2).

Oct 19: SK announced people could book simultaneous Covid and flu vaccination appointments (Saskatchewan Ministry of Health, 2021as, para. 15).

Oct 21: MB ended its state of emergency, first declared on Mar 20, 2020 (CBC News, 2021h).

Oct 25: SK announced Sotrovimaba soon be available (Saskatchewan Ministry of Health, 2021at).

Oct 26: SK announced two new physician service codes, one for counselling VH patients and leveraging trust relationships, the other for vaccine administration (Saskatchewan Ministry of Health, 2021av, paras. 1–3).

Nov 1: AB hit the 87% first-dose and 80% second-dose marks for those 12 and up (Government of Alberta, 2021ar, para. 9).

Nov 1: BC announced unpaid leave for BC Public Service Agency employees who did not comply with the vaccine mandate (BC Ministry of Finance, 2021b).

Nov 1: BC hit 90.0% of first doses administered and 85.3% of second doses for those 12 and up (BC Ministry of Health, 2021z, para. 1).

Nov 3: AB announced that recent efforts by some people to provide merely verbal "proof" of vaccination was insufficient (Hinshaw, 2021c, paras. 4–7).

Nov 9: AB announced Sotrovimaba (Hinshaw, 2021p, para. 39).

Nov 12: AB provided the Janssen vaccine (Government of Alberta, 2021bi, para. 1).

Nov 19: Canada authorized the first vaccine for children 5 to 11 years of age, using a unique children's formulation (Health Canada, 2021c, para. 1).

Nov 23: SK announced family appointments (Saskatchewan Ministry of Health, 2021ba, para. 3).

Nov 26: SK announced it was working on a micro-targeting strategy for communities with high infection rates (Ellis, 2021, para. 4).

Nov 29: AB temporarily suspended the AHS mandate only at sites significantly at risk of service disruptions from insufficient staffing, thus allowing testing in lieu of vaccination for those who had no allowable exemption (Government of Alberta, 2021aw, paras. 1–2).

Nov 30: SK hit the 87% first-dose mark for residents 12 years and older, 80% for residents five and older, and 74% second-dose mark for residents five and older (Government of Saskatchewan, 2021ax, para. 10).

Nov 30: First confirmed case of Omicron in AB (Hinshaw, 2021s).

Nov 30: BC started reporting vaccination rates as people five and up instead of 12 and up (BC Ministry of Health, 2021ab, para. 1).

Dec 14: BC announced they would report suspected fraudulent vaccination records to law enforcement (Government of BC, 2021d, paras. 1–2).

Dec 15: In MB, all who attended the legislature now required full vaccination, including MLAs (K. Rosen, 2021).

Dec 15: MB hit 83.9% first-dose and 78.1% second-dose marks for those five and up (DePatie, 2021, para. 9).

Dec 17: BC announced increased spread of Omicron (BC Ministry of Health, 2021ad, para. 5).

Dec 21: AB reduced the minimum period between second and third doses from six to five months (Government of Alberta, 2021ay, para. 1).

Dec 21: AB announced increased restrictions effective Dec 24 (Government of Alberta, 2021az).

Dec 22: AB declared that Omicron was dominant (Hinshaw, 2021v).

Dec 23: In BC, major restrictions became effective, including the closure of gyms, dance studios, bars, and nightclubs (BC Ministry of Health, 2021af).

Dec 23: AB extended to "temporary" site-specific suspension of the AHS mandate to include all employees (Government of Alberta, 2021ba, para. 3); this appears to have been a conflict between AHS and the Kenney government.

Jan 4, 2022: SK announced that 95% of new cases were Omicron (Saskatchewan Ministry of Health, 2022a, para. 11).

Jan 7: Federal Health Minister, Yves Duclos, suggested provinces might eventually implement population-wide vaccine mandates (Zimonjic, 2022, para. 1).

Jan 7: Kenney of AB said he will not implement a population-wide vaccine mandate (Zimonjic, 2022, para. 18).

Jan 7: Moe of SK also said he will not implement a population-wide mandate (Zimonjic, 2022, para. 22).

Jan 7: MB hit the 84.5% first-dose and 77.9% second-dose marks for those five and up (Province of Manitoba, 2022a, sec. Vaccine).

Jan 10: MB stopped reporting in their "Covid Bulletins" vaccination percentages for the entire eligible population, and only provided this for 5- to 11-year-olds (Province of Manitoba, 2022d, sec. Vaccine).

Jan 20: AB's first apparent shift in messaging, the use of "incidental" case terminology (Government of Alberta, 2022c, para. 2).

Jan 20: AB announced Paxlovid would soon be available (Hinshaw, 2022e).

Feb 4: AB announced they reduced the 14-day isolation to 10, given Omicron's shorter incubation time, and also announced the shift to an endemic approach (Hinshaw, 2022g, paras. 14–16, 34).

Feb 7: SK drastically reduced its reporting frequency of Covid data on this date (Saskatchewan Ministry of Health, 2022f, para. 16).

Feb 7: Premier Moe of SK implored Ottawa to listen to the Freedom Convoy protestors (Stein, 2022, paras. 15–18).

Feb 8: AB announced and effectuated the end of the REP. (Government of Alberta, 2022d, para. 2).

Feb 10: AB announced it hit the 90% first-dose and 86.3% second-dose marks for those 12 and up, but this did not capture all those eligible, as people five and up were eligible by this time (Government of Alberta, 2022e, paras. 1–2).

Feb 12: SK hit the 85.4% first dose and 79.9% second dose marks for those five and up (Government of Saskatchewan, 2022h, para. 3).

Feb 14: SK's passport ended (Giles, 2022, para. 19).

Feb 15: BC reached 90.4% first-dose and 85.3% second-dose marks for those five and up (BC Ministry of Health, 2022d, para. 1).

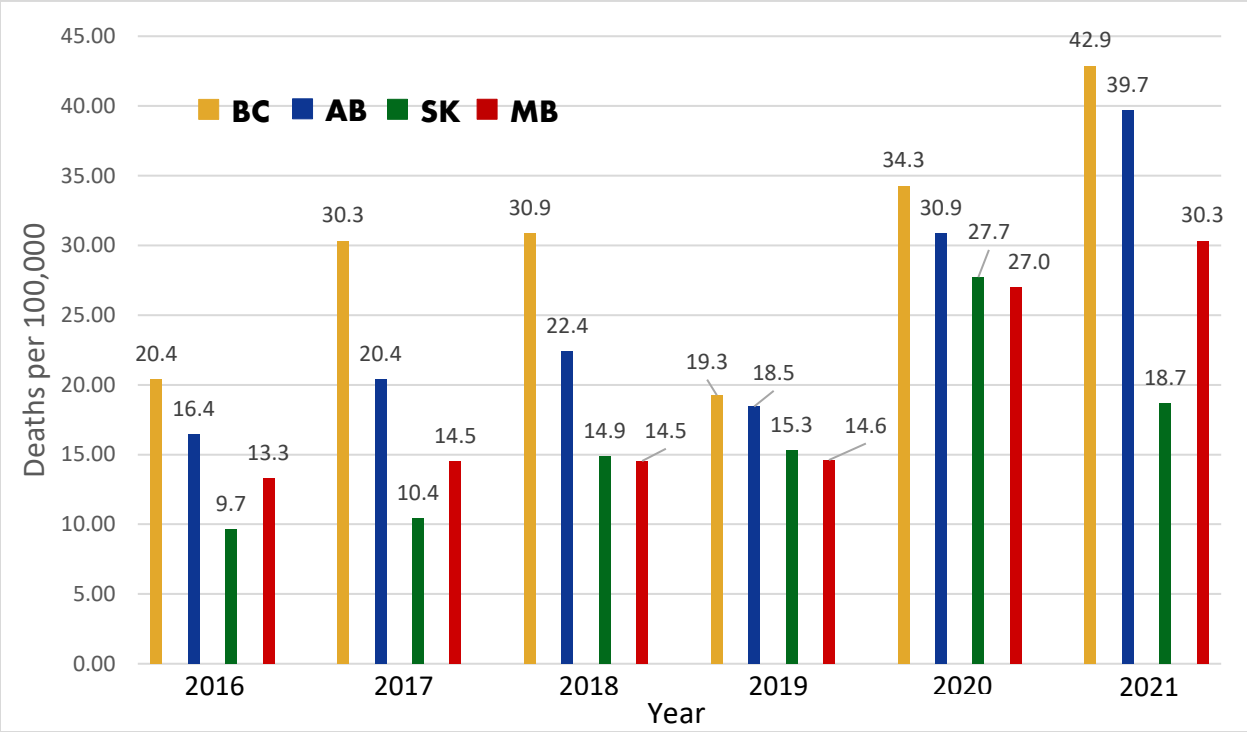
Mar 1: MB ended the Manitoba Immunization Card (CBC News, 2022e).

Apr 8: BC Vaccine Card ended (Pescod et al., 2022).

Appendix 2: Drug Poisonings in Alberta Now Equal British Columbia

The federal government's 3-year exemption, set to remove criminal penalties for possession of small amounts of certain illicit substances (BC Ministry of Mental Health and Addictions, 2022), was granted in response to BC's requests (BC Ministry of Mental Health and Addictions, 2021), and was unique in Canada as of the end of 2022. While the crisis was most severe in BC up to 2018, the problem in Alberta has since become no different (see Figure 6). Premier Kenney of Alberta was critical of the 3-year exemption, saying it "will likely result in a dramatic increase in drug use, violence, trafficking and addiction" (A. Boyd & Mosleh, 2022, para. 7), and he toes a line that goes back to the Harper Government's 2006 refusal to grant a continuing exemption to Vancouver's INSITE. This was North America's first supervised injection site and opened in 2003 under a Liberal Government (N. Boyd, 2013). The rhetorical contrast is dramatic, but efforts in both provinces are lacking, if the Covid-19 policy response is used as reference. Both Covid and drug poisonings are serious, complex, and challenging public health crises, but while the worst of Covid appears to have passed, not so for drug poisonings.

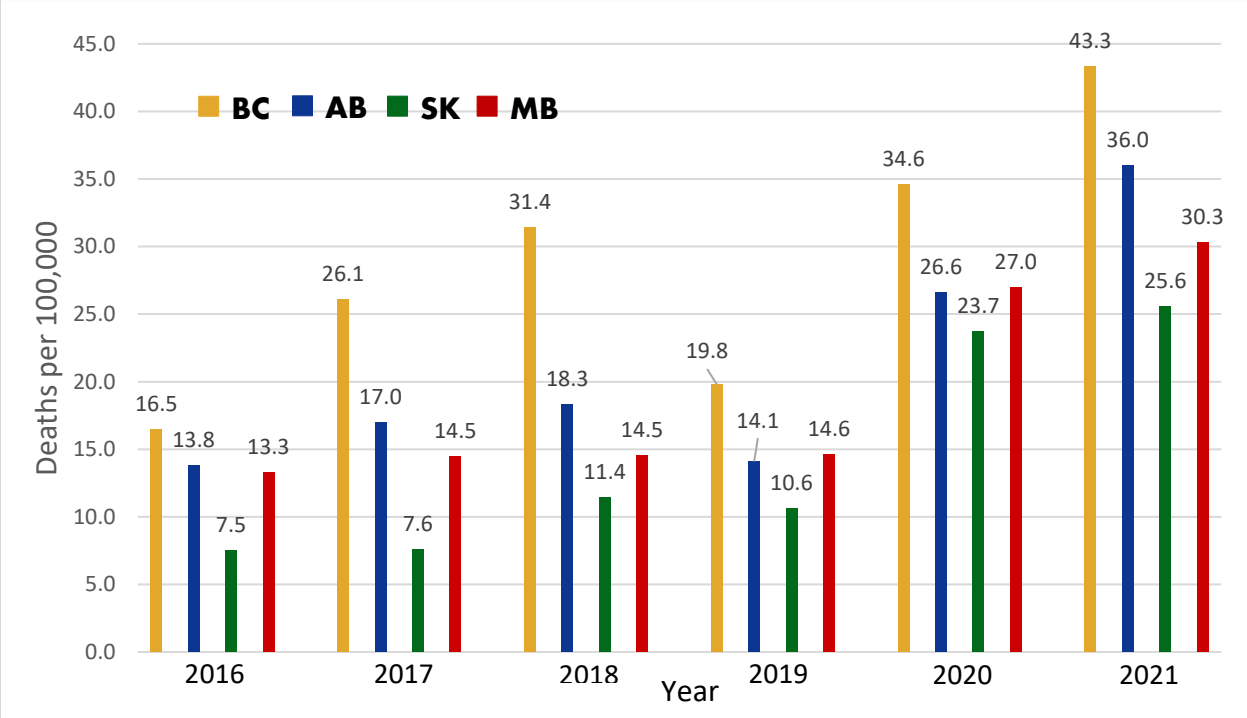
Figure 6 – Annual Drug Psn. Deaths per 100,000, Western Prov., 2016 to 2021, V1



Note. Drug poisoning data for BC, Alberta, and Saskatchewan were obtained from their respective provincial authorities (BC Coroners Service, 2022a, p. 4; Government of Alberta, n.d.-a; Saskatchewan Coroners Service, 2022, p. 1). Manitoba provided limited data (Manitoba Health, Seniors and Active Living, 2018, p. 1), so media sources were included (Coubrough, 2021a; Cram, 2022); but there was no 2018 data, so an average of 2017 and

2019 was used. Drug poisoning data were all given as raw, absolute numbers of deaths, so to convert them to deaths per 100,000, population data for each year from the respective provincial agency was used (BC Stats, 2022; Government of Alberta, 2022f; Saskatchewan Bureau of Statistics, 2022), except for Manitoba, where data was obtained from StatsCAN (2022c). All population data was for the first quarter of the year, except for BC, where it was for mid-year.

Figure 7 – Annual Drug Psn. Deaths per 100,000, Western Prov., 2016 to 2021, V2



Note. Data for this chart were obtained from the SCAEOO (2022) and there are discrepancies with Figure 6, the previous chart, for several reasons: First, for Alberta and Saskatchewan, and BC in 2016 and 2017, only *apparent opioid toxicity deaths* are included in Figure 7, not all drug poisoning deaths. From 2018 through 2021 in BC, however, this changed to include all deaths related to illicit drug poisonings. Last, this data set had no data for Manitoba, so reproduced here is Manitoba's data from Figure 6.

Appendix 3: Recent Developments with Financial Incentives

There is much recent debate over the effectiveness of financial incentives in bolstering Covid-19 VU, but its origins can be traced to the 1970s. According to Mellström and Johannesson (2008), the *crowding out* effect was first hypothesized by Richard Titmuss (1970) in his book, *The Gift Relationship*. He claimed the beneficial effect of an extrinsic financial incentive would be crowded out by the loss of altruistic, intrinsic motivations to donate blood.

Decades later, Mellström and Johannesson (2008) tested this experimentally with 98 participants in Sweden: They found an incentive of SEK50 (about US$7 at the time), in the form of two lottery tickets, had no effect on men, but deterred blood donations by women unless given the option to then donate the incentive to charity (p. 845). In Switzerland, Goette and Stutzer (2008/2020) conducted a similar study, but with over 10,000 participants who did not know they were part of the study: By giving participants a Swiss State Lottery ticket, blood donations increased substantially. The value Goette and Stutzer thought participants attributed to this incentive was its money price; they later posited that, rather than responding to its financial value, people viewed the ticket as a sign of good will from the blood donation services; but Goette and Stutzer ultimately rejected this argument (p. 16).

Lottery tickets as incentives are pertinent to this thesis, as Alberta implemented dozens, if not hundreds, of lottery prizes, and Métis Nations Saskatchewan and Manitoba did so to a lesser extent. To speculate, maybe people do not perceive the price of tickets as the incentive, but the extremely unlikely probability of winning, and the fantasy—this is the reward. Direct payment of money may be seen very differently. However, the value of such lotteries is doubtful, as with Ohio's Vax-a-Million lottery, which ran from the end of May through June 2021 (Chang et al., 2021, p. 2); this preceded and plausibly influenced Alberta's highly similar Open for Summer lottery by three weeks (Government of Alberta, 2021w).

In a study run in December 2020 involving nearly 2500 US participants, Iyer (2022) concluded that for incentives to be effective, they should be targeted. This study only measured intentions, not actual vaccination rates, and used up to a fictional $1000 inducement. Serra-Garcia and Szech (2022) ran another US study from December 2020 to February 2021 with approximately 2000 participants. They too only measured intentions, but in their experiment, they found a US$10 to 20 incentive had a negative effect, but an inducement of US$100 increased vaccination intentions. Importantly, they found subgroup differentiation, and while male Trump-supporters were especially prone to lower incentives deterring them, all groups similarly increased intentions with the higher sum, supporting the need to be attentive to subgroup targeting recommended by Iyer.

Klüver et al. (2021) ran a German study in March 2021 with over 20,000 participants. They too measured intentions, but they also showed the correlation between respondents' self-reported willingness to get vaccinated and their subsequent vaccination status two months later (p. 3). They found a one percentage point (PP) increase in vaccination intentions from a 25 Euro

(US$30 at the time) incentive, 2.2 PP increase from a 50Euro (US$60) incentive, 2.5 PP from a vaccine passport, and 3 PP increase from being able to get vaccinations from the local doctor's office (p. 1).

Campos-Mercade et al. (2021) ran a large-scale experiment with over 8000 participants in Sweden, from May through July 2021. They measured how a SEK200 (US$24) incentive affected both intentions and actual vaccinations and found a beneficial effect of the same magnitude for both. Thus, intentions translated into veritable vaccinations in this study too, but they found no subgroup differentiation.

Concurrent with Campos-Mercade et al. (2021), Chang et al. (2021) also ran a study from May through July 2021, but in California: They measured actual vaccination rates, the number of participants is unclear, and randomized participants to incentives of either nothing, US$10, or US$50. They found both incentives led to drops in vaccination, the opposite of findings by Klüver et al. (2021), using incentives covering a similar range; and this was especially the case among Trump-supporters and people over 40. In contrast to the European studies of Klüver et al. (2021) and Campos-Mercade et al. (2021), Chang et al. (2021) found the link between intentions and actual vaccinations to be weak in the US: An increase in intentions of 10 PP was only associated with a 1.5 PP increase in veritable vaccinations (p. 6).

Wollbrant et al. (2022) used a natural experiment from 2010 to obtain some highly relevant results. This involved the phasing out of the SEK0.5 coin and a transition for beverage can deposit from SEK0.5 to SEK1.0, which occurred gradually and represented an increase in the financial incentive to engage in the pro-social behaviour of recycling. Their input data involved "20,370 independent observations derived from [the] aggregation of approximately 27 million individual decisions" (p. 1). Obviously, there was no control group, but the large sample size allowed for a novel observation: The apparent contradiction of prior research was now explained by an S-shape curve, illuminated by much higher resolution data. As incentive amounts increased, so too did recycling rates, but as they increase further, they declined, only to increase after financial incentives increased even more, still. One limitation of this study, however, is the meagre incentive involved, a change from roughly 5 to 10US¢. Thus, while this might not easily translate to the magnitude of the monetary value of Covid-19 vaccination incentives, the pattern is consistent with Serra-Garcia and Szech's (2022) observation of a drop of intentions with a US$10–20 incentive, but an increase with a US$100 incentive.

A few key points can be drawn from all this: First, not only does the magnitude of financial incentives matter, but it may also vary depending on context. Second, some differences noted above may have a geographic element, and these may form part of the contextual differences just noted. Third, while intentions in Europe may translate into actual vaccination rates, the effect in the US appears far more muted. Last, three US studies noted how subgroups responded differently to treatments, including financial incentives (Chang et al., 2021; Iyer et al., 2022; Serra-Garcia & Szech, 2022), while of the European studies that investigated subgroup

differentiation, two showed treatment effects (Campos-Mercade et al., 2021, p. 2; Mellström & Johannesson, 2008), while another did not (Klüver et al., 2021, p. 3).

Given the US influence on Canadian culture, conjecturing a "North American" example is reasonable. Lower financial incentives were detrimental in the US, yet recommendations for those on the scale of US$100 are not based on behavioural observations, so it remains unclear if these would genuinely be effective in North America. However, if it turns out such incentives would work—a big if—aiming those efforts at certain subgroups is best, so uniform financial inducements are misguided. Alberta and Manitoba did not target their incentives, but the Métis Nation's lottery in Saskatchewan did, and at an appropriate population; but this was not an effort from the Government of Saskatchewan. Last, Ohio's Vax-a-Million lottery provides real-world observational evidence discouraging such lotteries (Chang et al., 2021, p. 2).

Appendix 4: Rights, Politics, and Policy Challenges

The various Covid-19 policy approaches cluster into two broad categories, the libertarian orientation and individual freedoms, and the collectivist approach. Non-Canadian examples of this were sometimes more extreme, like the highly permissive and unrestricted approaches in Texas and Florida, American individualistic libertarian examples (Lutz, 2021); or the strict and prolonged lockdowns in Scotland, which demonstrated the opposite (Pickering & Armstrong, 2021), as did those in New South Wales (Al Jazeera, 2021).

When balancing individual freedoms and collective interests in Canada, the Charter is paramount, which can be largely understood as a legal instantiation of duty ethics. A minister of health is ethically bound to the utilitarian approach, but any efforts to maximize group interests must ultimately conform to requirements set out in the Charter,[76] and any group rights derive from those of individuals, i.e., group rights are in terms of a collective of individuals, and not as *corporate rights*, which are not reducible to its members (Jones, 1999). Thus, group rights under the Charter are the aggregate of individuals' rights; no corporate group entity has rights independent of its members, as if it were a person; presumably, Charter rights only apply to actual human persons, be they for an individual or a collective thereof. Hence, any conflict between the two ethical orientations noted above is in legal terms of individuals or aggregates of individuals, and the individual is paramount in Anglo-American countries (Chui et al., 2010).

One cannot say which ethical theory is morally superior, the utilitarian or the duty-based one, because such an analysis can only proceed through the lens of an ethical theory, so the problem is circular. Neither of the two ethical theories applied in healthcare has won out over the other; instead, context determines which is more appropriate. As noted above, however, the Charter imposes a legal framework of rights, something which is far more consistent with deontological than utilitarian ethics, since the notion of rights aligns with duty ethics (Caranti, 2014). Moreover, since it is practically impossible to determine which ethical theory is superior, it is reasonable to assume, so far as the Anglo-American world is concerned at least, the existence of rights-based legal frameworks implies a choice granting supremacy to deontology.

The degree to which any province approached Covid-19 policy by emphasizing either individual freedoms or collective interests somewhat aligned with political party affiliations: During the period of analysis, Alberta, Saskatchewan, and Manitoba all had conservative governments and were more resistant to restricting personal freedoms; conversely, BC, with its socially oriented NDP majority,[77] more willingly imposed a variety of restrictive measures, but not nearly as strong as those seen in some Australian States (see CBC News, 2020; Jose, 2021; Jose & Barrett, 2021, for detail about lockdowns in Australia).

[76] See Kluge for a discussion on the challenges and potential conflict in allocating resources at the policy level versus direct patient care.

[77] They won a majority in October 2020 (Boegman, 2021), but previously they formed a power-sharing government, technically not a coalition, with the Green Party in 2017 (Archer, 2017).

Canadian jurisdictions rolled out substantial vaccination programs in early 2021, weeks behind efforts in the UK and US, but well ahead of Australia and New Zealand (Mathieu et al., 2021, fig. "Share of people vaccinated"). No national state of emergency was called by the Government of Canada, and instead, each province declared its own (Lawson et al., 2022). Aside from extremely costly wage subsidy and replacement programs and managing border permeability—the only substantial areas of federal policy—most of what remained was left to the provinces, although the federal government provided support for those provincial efforts (PHAC, n.d.-a). While double dose vaccination rates approached 80% of those eligible by the end of summer 2021 (Mathieu et al., 2021, fig. "Share of people vaccinated"), the provinces implemented vaccine passports in rapid succession, even by governments averse to restricting individual freedoms.

While vaccine passports meant vaccinations remained "voluntary" for the general population in all provinces,[78] they were compulsory for certain subgroups. For example, BC mandated vaccination for long-term care and assisted-living employees in summer 2021 (Judd, 2021b), and extended it soon after to all healthcare workers, such as nurses (Judd, 2021c). The BC nurse's union, while pro-vaccine, opposed making them mandatory. However, some union members agreed with the province, causing a schism within the union, and within days, the head of the union resigned (S. Little, 2021). The matter of volition was relevant to other cases too.

In any modern polity—probably in any polity—one cannot escape the influence of ideology. It is uncontroversial to claim the notion of freedom is fundamental to Canadian society, which is central to Western thought, as proffered both by Ferguson (2011, sec. "Introduction") and Franck (1997). "Freedom loving" is a loaded term often used to rouse support for ideological purposes, but the concept of a *free society* is nevertheless important, and in this spirit, Saskatchewan initially avoided imposing restrictions on the public at large (CKOM News, 2021; Djuric, 2021). However, they simultaneously mandated overtime for nurses (Saskatchewan Union of Nurses, 2021), which was needed to manage the explosion of Covid-19 hospitalizations resulting from their more permissive approach. Thus, the province merely traded the limitation of one freedom for another, but placed the burden on nurses in doing so, something antithetical to the partly labour union roots of the CCF (Morley, 2006), a now bygone era in Saskatchewan.

Regardless of the politics involved, the underlying issue is one of juxtaposing the rights of various individuals and groups in society. The complexity of the problem of Covid-19 made it exceedingly difficult to create the right policy mix; far be it for the author of this proposal to prognosticate what the best mix ought to have been, especially with the advantage of hindsight. This appendix merely draws attention to how the deployment of tools for VH, and for Covid more broadly, interacted with political dynamics, and how these dynamics presented challenges to important ethical considerations.

[78] See the Retail Council of Canada (n.d.) for a list of provinces requiring proof of vaccination for access to various venues.

Appendix 5: How Data Was Obtained for Figure 3, Leading Causes of Death in Canada

Covid-19 data was valid up to May 19, 2022 (PHAC, n.d.), and is the only category that is not age-adjusted. All other figures were prorated for 2020, 299 out of 366 days, and for 2022, 139 out of 365 days; these were obtained from StatsCAN (2020a) data from 2010 through 2020; and to get predictions for 2021 and 2022, a linear trend forecast was applied in MS Excel.

The exception was for accidental deaths: A multi-step process (described in detail in the next paragraph) was used to disaggregate accidental deaths into two subcomponents, opioid toxicity (OT) deaths and non-opioid toxicity (NOT) deaths; a trend forecast was subsequently applied to each, and the resulting predictions were then recombined to produce the accidental deaths data, as shown in the figure. This was done to generate more accurate trend forecasts by separating the rapid acceleration in drug poisoning deaths from more muted trends in other accidental deaths; and while deaths from falls have also risen rapidly in recent years (StatsCAN, 2019, p. 2), deaths from falls were overly onerous to account for similarly.

The first phase of that multi-step process for obtaining more accurate accidental death data involved getting OT death data from 2016 through 2021 and calculating a projection for 2022: “Apparent opioid toxicity deaths” were obtained from the Special Advisory Committee on the Epidemic of Opioid Overdoses (SCAEOO, 2022) for 2016 through 2021; but all drug poisoning deaths, not just OT deaths, were given for BC from 2018 onward and for Quebec from 2020 onward; and since these were given in deaths per 100,000, they were converted to absolute deaths using StatsCAN (2022c) population figures for each appropriate year. To these 2016 through 2021 OT deaths, a trend forecast was applied to get a 2022 prediction.

The next phase involved taking the StatsCAN (2022a) actual accidental deaths data for 2016 through 2020 and subtracting those SCAEOO (2022) actual OT deaths for the same period; this produced all other accidental deaths, i.e., NOT accidental deaths, in those years. A trend forecast was applied to these actual NOT accidental deaths, 2016 through 2020, to generate predictions for 2021 and 2022.

The third phase involved reaggregating these elements: NOT accidental deaths from 2016 through 2022 (2021 and 2022 being predictions) were added to OT deaths 2016 through 2022 (2022 being a prediction) to produce reassembled figures for all accidental deaths from 2016 through 2022. On Jan 3, 2022, Dr. Gavin Parker said “Covid-19 is the fourth-leading cause of death in Canada” (McTighe, 2022, para. 22), contrary to this chart. Even though strokes and heart disease have been combined into CVD in this chart, Covid-19 would still rank 3rd, accidents 4th, and strokes 5th if these were separated. The two leading causes, cancer and CVD, caused 331,000 deaths, and the 4th through 11th caused 136,000 deaths.

Appendix 6: Detailed Chronology of Policy Tools

Federal Government

- Jan 7, 2022: Announcement of the possibility of an **incentive tool** for VH, one likely to cause a backlash, by Federal Health Minister, Jean-Yves Duclos: "Provinces are likely to introduce mandatory [population-wide] vaccination policies in the coming months" (Zimonjic, 2022, para. 1), which he based on his conversations with provincial health ministers and the implementation of such policies in some European nations.
- Jan 15, 2022: An **incentive tool** for VH, one that caused a major backlash and which became a **symbolic tool** for that backlash, the Federal vaccine mandate for truckers went into effect this day (Scherer, 2022, para. 4).
- "Starting January 15, [2022], unvaccinated Canadian truck drivers entering Canada will need to meet requirements for pre-entry, arrival and Day 8 testing, as well as quarantine requirements.... Unvaccinated or partially vaccinated foreign national truck drivers, coming to Canada from the US by land, will be directed back to the United States" (Manitoba Trucking Association, 2022, paras. 1–4)
- Jan 20, 2022: Jason Kenney requested the "federal government to pause a Covid-19 vaccine mandate for cross-border truckers" (Scherer, 2022, para. 1)
- Jan 22, 2022: Effective this date, "non-U.S. essential workers such as truck drivers and nurses who are crossing land borders [must] be fully vaccinated against Covid-19" to enter the United States (Shepardson, 2022, para. 1).

British Columbia

- Dec 9, 2020: Announced **capacity tools** for uptake to improve access, like various simulations, the Immunize BC Operations Centre, and a provincial vaccination team: "The first round of approximately 4,000 Covid-19 immunizations will begin on the Lower Mainland next week" (Office of the Premier, 2020a, para. 1).
- Many press releases and news conferences: These are **capacity tools** fundamentally for public safety, but some also address VH, and although they have several purposes, fundamentally they build communications capacity; the Dec 10, 2020, one is an example (Henry & Dix, 2020a).
- Dec 14, 2020: A news conference and press release saying first doses were delivered on this day (BC Ministry of Health, 2020a).
- Dec 15, 2020: The first British Columbian was vaccinated (Migdal, 2020).
- Dec 15, 2020: Messages as **symbolic and capacity tools** for uptake but also in anticipation of VH featuring positive, altruistic aspect and safety and efficacy elements, but which are not specific to HCPs: The first vaccinations targeting those "who work in long-term care homes and front-line healthcare…. [and] by getting immunized, they are helping to protect those

most vulnerable…. We now have a safe and effective vaccine" (BC Ministry of Health, 2020b, paras. 6–9).

- Dec 16, 2020: Fines and increased enforcement as **incentive tools** for public safety, later used for VH, and the message of which was a **capacity and symbolic tool**; could be considered as using loss-framing, but this is a stretch; the announcement that now "gaming investigators, conservation officers, community safety unit inspectors, and liquor and cannabis inspectors" will actively support police (Office of the Premier, 2020b, para. 3), and shortening the period before tickets are sent to collection from (up to) a year down to 30 days (para. 5); 66 fines of $2300 were issued to corporations up to this date, and 224 fines of $230 were issued to individuals (para. 9).
- Dec 17, 2020: Distribution of vaccines to clinics in all regions as **capacity tools** for uptake to improve access. "The province will receive weekly vaccine deliveries for clinics in every health region across the province" (Henry & Dix, 2020b, para. 6).
- Dec 29, 2020: The announcement of the first Moderna shipment, which will arrive the following week (Henry & Dix, 2020c).
- Jan 21, 2021, press release from Horgan saying "the review of our legal options made it clear we can't prevent people from travelling to British Columbia" (Office of the Premier, 2021a, para. 4).
- Jan 22, 2021: Announcement of BC's immunization plan as a **capacity and symbolic tool** for uptake to improve access (Office of the Premier, 2021b).
- Jan 28, 2021: First Nations Health Authority webpage noting that phase 1, from late December 2020 through February 2021, included remote and isolated Indigenous communities (First Nations Health Authority, 2021a, para. 2).
- Feb 16, 2021: A message as a **symbolic tool** for VH informing about efficacy, but not specific to HCPs, "vaccines stimulate our immune system to protect us from viruses like Covid-19. These new vaccines are proving to be highly effective even with one dose, upwards of 89% effective in B.C. residents in long-term care" (Henry & Dix, 2021a, para. 18).
- Feb 23, 2021: Soon to be, mass vaccination clinics are a **capacity tool** for uptake improving access, "which will begin in April" (Henry & Dix, 2021b, para. 7).
- Feb 23, 2021: Enactment of a **capacity tool** for uptake to improve access, and order expanding the number of professionals who could administer Covid vaccines (College of Dental Surgeons of BC, 2021, paras. 1, 4), further expansion happened on Mar 14, 2021 (College of Pharmacists of BC, 2021, para. 4), and again on Jan 9, 2022 (Regulated and Unregulated Health Professionals SARS-CoV-2 Immunization – January 9, 2022, 2022).
- Mar 2, 2021: Announced extension to 16 weeks between doses, a **capacity tool** for uptake to improve access (Henry & Dix, 2021c, paras. 12–13).
- Mar 2, 2021: Announcement of call centres for vaccination bookings, a **capacity tool** for uptake but eventually VH too, improving access (BC Ministry of Health, 2021a).

- Mar 18, 2021: A **capacity tool,** improving access for uptake, which targeted "more than 300,000 front-line workers, including first responders, grocery store employees, and teachers and child care workers, [who] will be eligible for Covid-19 vaccinations over the coming weeks" (Office of the Premier, 2021c, para. 1).
- Mar 23, 2021, press release announcing acceleration of immunization plan (BC Ministry of Health, 2021b).
- Mar 24, 2021: Improving access, the announcement of a **capacity tool** for uptake, the training of 1400 hospitality workers to facilitate the function of mass clinics (Office of the Premier, 2021d).
- Mar 31, 2021: As **capacity tools** for uptake, which improved access, community pharmacies in the Lower Mainland began vaccinations, and there was also an online list of participating locations (BC Ministry of Health, 2021c);.
- Apr 1, 2021: Announced as an **incentive tool** for public safety, "a worker can now take job-protected leave if they need to care for other family members because of Covid-19, and not only a child or dependent adult as previously defined" (BC Ministry of Labour, 2021a, para. 7).
- Apr 6, 2021: Effective that day as a **capacity tool** for uptake, an online booking system improving access (Office of the Premier, 2021e, para. 4).
- Apr 9, 2021: In a press release and news conference it was announced BC just hit the 1 million dose benchmark (Henry & Dix, 2021d).
- Apr 12, 2021: Throne speech saying 1,400 hospitality workers being trained to work in mass vaccination clinics, a **capacity tool** for uptake to improve access (Office of the Premier, 2021f, para. 3).
- Apr 19, 2021: Effective that day, an **incentive tool** for uptake and VH aimed at easing access, workers can now take up to three hours paid leave to get vaccinated (BC Ministry of Labour, 2021b).
- Apr 23, 2021: A message as a **symbolic and capacity tool** for uptake and VH appealing to altruism: "We encourage everyone to register on the Get Vaccinated website…. [and] continue our efforts to keep communities safe, protect our loved ones and support B.C.'s health-care system from the pressures Covid-19 places upon it" (Henry & Dix, 2021e, paras. 9–10).
- May 3, 2021: A **capacity tool** for uptake and VH aimed at increasing communications capacity, Horgan met virtually "with dozens of community leaders… mayors, youth, non-profits, business leaders, academics, social media influencers, and faith leaders—to enlist their help in encouraging all community members to register for vaccination, especially in high transmission neighbourhoods" (Office of the Premier, 2021g, para. 3).
- May 5, 2021: Announced a **capacity tool** for uptake prioritizing pregnant women, easing access for them (BC Ministry of Health, 2021d).

- May 7, 2021: BC announced it hit the 2 million dose mark (Henry & Dix, 2021f, para. 8), this, and others like it, are **capacity and symbolic tools** for VH that apply normative pressure.
- May 12, 2021: BC announced it hit the 50% first-dose mark for those eligible, those 12 (Office of the Premier, 2021h), a **capacity and symbolic tools** for VH that applies normative pressure; Health Canada approved 12 and up in May 5
- May 16, 2021: Improving access, the announcement of a **capacity tool** for uptake: "A new partnership between the Province, City of Surrey, and Fraser Health is creating new opportunities for people in Surrey to get vaccinated against Covid-19" (BC Ministry of Health, 2021e, para. 1).
- May 20, 2021: News article noting that "there is no limit to the age that somebody can consent for medical treatment, including immunization" in BC, and this is part to the pre-existing framework which has been in place for several years, i.e., there are no changes to this due to Covid (Judd, 2021a, para. 4)
- May 21, 2022: News article notes **capacity tools** for VH aimed at easing access, the use of "pop-up clinics and outreach efforts in places of worship…. [and the] South Asian Covid-19 Task Force" (Garrett & McArthur, 2021, paras. 6–7).
- May 25, 2021: Effective this day, an **authority tool** for public safety, step 1 of BC's 4-step Restart Plan begins (Office of the Premier, 2021i).
- May 27, 2021: BC hits 3 million dose mark (Henry & Dix, 2021g, para. 6)
- June 6, 2021: Announcement as a **symbolic and capacity tool** for VH using altruistic messaging: From the Parliamentary Secretary for Seniors' Services and Long-Term Care, "remember that getting immunized is the best way to protect yourself and seniors and Elders, and to put Covid-19 behind us" (Elmore, 2021, para. 7).
- Jun 8, 2021: An announcement as a **capacity and symbolic tool** for VH communicating safety and efficacy, but not HCP specific, "for those who received the AstraZeneca vaccine for your first dose, you have a choice. There is no wrong choice to make. Whether you choose a second AstraZeneca vaccine or have an mRNA vaccine instead, all of our vaccines are safe and highly effective" (Henry & Dix, 2021h, para. 9).
- Jun 8, 2021: A **capacity tool** for VH building communications capacity, a town hall Dr. Henry had with student leaders (BC Ministry of Advanced Education and Skills Training, 2021a).
- Jun 14, 2021: A press release as a **symbolic and capacity tool** for VH using altruistic messaging and applying normative pressure, Adrian Dix said, "with more than 75% of adults in B.C. vaccinated…. help us protect our communities for the long term" by getting vaccinated (Office of the Premier, 2021j, para. 15).
- Jun 18, 2021: Joint statement as a **capacity tool** for VH informing of safety and efficacy, but not HCP specific: "Our mass vaccine clinics will do their best to provide the same mRNA vaccine (Pfizer-BioNTech or Moderna) for both doses, [but] this may not always be possible. You may be offered the other mRNA vaccine instead. Interchangeability, having a different

mRNA vaccine for your second dose, does not impact effectiveness or safety. All of our vaccines are safe and highly effective and that is the case whether you have the same or different vaccine for your second dose" (Henry & Dix, 2021i, paras. 7–8), but in Alberta, individuals got to choose.

- Jun 18, 2021: Reached 75.1% firsts-doses for all eligible, those 12 and up, and 17.8% second-dose mark, the latter calculated from the data on the cited webpage (Henry & Dix, 2021j, para. 2) .
- July 1, 2021: State of emergency no longer in force (Office of the Premier, 2021k, para. 3), which was first declared on Mar 17, 2020 (Minister of Public Safety and Solicitor General, 2020, para. 2).
- Jul 16, 2021: BC reached 6 million doses administered (BC Ministry of Health, 2021g, para. 10).
- Jul 20, 2021:"80.0%... of eligible people 12 and older in B.C. have received their first dose… and 54.4%... their second"(BC Ministry of Health, 2021h, para. 1) .
- Jul 20, 2021: Website noting lower uptake among First Nations, which said "81 per cent of eligible people in BC… had received their first dose of a Covid-19 vaccine. As of July 16, the rate for First Nations people was just above 64 per cent" (First Nations Health Authority, 2021b, para. 3).
- Jul 27, 2021: A press release announcing two **symbolic and capacity tools**, an "opportunity" and a message, both for VH both using <u>altruistic messaging</u>:
    1) "Vax for BC… opportunity… to share messages and notes of gratitude to pandemic heroes…. online, in their windows at home, and in-person at vaccination locations" (BC Ministry of Health, 2021i, para. 4); although this involved <u>amplifying citizens voices, it was not about sharing stories from those who had been vaccinated</u>.
    2) "Join the millions of people in our province who have taken this step, not just for themselves, but for their larger community" (para. 5), <u>normative.</u>
- Jul 27, 2021: **Capacity tools** for VH <u>easing access</u> effective this date and through the end of August, "community events, vax vans, and mobile clinics will be up and running in dozens of communities in B.C. to get more people vaccinated with their first and second dose of the Covid-19 vaccine…. [allowing for] walk-in" appointments (BC Ministry of Health, 2021i, para. 3).
- Jul 27, 2021: Announcement of a **capacity tool** for VH <u>easing access</u>: "A full [online] list of Vax for BC events happening throughout the province" (BC Ministry of Health, 2021i, para. 10).
- July 29, 2021: Announcement of **capacity tools** for VH <u>improving access</u>: "Health authorities will bring vaccines to British Columbians where they work, play, and shop—at the beach, at Playland in Vancouver, and in farmers' markets around the province" (Office of the Premier, 2021l, para. 6).

- July 29, 2021: A news article noting an **incentive tool** for VH: Up to this date at least, BC required "unvaccinated long-term care workers to wear masks and undergo testing three times a week" (Vogel & Duong, 2021, para. 7).
- Aug 4, 2021: A **capacity tool** for VH to improve access: "The first provincewide Walk-In Wednesday…. clinics throughout the province will reserve approximately 20,000 doses for walk-in vaccinations for anyone 12 years and older still needing their first dose or people eligible to receive their second dose" (BC Ministry of Health, 2021i, para. 6).
- Aug 9, 2021: The 7 million dose mark was reached (BC Ministry of Health, 2021j, para. 9).
- Aug 12, 2021: Announcement of an **incentive tool** for VH with significant backlash potential, "everyone who works in long-term care and assisted living facilities in the province must be…. fully vaccinated by Oct. 12" (Judd, 2021b, paras. 1–3).
- Aug 20, 2021: A press release as a **symbolic and capacity tool** for VH uptake:
    1) A message encouraging people between 20 and 40 in the Interior Health Region to get vaccinated: "It is the most effective way to protect yourself and to reduce transmission in the community…. [and] the vast majority of our cases are in people who are unimmunized or partially immunized and in adults between 20-40 years old" (BC Ministry of Health, 2021l, paras. 6–8), altruistic.
    2) "The interval between first and second Covid-19 vaccine doses has decreased to 28 days for everyone" (para. 9), improving access.
- Aug 23, 2021: Announcement of an **incentive tool** for VH with potential to backfire, BC's vaccine passport called the BC Vaccine Card, (BC Ministry of Health, 2021n).
- Aug 23, 2021: Announcement of a **capacity tool** for VH informing of efficacy, but not HCP specific: The pandemic update format changed to include data differentiating cases based on vaccination status (BC Ministry of Health, 2021m, paras. 9–12).
- Aug 24, 2021: Announcement of **capacity tools** for VH to ease access: "Health authorities will target students, teachers, and school staff in vaccination campaigns over the coming weeks…. [in a variety of ways, like] pop-up, or, mobile, or community vaccine event[s] around the province" (BC Ministry of Education, 2021, paras. 11–12).
- Aug 24, 2021: Announcement by the province of an **incentive tool** for VH with low likelihood of resistance but significant potential to arouse backlash sentiments: "Students who are living in on-campus housing will also require proof of vaccination" (BC Ministry of Advanced Education and Skills Training, 2021b, para. 8).
- Aug 24, 2021: A message as a **symbolic and capacity tool** for VH using negative messaging, emphasizing transmission and hospitalization is largely driven by unvaccinated people (BC Ministry of Health, 2021o).
- Aug 25, 2021: A press release saying that vaccinations booking jumped dramatically immediately after vaccine passport announcement, a 107% increase from Monday and Tuesday of the previous week, Aug 16 and 17, compared to the next week, Aug 23 and 24 (as calculated from the data provided on the website) (BC Ministry of Health, 2021p).

- Sep 7, 2021: A **capacity tool** improving access and as a **symbolic tool** using altruistic messaging, both for VH:
    1) An announcement from the Minister of Education saying "public health officials are working with districts to hold vaccination clinics in schools as part of the community-based… effort" (Whiteside, 2021, para. 7).
    2) "If you have not yet received your vaccination, now is the time. The best way to keep students and our school communities safe is to ensure our communities are highly vaccinated" (para. 10).
- Sep 7, 2021: Launch of the BC Vaccine Card, a vaccine passport: "a digital or printed document [using an]…. individualized QR code and image showing either 'vaccinated' or 'partially vaccinated' [and] businesses can either scan the QR code using a QR reader like a smartphone or tablet or visually verify the person's proof of vaccination" (Office of the Premier, 2021m, opp. 1–7).
- Sep 7, 2021: BC hit 85.1% first doses administered and 77.6% second doses (BC Ministry of Health, 2021q, para. 1).
- Sep 9, 2021: A press release as a **symbolic and capacity tool** for VH using loss-framing but also informing people of efficacy, the first appearance of the use of rate ratios: "After factoring for age, people not vaccinated are 34 times more likely to be hospitalized than those fully vaccinated" (BC Ministry of Health, 2021r, para. 15).
- Sep 13, 2021: In effect, the BC Vaccine Card, an **incentive tool** for VH with potential to backfire: It included spaces like "indoor ticketed sporting events, indoor and patio dining in restaurants, fitness centres, casinos, and indoor organized events, like conferences and weddings (BC Ministry of Health, 2021n, para. 4); these "measures will be time limited through to Jan. 31, 2022, subject to possible extension" (sec. How it works).
- Sep 13, 2021: The announcement of a "toolkit" as a **capacity tool** for VH supporting the vaccine passport tool: "Businesses can now download the BC Vaccine Card Verifier App from the Google Play and Apple App stores and use the app to verify customers BC Vaccine Card, or visually verify the person's proof of vaccination. A government-issued photo is required for those 19+" (BC Ministry of Health, 2021s, para. 4); "Information for businesses and a toolkit can be found online: gov.bc.ca/VaccineCard-Businesses" (para. 5).
- Sep 13, 2021: Announcement that the vaccine mandate for those working in care homes was extended to include all health care workers, which went into effect Oct. 26 (Judd, 2021c, paras. 1–2).
- Sep 15, 2021: The BC Nurses' Union said that while it "strongly supports vaccination and evidence-based decision-making…. [they remain] concerned that the mandatory nature of the vaccination strategy will force members to leave, further exacerbating a staffing shortage that is increasingly unmanageable" (BC Nurses' Union, 2021, para. 6).
- Sep 27, 2021: Announcement that "the BC Vaccine Card will be the only acceptable proof of vaccination [and] the transition period, which allowed people to present their paper record of

immunization received at the time of their vaccination appointment" ends (BC Ministry of Health, 2021t, paras. 1–2).

- Oct 5, 2021: The announcement of an **incentive tool** for VH likely to cause a backlash, but also **symbolic** for those outside the agency, a vaccine mandate for BC Public Service Agency, which required full vaccination by Nov 22 (BC Ministry of Finance, 2021a).
- Oct 12, 2021 (ED): First announced on Aug 12, **incentive tools** for VH likely to cause a backlash, but more justifiable than others, it became "mandatory for all health-care workers in care homes to be fully vaccinated" (BC Ministry of Health, 2021k, para. 1); "all visitors to long-term care and assisted-living facilities will need to show proof they have received at least one dose" (BC Ministry of Health, 2021u, para. 18).
- Oct 14, 2021: The 8 million dose mark was reached (BC Ministry of Health, 2021w, para. 15); it took from July 16 to Aug 9 to go from 6 to 7 million, and Aug 9 to Oct 14 for the next million; 24 days compared to 66, or almost three times longer.
- Oct 14, 2021: A news article saying BC's north has especially low vaccination rates; this is attributed to an "independent streak" and a significantly higher proportion of the population being indigenous; the BC Vaccine Card appears to have been especially effective in the North, and "Adrian Dix said…. Fort St. John has seen the biggest increase in the proportion of the population getting vaccinated" (Kurjata, 2021, sec. Mandates making change).
- Oct 15, 2021: **Incentive tools** for VH with potential to backlash, but lacking alternatives, became effective, additional restrictions in the Norther Health Region as this region had relatively low vaccination rates: "Personal gatherings, both indoor and outdoor, are restricted to fully vaccinated people, including at private residences and vacation accommodation" (BC Ministry of Health, 2021v, para. 5).
- Oct 24, 2021: BC Vaccine Card required two doses, or full vaccination, and at least seven days since the last dose, at this point (BC Ministry of Health, 2021n, para. 4).
- Oct 25, 2021: An **incentive tool** for VH with backlash potential went into effect: "Capacity limits… [of] 50% for inside organized events and gatherings will be revised to allow 100% capacity in those settings where the BC Vaccine Card" is used (BC Ministry of Health, 2021x, para. 2).
- Oct 26, 2021: An announcement as a **capacity and symbolic tool** for VH meant to inform about safety, but might be interpreted as conveying the opposite message: "Our vaccines are *highly effective* [emphasis added]. However, we are starting to see a gradual decline in protection over time. As a result, we are taking the proactive step of expanding boosters to everyone in our province" (BC Ministry of Health, 2021y, para. 3).
- Nov 1, 2021: The announcement of an **incentive tool** for VH that might cause a backlash, unpaid leave for BC Public Service Agency employees who do not comply with the vaccine mandate (BC Ministry of Finance, 2021b).
- Nov 1, 2021: BC hit 90.0% of first doses administered for those eligible, people 12 and up, and 85.3% second doses for those 12 and up (BC Ministry of Health, 2021z, para. 1).

- Nov 22, 2021: BC Public Service Agency vaccine mandate in effect (BC Ministry of Finance, 2021a), and "where there is not an approved exemption based on a medical condition or other legitimate grounds, [an employee] will be placed on unpaid leave for three months" (BC Ministry of Finance, 2021b, para. 6).
- Nov 23, 2021: A press release as a **capacity and symbolic tool** for VH emphasizing the importance and safety of vaccination for children between five and 11 years old, which was approved by Health Canada on Nov 19 and will soon be available in BC (BC Ministry of Health, 2021aa).
- Nov 30, 2021: This was the first day in which BC changed to reporting vaccination rates as people five and up instead of people 12 and up (BC Ministry of Health, 2021ab, para. 1).
- Dec 14, 2021: A press release as a **symbolic and capacity tool** for VH using loss-framing but also informing people of efficacy: "The BC Centre for Disease Control reports that British Columbians who have not been vaccinated are 56 times more likely to end up in critical care due to Covid-19 than people who have received two vaccine doses" (Office of the Premier, 2021n, para. 5).
- Dec 14, 2021: Announcement of an **incentive tool** for VH noting that "personal vaccine…. records entered into the registry are reviewed using strict processes to prevent fraud and…. [that] are suspected to be fraudulent are being reported to law enforcement" (Government of BC, 2021d, paras. 1–2).
- Dec 14, 2021: The announcement of a **capacity tool** for uptake and VH to improve access: The number of pharmacies used for vaccinations will increase from 350 in 80 communities to 700 by mid-January, especially for booster shots (BC Ministry of Health, 2021ac, paras. 1–2); also, "Those 12 and older seeking to join the more than 88% of people in the province who have received both doses of a Covid-19 vaccine can receive their first or second dose of Pfizer and Moderna vaccines through a pharmacy" (BC Ministry of Health, 2021ac, para. 6); a message as **capacity tool** for VH applying normative pressure.
- Dec 17, 2021: A press release as a **capacity and symbolic tool** for VH, using positive and, arguably, presumptive messaging: "The case rate has nearly doubled over the past week…. [and] 135 cases of the Omicron variant… identified" (BC Ministry of Health, 2021ad, para. 5); "there are many things we can now do safely with reasonable and prudent measures like wearing a mask, staying home when sick, getting tested and, most importantly, *getting fully vaccinated* [emphasis added]" (para. 6).
- Dec 21, 2021: A press release said "756 cases of the Omicron variant of concern identified in B.C." (BC Ministry of Health, 2021ae, para. 8).
- Dec 23, 2021: Now in effect were increased restrictions until at least Jan 18, 2022, including the closure of gyms, fitness centres, dance studios, bars, and nightclubs (BC Ministry of Health, 2021af).
- Dec 24, 2021: A press release said "1,613 cases of the Omicron variant of concern confirmed in B.C." (BC Ministry of Health, 2021ag, para. 9).

- Jan 11, 2022: Repeated announcements as examples of **symbolic and capacity tools** for VH applying normative pressure: "88.8%... of eligible people five and older in B.C. have received their first dose… and 83.2%... their second dose" (BC Ministry of Health, 2022a, para. 1).
- Jan 21, 2022: A discussion in a news article about some **capacity tools** for uptake and VH meant to improve access, but not available in BC: With respect to 5- to 11-year-olds, "Newfoundland…. Saskatchewan, Quebec and Manitoba and most recently Ontario have… vaccine clinics at select schools [but] British Columbia has been a notable standout… [and] Alberta's health ministry said the province is not planning a school-based program for younger children after low uptake among 12- to 18-year-olds last year" (Bains, 2022, paras. 1–4).
- Jan 25, 2022: The announcement of extending the BC Vaccine Card until June 30, 2022, but they prospectively said it could be stopped sooner (BC Ministry of Health, 2022b), which indeed was the case, at it ended April 8, 2022 (Pescod et al., 2022, para. 2)
- Feb 4, 2022: The announcement of a **capacity tool** related to VH with potential to backfire: "While the police will respect lawful protests, they will also consider all the tools and options available to them to protect people, preserve public safety and investigate unlawful conduct" (Farnworth, 2022, para. 2), with respect to the truck convoy protests; and noting that "90% of eligible people in BC… [have had] their first vaccine shot" (para. 4), this message as a **capacity and symbolic tool** applying normative pressure.
- Feb 8, 2022: "Horgan, in his post-Throne Speech comments Tuesday… deferred the formal plan for B.C. to provincial health officer Bonnie Henry…. [and] B.C. will follow the advice of the health officials and not 'elected officials,'" unlike Alberta and Saskatchewan (Chiang, 2022, paras. 1–2).
- Feb 15, 2022: "90.4%... of eligible people five and older in B.C. have received their first dose of Covid-19 vaccine and 85.3%... their second" (BC Ministry of Health, 2022d, para. 1).
- Feb 16, 2022: In effect but announced in a press release on Feb 15, "While keeping the BC Vaccine Card, indoor masking requirements and Covid-19 safety plans in place, the provincial health officer will lift restrictions on personal gatherings, organized gatherings and events, nightclubs, bars and restaurants, exercise and fitness, and adult sports tournaments…. [and] capacity limits will return to normal" (BC Ministry of Health, 2022c, para. 2).

Alberta

- Nov 24, 2020: Announcement of an **incentive tool** for public safety, the first apparent notification of "fines of $1,000 per ticketed offence and up to $100,000 through the courts [for not following mandatory restrictions]" (Government of Alberta, 2020a, sec. Strong restrictions to slow the spread of Covid-19).
- Dec 10, 2020: The announcement of a **capacity tool** for uptake, the first vaccine delivery for "health-care workers, including staff at long-term care and supportive living facilities" (Government of Alberta, 2020b, sec. Vaccine distribution);

    - Other **capacity tools** for public safety aimed at informing people include these updates, others sites providing data, yet others where you could sign up for automatic update notification, and many news conferences (Government of Alberta, n.d.-b, n.d.-b, n.d.-f; YourAlberta, 2020).
- Dec 14, 2020: The announcement **capacity tools** of uptake for improving access, "ultra-cold freezers needed for the Pfizer vaccines are now installed at eight locations across Alberta" (Government of Alberta, 2020c, para. 3), and once approved, "the initial shipment [of Moderna] will be used to immunize residents at long-term care locations beginning with those at highest risk, including two First Nations seniors facilities" (Government of Alberta, 2020c, para. 7).
- Dec 28, 2020: A statement from Premier Kenney as a **symbolic tool** for uptake saying with positive messaging, "there is reason for hope. The first Albertans have already received the Covid-19 vaccine, and more are getting vaccinated every day" (Kenney, 2020, para. 3).
- Jan 5, 2021: The announcement of some **capacity tools** for uptake for improving access, "including… an online appointment booking tool, expanding vaccination clinics and appointment availability… actively recruiting additional staff to join the team of vaccinators…. [and] continuing care operators to vaccinate staff and residents on-site" (Government of Alberta, 2021a, para. 3).
- Jan 8, 2021: As a **capacity tool** for uptake to improve access, a directive that "will allow doctors, nurses and pharmacists who are not Alberta Health Services employees to deliver the vaccine" (Government of Alberta, 2021b, para. 2).
- Jan 13, 2021: As a **capacity tool** for uptake to improve access, Alberta is "piloting the use of temporary clinics to increase opportunities for eligible emergency department staff and physicians to get vaccinated"(Government of Alberta, 2021c, para. 2).
- Jan 19, 2021: A press release explaining that vaccination rate will slow because of delays from Pfizer (Shandro, 2021).
- Feb 10, 2021: An announcement saying "71% of residents of long-term care and designated supportive living have now received both doses of vaccine" (Hinshaw, 2021a, para. 3).
- Feb 11, 2021: As a **capacity tool** for uptake and VH, "Premier Jason Kenney said…[they] would pursue additional domestic production of vaccines after Manitoba made a deal to buy two million doses of a Calgary-made Covid-19 vaccine" (Dryden, 2021, para. 1).
- Feb 10, 2021: A press release and news conference announcing findings from fall 2020 survey: "46% [of Albertans] expressed loneliness, and more than half felt that their mental health had gotten worse" (Hinshaw, 2021a, para. 34), and encouraging people to use a variety of available supports for mental health and addictions.
- Feb 19, 2021: The announcement of a **capacity tool** for uptake to improve access, phase 2 of vaccination roll out was to start in April for any Albertans 50 and up (Government of Alberta, 2021d).
- Feb 24, 2021: The announcement of two **capacity tools** for uptake to improve access, "Alberta Health has been working with the Alberta Pharmacists' Association to develop a

program for pharmacists to provide vaccine in their communities…. [and] a list of participating pharmacies is available online at Alberta Blue Cross "(Government of Alberta, 2021e, para. 4).

- Mar 2, 2021: The announcement of some **capacity tools** for uptake to improve access; "There are three options to book your appointment for receiving the vaccine…. the AHS online booking tool, calling Health Link at 811, or contacting currently participating pharmacies in Edmonton, Calgary, or Red Deer" (Hinshaw, 2021b, paras. 28–29).
- Mar 2, 2021: The announcement of a **capacity tool** for uptake to improve access: "starting March 10, anyone who books a first dose of vaccine will have their second dose timeline extended up to four months…. [and] the 16-week timeline for second doses brings Alberta in line with British Columbia and other jurisdictions" (Government of Alberta, 2021f, paras. 1–3).
- Mar 4, 2021: As a **capacity tool** for uptake to improve access, "starting March 10, 58,500 AstraZeneca vaccine doses will also be available to Albertans aged 50 to 64" (Government of Alberta, 2021g, sec. AstraZeneca), its first announcement.
- Mar 16, 2021: The announcement of the expansion of **capacity** through community physicians, thus improving access (Government of Alberta, 2021h).
- Mar 18, 2021: The announcement of a **capacity tool** for uptake to improve access, expansion through additional pharmacies (Government of Alberta, 2021i).
- Mar 24, 2021: The announcement of a **capacity tool** to mitigate VH as a means of informing people about safety, a news conference discussing rare risks associated with AstraZeneca vaccine (Hinshaw, 2021d, paras. 32–34); "This condition is treatable and very rare. Globally, this outcome has been reported in about one in 1 million doses, mainly in individuals under the age of 55" (Hinshaw, 2021d, para. 36), but MacDonald et al. suggest this should be framed as 99.9999% safe (MacDonald et al., 2018, p. 221).
- Mar 25, 2021: Announced **capacity tools** for uptake and VH: "Since the start of the Covid-19 pandemic, the Alberta government has spent approximately $15.4 million on Covid-related advertising.... [including] the Covid Loves campaign aimed specifically at Albertans aged 40 years and younger" (Government of Alberta, 2021j, paras. 1–3); this campaign was conveyed how easily Covid is transmitted, and the "Love" in its name was not related to altruistic messaging.
- Mar 29, 2021: Announced a **capacity tool** for uptake improving access: A program to make "it easier for people who are physically unable to leave their homes to get vaccinated as quickly as possible…. [as] administered by AHS Public Health or Home Care, depending on the health zone" (Government of Alberta, 2021k, sec. Providing Covid-19 vaccine to homebound Albertans).
- Apr 6, 2021: Announcement of a **capacity tools** for uptake improving access: Rapid flow clinics, pharmacy walk-ins (Government of Alberta, 2021l), and the Edmonton EXPO Centre site (Government of Alberta, 2021m).

- Apr 8, 2021, saw first identified case of Delta in Alberta (Pullen, 2021, sec. Delta variant concerns).
- Apr 12, 2021: Announcement of a **capacity tool** for uptake improving access: Further increases, "with more than 1,300 pharmacies and 103 immunization sites now administering the vaccine" (Government of Alberta, 2021n, para. 1).
- Apr 14, 2021: Announcement of a **learning tool** for uptake, which became a **capacity tool** for uptake VH improving access: "Starting April 19, 10 physician clinics across the province will participate in a pilot project to administer Covid-19 vaccines to eligible patients. Based on the learnings from this pilot, the program will expand to include more clinics in May" (Government of Alberta, 2021o, para. 1).
- Apr 21, 2021: Passing of legislation, a **capacity tool** for uptake and VH improving access, paid-leave to get vaccinated (Copping, 2021a).
- Apr 26, 2021: As **capacity tool** for uptake improving access, meat-packers were identified as especially vulnerable, so on-site clinics were created (Government of Alberta, 2021p).
- May 4, 2021: Announcement of **incentive tools** for public safety, but later used for VH and for which the message was a **symbolic and capacity tool** using loss-framing: "Fines will double to $2,000 for Public Health Act violations [as soon as possible and a] protocol is now in place and will be used to coordinate a multi-agency response to repeat offenders" (Government of Alberta, 2021q, op. Strengthening enforcement).
- May 10, 2021: A **capacity tool** for VH improving access: "Starting May 10, Montana [which borders BC, AB, and SK] will be providing vaccines to truckers entering the state at a rest stop near Conrad at no cost" (Government of Alberta, 2021r, para. 6).
- May 13, 2021: An announcement as a **symbolic tool** for VH using positive messaging: "Please encourage everyone you know to be immunized. One of the most powerful ways to address vaccine hesitancy is hearing from someone you know and trust" (Hinshaw, 2021e, paras. 19–20).
- May 17, 2021: Announcement of **capacity tools** for public safety to inform people: "A new online map will break down vaccine coverage by local geographic area" (Government of Alberta, 2021s, para. 1), and this adds to extensive data in multiple formats which is "available at alberta.ca/stats/covid-19-alberta-statistics.htm"(Government of Alberta, n.d.-e, 2021s, para. 6).
- May 18, 2021: Alberta hits the 50% mark for first doses administered to those eligible, people 12 and up (Mertz, n.d., para. 1).
- Jun 1, 2021: An example of many messages as **symbolic tools** for VH informing of safety and efficacy, saying uptake reduces spread, mixing of vaccine for first and second does is safe, but you can choose whichever you want (Hinshaw, 2021f).
- Jun 2, 2021: Announcement of a targeted **capacity tool** for VH improving access: "Up to 5,000 Albertans can receive their first dose of Pfizer vaccine without an appointment on June 5 and June 6 at the Village Square Leisure Centre in Calgary…. [as this] aims to reduce

barriers, increase uptake, and address vaccine hesitancy in northeast Calgary" (Government of Alberta, 2021u, paras. 1–2).

- Jun 14 to 15, 2021: Announcements of **incentive tools** for VH as an inadvisable financial inducement, three $1 million vaccine lotteries, one for first dose and two for second doses, the latter of which are staggered, Aug 24 and Sep 23 (Government of Alberta, 2021v, 2021w).
- Jun 15, 2021: Messages as **symbolic tools** for VH informing about safety and efficacy: "Vaccines are safe, effective and they do save lives…. Canada and Alberta… have a robust surveillance system in place that monitors adverse events. To date… [only] 0.015% of all people who have been vaccinated… experienced an adverse event…. Most[ly] minor symptoms such as pain, headache, mild fevers, and severe adverse reactions have been exceedingly rare…. these vaccines will…. not only just protect you, but… your loved ones [too]" (Hinshaw, 2021g, paras. 18–24); those already experiencing VH might find these numbers dubiously low.
- Jun 16, 2021: Announcement of **incentive tools**, inadvisable inducements, for VH: 40 travel prizes added lottery program (Government of Alberta, 2021y).
- Jun 16, 2021: Announcement of a **capacity tool** for VH improving access: "Up to 1,200 Albertans can receive their first dose of mRNA vaccine over three days at the Muslim Association of Canada (MAC) Islamic Centre…. [which] aims to reduce barriers, increase uptake and address vaccine hesitancy among the community and anyone else seeking a first dose of vaccine" (Government of Alberta, 2021x).
- June 21, 2021: More inadvisable **incentive tools** for VH, a total of 635 various prizes related to the Calgary Stampede (Government of Alberta, 2021z).
- Jun 29, 2021: Announcement of another inadvisable **incentive tool** for VH, a "new draw [which] will give every Albertan with their first dose who registers for the Open for Summer Lottery by July 22 the chance to win season tickets for football, VIP hockey packages and rounds of golf in Kananaskis" (Government of Alberta, 2021aa, para. 2).
- Jun 29, 2021: Messages as **symbolic tools** for VH to inform about safety and efficacy: Heart inflammation after mRNA vaccination is very rare and "advisory bodies in both countries [the UK and Israel] have concluded that the benefit of immunization far outweighs the risks" (Hinshaw, 2021h, para. 39); since January, "more than 92% of hospitalizations… were also not vaccinated or within two weeks of their first dose" (para. 57), and "we are a province of people who protect each other, who support each other, and who rely on each other in a million different ways, big and small…. That means getting vaccinated as soon as you can" (paras. 82–84); altruistic messaging.
- Jun 30, 2021: The first appearance of something announced previously, a **symbolic tool** for VH using positive messaging, "extensive advertising to encourage Albertans to get vaccinated continues through the Sign Up, Show Up, Follow Up campaign" (Government of Alberta, 2021ab, para. 5); this is linked to an inadvisable **incentive tool** for VH, a debit card of "$100 if they got their first or second dose between September 3 and October 14"

(Government of Alberta, n.d.-h). This was a missed opportunity to solicit and amplify the voices of those who had already been vaccinated.

  - Jun 6, 2021: Ad featuring the "Sign Up, Show Up, Follow Up" slogan in a local magazine (Harder, 2021, p. 10), so it was likely implemented in May or June.
  - The $100 debut card program likely cost somewhere between $15 and $20 million to induce 150,00 to 200,000 Albertans to get vaccinated (CBC News, 2021c, paras. 1–4; White, 2021b, paras. 1–3).

- July 14, 2021: Delta starts spreading substantially (Government of Alberta, n.d.-d)
- July 14, 2021: The announcement of yet more inadvisable **incitive tools** for VH, at a point when "74.2 per cent of eligible Albertans have received their first dose of vaccine and 55.9 per cent are fully protected with two doses" (para. 4):
  - One special harvest hunting licence tag
  - One lifetime hunting licence
  - One lifetime sport fishing licence
  - One of five Alberta Parks camping experiences
  - 10 Canmore Nordic Centre season ski passes
  - 10 annual Kananaskis Conservation Passes (Government of Alberta, 2021ac).
- Jul 22, 2021: Alberta hit the 75% first-dose and 61.3% second-dose marks for those eligible, people 12 and up (CBC News, 2021b, para. 2).
- Jul 28, 2021: An announcement as a **symbolic tool** for VH to inform people of efficacy and used loss-framing, which conveyed the risks of being unvaccinated, the positive effects of climbing vaccination rates, and the need to increase this further (Hinshaw, 2021i, paras. 9–13).
- Aug 13, 2021: Announced were **capacity tools** for VH improving access: "Temporary clinics in schools for students… [and] teachers and staff…. starting on September 7…. Parent or guardian consent for students will be required through consent forms" (Government of Alberta, 2021ad, paras. 7–8); but minors might qualify as "mature minors," and hence consent on their own, if they can demonstrate the capacity to understand what they are potentially consenting to (Alberta College of Pharmacy, 2021)
- Aug 30, 2021, press release first announcing availability of 3rd doses, starting Sep 1 (Government of Alberta, 2021ae).
- Sep 1, 2021: A press release as a **symbolic tool** for VH using positive messaging: "Thanks to the millions of Albertans who chose to be vaccinated against Covid-19, these kids can look forward to sports, field trips, clubs and other activities that bring them joy…. The No. 1 thing we can do to protect schools against Covid-19 is to get vaccinated. If you have not received a Covid-19 vaccine yet—now is the time" (LaGrange, 2021, paras. 2–4).
- Sep 3, 2021: An announcement *as* a **symbolic tool** for VH informing of safety and efficacy, and *of* a change in an inadvisable **incentive tool:**

    1) "Currently, more than 80 per cent of Covid-19 cases in hospital are unvaccinated, including 91 per cent of patients in intensive care. Vaccines are

safe, effective, and a game-changer… [but] unvaccinated Albertans in particular are still at risk and are placing a heavy load on our health-care system" (Government of Alberta, 2021af, paras. 1–2).

2) "A one-time incentive of $100 is now available for all Albertans age 18 or older who receive a first or second dose of vaccine between Sept. 3 and Oct. 14" (Government of Alberta, 2021af, paras. 4–5).

- Sep 3, 2021: A **symbolic** remark for VH, arguably inadvisably admonishing people, Kenney said this is now "crisis of the unvaccinated" (Short, 2021).
- Sep 8, 2021, Delta peaks at 1337 cases that day (Government of Alberta, n.d.-d).
- Sep 9, 2021: A **symbolic** announcement for VH informing of safety saying vaccines are safe for pregnant women and do not cause fertility problems in women or men (Hinshaw, 2021j).
- Sep 10, 2021: "Of the Albertans eligible to receive the vaccine, 70.9% were fully vaccinated as of Friday, and 78.9% had received at least one dose" (Pearson, 2021, para. 19).
- Sep 14 and 15, 2021: Announcement of an **incentive tool** for VH with potential to backfire, the Restrictions Exemption Program (REP) on the 15th (CTV News Calgary, 2021), Alberta's unique nomenclature for a vaccine passport: "Albertans [can]… print a copy of their card-sized Covid-19 proof of vaccination…. Work is also underway to make proof of vaccination available through a QR code" (Government of Alberta, 2021ag, paras. 1–3).
- Sep 14, 2021: Effective that day, an **incentive tool** for VH with backfire potential: A new AHS policy required all employees to be fully immunized, except if they cannot "due to a medical reason, or for another protected ground under the Alberta Human Rights Act, [as they] will be reasonably accommodated" (Yiu, 2021, p. 3); but they must "undergo regular rapid antigen testing…. at the worker's expense" (pp. 3–4); this is an **incentive tool** for VH which might backfire.
    - This is ethically inconsistent: The requirement to pay is based on personal qualities for which as individual is not responsible and does not meet the ethical notion of reasonable accommodation, nor likely the legal definition.
- Sep 15, 2021: An announcement fleshing out the REP: Businesses "who choose [not] to implement a program checking patrons for government-issued proof of vaccination or a recent negative privately purchased Covid-19 test will [not] be able to have an exemption to [new] restrictions" (Government of Alberta, 2021ah, para. 2), unlike businesses who do adopt this program.
- Sep 16, 2021: Announcement of an **incentive tool** for VH: "If you are seeking a negative Covid test result to access a business or a service… you must… [pay, but] you can get vaccinated for free" (Hinshaw, 2021k, paras. 4–6); also noted here that some "businesses count as 'essential for daily living' [including] grocery stores, gas stations, and retail such as hardware stores" (Hinshaw, 2021k, paras. 30–31), to which the REP does not apply.
- Sep 16, 2021: Effective date of state of public health emergency, announced the day prior (Herring, 2021); the original state of emergency was declared on Mar 17, 2020, but ended June 15, 2020 (O'Malley, 2021, pp. 15–16).

- Sep 17, 2021, news article saying "Nearly three times as many Albertans were vaccinated… [on] Thursday, the day after the province announced its new vaccine passport program, compared to Wednesday" (Joannou, 2021, para. 1).
- Sep 17, 2021: Reached the 80% first-dose mark, presumably for those 12 and up, and "72% of eligible Albertans are now fully immunized with both doses" (Government of Alberta, 2021ai, para. 1)
- Sep 19, 2021: Announcement of an improvement to an **incentive tool** for VH, an alternative to QR codes, "access [to] a convenient card-sized proof of vaccination… without creating an online account" (Government of Alberta, 2021aj, para. 1).
- Sep 20, 2021: Effective this date, an **incentive tool** for VH with potential to backfire: "Vaccine-eligible individuals will be required to provide government-issued proof of immunization or a negative privately paid Covid-19 test from within the previous 72 hours to access a variety" of venues (Government of Alberta, 2021ai, para. 3).
- Sep 20, 2021: Effective this date, the "Restrictions Exemption Program… [which] allows eligible businesses, venues and services to be exempt from capacity and operating restrictions. If they do not implement this program to help protect patrons and prevent the spread of Covid-19, they are required to adhere to all public health measures now in effect" (Government of Alberta, 2021al, para. 1); note how this is described in reverse to how many other jurisdictions describe similar programs.
- Sep 20, 2021: Announcement of **capacity tools** for VH to improve access, a "mobile clinic [which] can provide up to 300 vaccinations per day" (Government of Alberta, 2021ak, para. 1), the schedule and locations for the week of Sep 20 to 25 on this website.
- "As of September 20, 2021, "Alberta has implemented a policy that permits certain businesses to ask customers for proof of vaccination, a negative Covid-19 test, or a valid medical exemption…. [and must] accommodate a person with a disability or another relevant protected ground, such as religious beliefs, that supports that the person cannot be vaccinated…. [but not] on the grounds of personal opinion or political beliefs" (Alberta Human Rights Commission, 2021, para. 1). The legal nuances are explained (Ward & Torrens, 2021), and this can be interpreted as both an **authority and incentive tool** directed both at public safety and VH, but Manitoba allows for political beliefs (The Manitoba Human Rights Commission, 2021, sec. 14).
- Sep 23, 2021: An announcement as a **symbolic and capacity tool** for VH using loss-framing but also informing people of efficacy: "Albertans who have not been fully vaccinated are about 15 times more likely than those with vaccine protection to end up in the hospital from Covid-19…. [and] about 40 times more likely to be admitted to the ICU…. Rumours on social media that vaccines are not working against the Delta variant… [are] categorically untrue" (Hinshaw, 2021l, paras. 24–27).
- Sep 28, 2021: CBC news reported that "Albertans are dying from Covid-19 at more than three times the average Canadian rate" (Kost, 2021b, sec. The province's Covid inaction).

- Sep 28, 2021: A news article explaining how Kenney dissembled about the efficacy of the $100 debit card and that the contemporary uptick in (first dose) vaccination rates is mostly because of the REP, and the difference is exponential; this is part of Kenney' narrative construction to appease his base (Small, 2021).
- Sep 28, 2021: 83.2% fist-dose and 74% second-dose marks (CBC News, 2021f).
- Sep 29, 2021: A press release noting an **incentive tool** for VH with backfire potential, AHS's vaccine mandate: Minister of Health, Jason Copping, responded to "a group of health-care workers, calling themselves Health Professionals United, [who] object to AHS' decision to require employees to be vaccinated against Covid-19…. [and the Minister said they] have a paramount obligation to protect patients" (Copping, 2021b, para. 1).
- Oct 5, 2021: An announcement as a **symbolic tool** for VH press release and news conference "strongly encouraging all school authorities to develop policies that require proof of vaccination or a negative Covid-19 test for teachers, staff, and anyone who enters a school…. [but not for students who cannot be denied] education due to immunization status" (Government of Alberta, 2021an, para. 12).
- Oct 6, 2021, end point of survey which stated on Sep 21, found over 70% of Albertans supported the REP or a vaccine passport program (Maroto, 2021, p. 9); but when asked if employees in each of several sectors should have vaccine mandates imposed on them, people's opinions differed by vaccination status: Typically, three quarters or more of the vaccinated thought so, compared to under one quarter of the unvaccinated (p. 12).
- Oct 7, 2021: An announcement as a **symbolic tool** for VH informing about safety: "I want to take a moment now to address two common misconceptions I have seen about Covid-19 treatments and vaccines. The first is about the drug Ivermectin…. [and] the second… is around the vaccine's safety for those who are pregnant' (Hinshaw, 2021m, paras. 22–30)
- Oct 12, 2021: An announcement as a **symbolic tool** for VH using positive messaging: "If you know someone who is hesitant to the get the shot, share your own experience and reasons for being vaccinated and encourage them to speak to a health-care professional. Each of these individual actions may seem small in the grand scheme of a global pandemic, but I assure you they are not. Added together, they are the difference between cases rising or falling…. having to cancel surgeries or [not, and] saving lives or losing more Albertans to this virus" (Hinshaw, 2021n, paras. 27–30).
- Oct 12, 2021: Effective this day was an **incentive tool** for VH: "Businesses and organizations can begin using the free AB Covid Records Verifier app to quickly and easily confirm their patrons' vaccination status…. [using a] QR code… [displaying] a person's name and date of birth, which businesses are asked to check against other identification…. [but] not store any personal information and does not require an internet connection to operate once downloaded. [The QR code] extremely hard to forge" (Government of Alberta, 2021ao, paras. 1–8); "Creating or using a false vaccination record is an offence subject to prosecution and/or fines of up to $100,000 for a first-time offence" (para. 12), an **incentive tool** for VH for which the message, a **symbolic and capacity tool**, used loss-framing.

- Oct 15, 2021: Effective this date, but announced on Sep 30, an **incentive tool** for VH with potential to backfire: "Alberta Public Service employees…. will be able to declare their vaccination status and submit proof of full vaccination…. [and] have until Nov. 30 to submit proof of full vaccination" (Government of Alberta, 2021am, para. 7).
- Oct 19, 2021: An announcement "strongly encouraging unvaccinated family and friends to not visit residents in person at this time. [Continuing care] facility operators are also able to implement additional rules, such as requiring proof of vaccination, as appropriate" (Government of Alberta, 2021ap, para. 3). This message was a **symbolic and capacity tool** using loss-framing, and the allowance of proof of vaccination is an **incentive tool** with potential to backfire for VH.
- Oct 25, 2021: Effective this date, an **incentive tool** for VH: "anyone aged 12 and older is required to provide…. proof of a complete vaccine series…. a negative privately paid Covid-19 test from within the previous 72 hours…. [or a] valid proof of medical exemption" (Government of Alberta, 2021aq, para. 8).
- Oct 27, 2021: A town hall as a **capacity tool** for VH informing about safety; the focus was "Covid-19 vaccines, pregnancy, and fertility" (Hinshaw, 2021o, para. 2).
- Nov 1, 2021: Alberta hits 87% first dose mark and 80% for second doses (Lethbridge News Now, 2021).
- Nov 1, 2021: A press release as a **symbolic tool** for VH using positive framing; Quoted were the Premier, the Minister of Health, and the Chief Medical Officer of Health, all encouraging vaccination, especially getting first doses (Government of Alberta, 2021ar).
- Nov 1, 2021: Reached the 875 first-dose and 80% second-dose marks for those 12 and up (Government of Alberta, 2021ar, para. 9).
- Nov 3, 2021: An announcement as a **symbolic tool** for VH: "Lately, we've seen an increase in the number of Albertans who say they've received the Covid-19 vaccine but their online record is missing…. [but we] cannot accept verbal history for proof" (Hinshaw, 2021c, paras. 4–7).
- Nov 9, 2021: Announcement of a **capacity tool** for VH, a new monoclonal antibody treatment for Covid-19, "teams began administering sotrovimab to patients in their homes who are aged 65 and older, are positive for Covid-19, unvaccinated, and who wish to have this treatment offered" (Hinshaw, 2021p, para. 39).
- Nov 12, 2021: Available as of this date, a **capacity tool** for VH, "a limited supply [of] the Janssen vaccine" for "Albertans 18 years and older" (Government of Alberta, 2021bi, para. 1).
    - An AHS "Dec. 17 memo… said it administered 80 per cent of its first shipment of 5,000 Janssen shots" (Tait, 2021, para. 2).
- Nov 15, 2021: Effective this date, a change to an **incentive tool** for VH, now only QR codes will be accepted [for the REP], except for those with "proof of vaccination from out-of-province, military, or First Nations health clinics" (Government of Alberta, 2021aq, paras. 10–12).

    - Only the following proof of vaccination will be accepted: “Alberta vaccine record with a QR code, Canadian Armed Forces vaccine record, First Nations immunization record, vaccine records issued by other provinces and territories, ArriveCan app for international travellers and valid international travel identity document, negative privately paid Covid-19 test from within the previous 72 hours, [or] valid proof of medical exemption” (Government of Alberta, 2021as, para. 2); absent is the pan-Canadian proof of vaccination.
- Nov 19, 2021, press release saying “Children under 12 will continue to have access to businesses and venues participating in the Restrictions Exemption Program, regardless of their vaccination status” despite vaccinations now available for those children 5 to 11 (Government of Alberta, 2021at, para. 6), an **authority tool**.
- Nov 23, 2021: The announcement of a **capacity tool** for uptake and VH, the Pediatric Pfizer “doses are being distributed to 120 Alberta Health Services vaccination clinics across the province and four pharmacies in communities where AHS clinics are not nearby…. [and] appointments for first doses will begin as early as Friday, Nov. 26” ,(Government of Alberta, 2021au, paras. 1–2); The Premier said, “Now that there is a safe, effective vaccine approved for use for these youngsters, and with doses arriving in the province, we can start booking appointments” (para. 3), a **symbolic tool** for VH informing of safety and efficacy.
- Nov 23, 2021: Announcement as a **symbolic tool** for VH inadvisably explaining risk in a negative way: “The risk of myocarditis following Moderna vaccine is higher than following Pfizer vaccine in those who are 12 to 29…. [and especially for] 12 to 17 year old males [which is one in 7000] with Pfizer [versus] one case per 2,000 second doses with Moderna” (Hinshaw, 2021q, paras. 5–6), so they recommend Pfizer for anyone between 12 and 29.
- Nov 24, 2021: Announcement of a **capacity tool** for VH supporting other tools, “the [45-minute] Restrictions Exemption Program Safety Training… [for] employees of Alberta-based businesses and organizations who are implementing the REP and other Covid-19 safety requirements” (Government of Alberta, 2021av, para. 1).
- Nov 29, 2021: Announcement of a **capacity tool** for VH: “Frequent, and targeted Covid-19 testing… only [for AHS] sites considered at significant risk of service disruptions resulting from staffing shortages due to unimmunized employees…. [thereby temporarily suspending the requirement of putting unvaccinated employees on an] unpaid leave of absence” (Government of Alberta, 2021aw, paras. 1–2), for employees to whom exemptions on medical or protected human rights grounds do not apply, but they had to pay themselves, just like those with medical or protect grounds exemptions had to, an ethical conflict created by the Alberta Government.
- Nov 29, 2021, press release and news conference: first substantial discussion about Omicron, but in the week prior, “99.8% of all Alberta cases have been the Delta variant” (Hinshaw, 2021r, para. 15).

- Nov 30, 2021, press release and news conference: "I am reporting that we have now one confirmed case of the Omicron variant in Alberta…. in a returning traveller from Nigeria and the Netherlands" (Hinshaw, 2021s).
- Nov 30, 2021: A **capacity tool** for VH building communications capacity, a town hall about pediatric vaccines (Hinshaw, 2021t, paras. 2–4).
- Dec 1, 2021: Announcement of a **capacity tool** for uptake, the wide expansion of booster doses; As a **symbolic tool** for VH, an announcement about "reports that some parents are withdrawing their consent for all vaccines at schools because they're worried that their child may receive a Covid-19 vaccine without their knowledge…. [but] no child will receive any vaccine in school without their parent or guardian's consent and knowledge…. It is critical that children continue to receive their standard immunizations to help protect them from diseases like measles, Hepatitis B, human papillomavirus, diphtheria, tetanus and pertussis" (Hinshaw, 2021t, paras. 33–36).
- Dec 7, 2021: Announcement that "the total Omicron case count for Alberta remains at 11" (Hinshaw, 2021u, para. 9).
- Dec 14, 2021: An announcement of many examples of **symbolic and capacity tools** for VH using normative pressure, "85 per cent of eligible Albertans aged 12 and older have received both of their recommended doses of vaccine…. [and] 89.4 per cent… at least one dose" (Government of Alberta, 2021ax, paras. 1–2).
- Dec 15, 2021, news article: As of this date, "251… medical accommodations [were requested, and]…. 40 per cent of those have been granted…. AHS has also received 883 religious accommodation requests, but only a few of those have been granted" (Valleau, 2021, paras. 20–26).
- Dec 21, 2021: Effective and announced this date, a **capacity tool** for uptake and VH improving access, "starting immediately, all Albertans aged 18 and older who received their second Covid-19 vaccine at least five months ago can now book a third dose" (Government of Alberta, 2021ay, para. 1), reducing it from the 6-month minimum, in response to Omicron.
- Dec 22, 2021: Announcement of the rapid rise of cases with Omicron now dominant (Hinshaw, 2021v).
- Dec 23, 2021: Effective and announced this date, a change to an **incentive tool** for VH, the temporary suspension of vaccine mandate for HCPs is extended to all unvaccinated AHS employees, if they are willing to submit to regular testing "at their expense" (Government of Alberta, 2021ba, para. 3); that is, "AHS has been ordered by the Kenney government to [temporarily] drop its policy of requiring health care workers to be vaccinated" (Climenhaga, 2021, para. 1).
- Dec 24, 2021: ED and announced in press release and news conference on Dec 21, increased restrictions due to Omicron (Government of Alberta, 2021az).
- Dec 28, 2021 (roughly): Arguably an **incentive tool** for VH with backfire potential, but also an **authority tool** for public safety, "isolation time for fully vaccinated Albertans who tested

positive for Covid-19 was reduced from 10 days down to five as long as their symptoms have resolved by that point" (Hinshaw, 2022a, para. 40).

- Jan 5, 2022: An announcement as a **symbolic tool** for VH informing of safety but with statistics inadvisably communicated in the negative: "A recent publication from the US–CDC affirmed the safety of vaccine in 5- to 11-year-olds, looking at 8.7 million doses of vaccine and identifying any significant adverse events such as fever and severe vomiting happening after only 0.001% of all doses. As parents, our first priority is always the safety and wellbeing of our children, and I understand the need to make the best, data-informed decision for them. If you have questions about the vaccine or would like more information, please reach out to a medical professional to get answers. You can talk to your family doctor or pediatrician, call 811 or listen to the pediatric vaccine townhall recording" (Hinshaw, 2022b, paras. 15–17).
- Jan 7, 2022, in response to the Federal Health Minister, "Alberta Premier Jason Kenney said his government will not make [population-wide] vaccines mandatory"(Zimonjic, 2022, para. 18), avoiding an **authority tool** for VH with significant backfire potential.
- Jan 10, 2022: Press release and news conference asking people to assume they have Omicron if they have any cold or flu-like symptoms, and not to seek PCR testing if your symptoms are only mild, as cases numbers are overwhelming testing capacities (Hinshaw, 2022c).
- Jan 13, 2022: News conference and press release saying "Our guidance on masks for the general public is the reasonable standard for anyone given the average risk in day-to-day life, and does not meant to address the highest risk environments that certain individuals may encounter in specific workplaces" (Hinshaw, 2022d, para. 51)
- Jan 14, 2022: As a **capacity tool** for uptake and VH improving access, a press release encouraging people to get boosters (a **symbolic tool**), as eligibility and access are broad now (Government of Alberta, 2022b).
- Jan 18, 2022: Announcement a **capacity tool** for uptake and VH improving access, fourth doses for people with specified immunocompromising conditions were made available (Government of Alberta, 2022f).
- Jan 18, 2022: Discussion of problems with a **capacity tool** for VH and uptake meant to improve access, a news article sating Alberta "lagged behind other provinces in its campaign to administer first and second doses of vaccinations last year…. [and] research… found [that currently] the number one barrier for people to get their booster is the online booking system" (Short, 2022, paras. 10–14).
- Jan 20, 2022: Politically motivated announcements where new Covid messaging is apparent: "45 per cent of non-ICU Omicron hospitalizations are *incidental* [emphasis added]" (Government of Alberta, 2022c, para. 2).
- Jan 20, 2022: Announcements encouraging people in close contact with infants, who are at higher risk, to get vaccinated (altruistic messaging), depicting the dramatic risk differences between the vaccinated and unvaccinated (informing of efficacy and appropriately using loss-framing), and announcing a newly approved prescription drug, Paxlovid, available soon

(Hinshaw, 2022e). These messages are **symbolic and capacity tools** and the deployment of the new drug a **capacity tool**, all for VH.

- Jan 21, 2022: A news article noting the lack of a **capacity tool** for uptake and VH, which would improve access: As of this date, Alberta has no in school vaccination programs for 5- to 11-year-olds, "after low uptake among 12- to 18-year-olds last year" (Bains, 2022, para. 4).
- Jan 21, 2022, News article noting the creation of a **capacity tool** for VH likely with potential to build communications capacity: As of this date, Alberta has "a new vaccine hesitancy advisory committee" (Babych, 2022, para. 5; Bains, 2022, para. 18).
- Jan 26, 2022: Announcements as **symbolic and capacity tools** for VH informing of efficacy, appropriately using loss-framing, and with altruistic messaging, which said, "children in households where no adults have been vaccinated have a one and a half times greater chance of being hospitalized with Covid-19, compared to children in households where all adults are fully vaccinated. This data supports the fact that vaccination remains the best way to prevent severe outcomes such as hospitalization due to Covid-19, not only for ourselves, but also for ours households [*sic*]" (Hinshaw, 2022f, paras. 44–45); also discussed was the issue of how "some may wonder if they have had Covid recently whether they should still get their booster dose now…. [and recommending they] wait a few months before getting a booster" (paras 47–48).
- Feb 4, 2022: Announcements as **symbolic tools** for VH informing of efficacy and using altruistic messaging: "The best way to combat hesitancy is with accurate information…. [and] regardless of… previous Covid-19 infection, getting fully vaccinated with all the doses we are eligible for is still the best way to make sure that we and those around us are protected against severe illness and outcomes" (Hinshaw, 2022g, paras. 22–27); "Starting today, we recommend that these individuals stay home for 10 days after exposure, instead of the current recommendation of 14 days…. [which] aligns with data showing the incubation period for Omicron is shorter than previous variants" (paras. 14–16); and mention of "moving to an endemic approach to Covid" (para. 34).
- Feb 8, 2022: Effective and announced this date, the removal of an **incentive tool** for VH with backfire potential, "the removal of the Restrictions Exemption Program and capacity limits on venues under 500 capacity" (Government of Alberta, 2022d, para. 2).
- Feb 11, 2022: A press release as a **symbolic tool** for both uptake and VH using positive messaging and normative pressure: As of Feb 10, first dose rate hit 90% and second dose 86.3% for those 12 years an older, not those five and up as eligible, and highlighted was the importance of boosters (Government of Alberta, 2022e).
- Feb 15, 2022: Effective and announced this date were **two capacity tools** for VH: "Anyone 55 or older who is unvaccinated or has only had a single dose of vaccine would be eligible for early treatment with either Paxlovid or Sotrovimab" (Hinshaw, 2022i, para. 2).
- Feb 16, 2022: Effective this date, an **authority tool** both for public safety and fiscal prudence, "fully immunized workers in continuing care will be able to resume working at

multiple facilities…. to help facilities avoid staffing challenges" (Hinshaw, 2022h, paras. 10–12); Also, the term "primary series" replaced "fully vaccinated" and for immunocompromised children this means three doses, but otherwise means two (para. 27).
- No date: A **capacity tool** for VH educating HCPs, a VH toolkit for HCPs developed by the Alberta Medical Association (Alberta Medical Association, 2021)

Saskatchewan

- Dec 9, 2020: Announcement of a **capacity tool** for uptake improving access, vaccine delivery plan explains a targeted approach to start, health care workers, elderly residents in care homes, seniors over 80 and residents in northern remote communities. "Distribution in Phase 2 will occur throughout the province at public health clinics and other vaccination delivery sites across the province" and this includes a communications plan (Government of Saskatchewan, 2020a).
- Dec 9, 2020: An example of a **capacity tool**, regularly updated Covid data, for VH and uptake meant to inform the public generally; the matter of safety and efficacy information about vaccines emerges only later, since vaccines were only just coming onboard at this time (Saskatchewan Ministry of Health, 2020a).
- Dec 10, 2020: Announcement that "the new maximum fines will be $7,500 for individuals and $100,000 for corporations, up from $2,000 and $10,000 respectively" (Vittorelli, 2020, para. 1), but at some point, this was later changed again: "Businesses that violate public health orders can be fined up to $10,000 and individuals can be fined $2,000, plus a 40 per cent victim surcharge, (CBC News, 2022a, para. 6)
- Dec 14, 2020: Announcement of **authority tools** for public safety, the extension of current public health orders for Covid restrictions, some of which increased soon after (Saskatchewan Ministry of Health, 2020b).
- Dec 15, 2020: Effective date for first vaccinations, front-line HCPs in "ICUs, Emergency Departments and Covid Units at Regina General and Pasqua Hospitals and staff at testing and assessment centres" (Government of Saskatchewan, 2020b, para. 4); these were done on-site.
- Dec 17, 2020: Announcement of expansion to residents of long-term care and additional HCPs (Saskatchewan Ministry of Health, 2020c).
- Jan 21, 2021: Announcement that "administration of the first dose… [will be] completed for long term care homes" across the Province by the day (Saskatchewan Ministry of Health, 2021c, para. 4).
- Feb 9, 2021: A **capacity tool** for uptake to improve access, discussed in a news article, the CEO of the Saskatchewan Health Authority noted an approach that would rely on non-HCPs to aid in mass vaccination, so that HCPs can administer doses; it appears that Saskatchewan did not expand the number of professionals that could do this, and merely relied on the pre-existing capacity available through pharmacies.

- Feb 9 and 18, 2021: Announcements of **capacity tools** for VU to improve access, mass immunization clinics, tentatively set for April, at this point (Saskatchewan Ministry of Health, 2021d, 2021e).
- Feb 19, 2021: **Capacity tools** for VH to educate HCPs, a web-base course for HCPs to address VH (Berry, 2021), and two others (Canadian Pediatric Society, n.d.-b, n.d.-a), which were available by at least April of 2021 (Saskatchewan College of Pharmacy Professionals, 2021).
- Feb 22, 2021: Announcement of a **capacity tool** for uptake to improve access, inclusion of pharmacies in immunization (Saskatchewan Ministry of Health, 2021f).
- Mar 9, 2021: Announcement that Saskatchewan extended the period to the second dose to 16 weeks (Saskatchewan Ministry of Health, 2021g).
- Mar 12, 2021: Announcement of appearance of new variants of concern in Saskatchewan (Saskatchewan Ministry of Health, 2021h); the announcement itself can be interpreted as a **symbolic tool** for VH, as in, using fear, but at this point, it was probably meant mealy to inform the public.
- Mar 18, 2021: Effective date for first use of mobile clinics (Saskatchewan Ministry of Health, 2021i, paras. 5–6)
- Mar 18, 2021: Effective this date is phase 2, including two **capacity tools** for uptake improving access, online and telephone appointment booking systems (Saskatchewan Ministry of Health, 2021j).
- Mar 18, 2021: Announcement of a **capacity tool** for uptake and VH improving access, special leave "to allow for paid time off from work for an employee to get vaccinated for Covid-19…. [for up] to three consecutive hours" (Saskatchewan Ministry of Health, 2021j, paras. 8–9); in effect Mar 18 (CBC News, 2022a, para. 1)
- Mar 23, 2021: Announcement of **authority tools** for public safety, arguably with potential to backfire, further restrictions. These do not yet involve differentiating between the vaccinated and unvaccinated (Saskatchewan Ministry of Health, 2021k).
- Mar 26, 2021: Announcement of **capacity tools** for uptake and VH that improve access, "First Nations families in Saskatchewan will benefit from a [coordinated effort between]… the Government of Saskatchewan and Indigenous Service Canada to… [get] vaccines to on-reserve communities" (Saskatchewan Ministry of Health, 2021l, para. 1).
- Mar 29, 2021: Announcement of a **symbolic tool** for VH using altruistic messaging, the "Stick It To Covid" campaign (Government of Saskatchewan, n.d.-h; Saskatchewan Ministry of Health, 2021m); the TV and YouTube ads use emotional appeals
- April 12, 2021: Announcement of **capacity tools** for uptake improving access, mobile units to immunize first responders (Saskatchewan Ministry of Health, 2021n).
- April 22, 2021: Announcement easing restrictions for visitor of long-term care homes where at least 90% of residents were vaccinated, but visitors' vaccine status was irrelevant (Saskatchewan Ministry of Health, 2021o); arguably the **first incentive tool** for VH with potential to backfire.

- May 4, 2021: Announcement of a set of **incentive tools** for VH, "the Re-Opening Roadmap [which] also provides Saskatchewan people with an incentive to continue following public health measures and a clear reason to get vaccinated" (Executive Council and Office of the Premier & Saskatchewan Ministry of Health, 2021, para. 1); this includes "the cautious easing of public health measures across the province" (para. 9); "The province's aggressive vaccination program will continue at full pace until all Saskatchewan residents have the opportunity to be fully vaccinated" (para. 13): This is presumptive but not interpersonal.
- May 6, 2021: Announcement of a **capacity tool** to address uptake and VH improving access, for second doses, "the type of vaccine available at each location will be advertised to ensure that you are receiving the same vaccine brand" (Saskatchewan Ministry of Health, 2021p, para. 9), unlike other jurisdictions.
- May 7, 2021: Announcement of further relaxation of restrictions specific to Regina with no mention of differences as per vaccination status (Saskatchewan Ministry of Health, 2021q, sec. Update to Regina Public Health Order), an **authority tool** for public safety.
- May 18, 2021: Announcement of **capacity tools** for VH improving access, the start of vaccinations at school, which Health Minister, Paul Merriman, said is convenient for parents (Saskatchewan Ministry of Health, 2021r, para. 2).
- May 17, 2021, Angus Reid poll show residents of Saskatchewan tied with Alberta for highest percentage of people who are VH, about one in five (Angus Reid Institute, 2021a; Benning & Piller, 2021, para. 12).
- May 24, 2021: Announcement that step two of re-opening, a further relaxation of restrictions, began June 20 (Saskatchewan Ministry of Health, 2021s), still no differentiation as per vaccination status.
- June 1, 2021: Announcement for further potential removals of restrictions (Saskatchewan Ministry of Health, 2021a).
- June 1, 2021: Announcement that Saskatchewan will follow NACI guidance and allow mixing of vaccines brands for second doses (CTV News Regina, 2021), but brands were advertised (Bell, 2021, para. 11), allowing people to choose.
- June 2, 2021: Saskatchewan began reporting vaccination rates based on all those eligible, people 12 and up, not just adults, as they did previously (Saskatchewan Ministry of Health, 2021t, sec. Vaccines Reported, 2021u, sec. Vaccines Reported).
- June 10, 2021: Announcement of a **capacity tool** partly to address VH (and part of layered strategy), the deployment of rapid antigen tests as part of a "'multi-layered approach that we have added to our pandemic response along with vaccination,' SHA Testing Chief Carrie Dornstauder, said" (Saskatchewan Ministry of Health, 2021b, para. 5).
- June 15, 2021: Announcement of an **incentive tool** for VH with modest potential to backfire, people who are fully vaccinated must no longer quarantine when named as a close contact of a Covid-19 positive person, if they are asymptomatic (Saskatchewan Ministry of Health, 2021w, para. 1); the first apparent differentiation by vaccination status.

- June 15, 2021: Announcement of **capacity tools** for uptake an VH to improve access, "pop-up clinics in locations around the province to connect with people where they work, live and play" (Saskatchewan Ministry of Health, 2021v, paras. 1–2), with extensive details of times and places.
- June 15, 2021: Announcement that Saskatchewan would not use any lotteries (Global News, 2021), but by Sep 3, Métis Nation-Saskatchewan offered 191 prizes to Métis residents who were fully vaccinated, with deadlines between mid-September and late November, 2021 (Kliem, 2021).
- June 29, 2021: Announcement that stage three, the removal of nearly all restrictions, to happen July 11, 2021 (Saskatchewan Ministry of Health, 2021x).
- June 29, 2021: A CBC News article saying "Saskatchewan will not require proof of vaccination" (Djuric, 2021, para. 2), i.e., no vaccine passport, but vaccination records, which had been available previously for years, were made into a more user-friendly printable version, and were also made available on mobile devices, later adding QR codes (Giles, 2021)
- July 7, 2021: Announcement explaining upcoming changes that "masking in indoor spaces will end but [still optional]…. [and] unvaccinated or partially vaccinated people should still consider masking" (Saskatchewan Ministry of Health, 2021y, para. 3), and in long term care facilities, "visitors and families are [only] strongly encouraged to continue to wear masks during… especially if not fully vaccinated" (para. 9); This message is a **symbolic tool** for public safety.
- July 7, 2021: The first apparent use of new branding, "Living with Covid-19" (Saskatchewan Ministry of Health, 2021y).
- July 11, 2021: State of emergency ended (Djuric, 2021).
- July 26, 2021: Announcement of **capacity tools** for VH adapting and improving access, a shift "from mass vaccination to focused outreach, targeting those in the province who are under and unvaccinated" (Saskatchewan Ministry of Health, 2021aa, para. 1).
- July 26, 2021: A press release which acknowledged that Delta "is circulating in Saskatchewan now" (Saskatchewan Ministry of Health, 2021aa, para. 11).
- July 29, 2021: They reached the 75% first-dose and 63% second-dose marks for those 12 and up (Saskatchewan Ministry of Health, 2021ab, para. 3).
- Aug 3, 2021: Data, like vaccination rates, began being reported weekly instead of daily (Saskatchewan Ministry of Health, 2021ac).
- Aug 24, 2021: A press release saying "the Government of Saskatchewan is permitting the administration of additional doses of Covid-19 vaccinations for residents who may require them for international travel…. Proof of intent to travel will not be required" (Saskatchewan Ministry of Health, 2021ad, paras. 4–8); this is a **capacity tool** for uptake to improve access.
- Aug 30, 2021: Announcement of a **capacity tool** for uptake to improve access, "vaccination 'boosters'… [for specific immunocompromised groups] starting (Saskatchewan Ministry of Health, 2021af)Tuesday, September 7" (Saskatchewan Ministry of Health, 2021ae, para. 6)

- August 30, 2021: Announcement that "front-line health care workers… [will need] proof of vaccination or negative test in the workplace. If… not… they will be required to undertake regular Covid-19 testing" (Saskatchewan Ministry of Health, 2021ae, para. 11). "Effective October 1, 2021, a proof of vaccination or negative test policy will be implemented for all Government of Saskatchewan ministry, crown and agency employees. Employees of all Government of Saskatchewan ministries, crowns and agencies will be required to be fully vaccinated by October 1. Employees that do not provide proof of vaccination will be required to provide proof of a negative test result on a consistent basis"(Government of Saskatchewan, n.d.-i, sec. 4): The vaccine **mandates are authority tools** and the **announcement a symbolic tool** for VH with potential to backfire.
- Aug 31, 2021: A press release about overdose death prevention, but nothing connecting this to Covid (Saskatchewan Ministry of Health, 2021ag)
- Aug 31, 2021: Announcement of **capacity tools** for VH to improve access, "pop-up and walk-in vaccination clinics throughout the province, targeting under- and unvaccinated communities. Details on clinic locations and times is listed on the SHA website" (Saskatchewan Ministry of Health, 2021af).
- Aug 31, 2021: Last use of webpages titled "Covid-19 Update For The Week Of" which provided a consistent place to find relevant data (Saskatchewan Ministry of Health, 2021af); now such data was typically found on "Stick It TO Covid" sites (Saskatchewan Ministry of Health, 2021al), but this was somewhat inconsistent and was sometimes found elsewhere.
- Sep 7, 2021: An announcement as a **symbolic and capacity tool** for VH appropriately using loss-framing: "Nearly 84 per cent of all new cases and hospitalizations in Saskatchewan in August were unvaccinated or partially vaccinated people" (Saskatchewan Ministry of Health, 2021ah, para. 1).
- Sep 10, 2021: Announcement of an **authority tool** for VH with potential to backfire, "while the SHA has previously announced a proof of vaccination policy for certain frontline health care workers, this policy will now apply to all SHA employees" (Saskatchewan Ministry of Health, 2021ai, para. 16).
- Sep 16, 2021: Proof of vaccination, i.e., a vaccine passport announced by province and allows for proof of negative test (Saskatchewan Ministry of Health, 2021aj, para. 1), and mandate for "all Government of Saskatchewan ministry, crown and agency employees (Saskatchewan Ministry of Health, 2021aj, sec. Proof of Vaccination or Negative Test Requirements Effective October 1); changing what they had said only weeks before; it doubled the rate of first does uptake for a period (Dove, 2021, paras. 2–3); this was called an "interim measure" at the time (Meridian Source, 2021).
- Sep 17, 2021: ED, interim masking policy until vaccine passport goes into effect Oct 1 (Saskatchewan Ministry of Health, 2021aj, para. 1).
- Sep 20, 2021: Announcement of **capacity tools to support an incentive tool** for VH with potential to backfire, new ways to verify vaccination status, including mobile phone QR codes, printed QR codes, wallet cards received at time of immunization, and the

Saskatchewan Vaccine Wallet and Vaccine Verifier apps (Saskatchewan Ministry of Health, 2021ak); the announcement itself is a **symbolic tool** for VH.

- Sep 21, 2021: A press release as a **symbolic and capacity tool** for VH combining loss-framing and altruistic messaging, which explained how "98 per cent of school-aged Covid cases lived in unimmunized or partly immunized households…. [and] children with underlying medical conditions and infants less than 12 months may be at elevated risk to Covid-19 illnesses, similar to the 80+ age group" (Saskatchewan Ministry of Health, 2021al, paras. 3–4).
- Sep 21, 2021: An announcement of **incentive tools** for VH with potential to backfire saying "effective October 1, 2021, will be the provincial requirement for proof of vaccination or negative test for public access to a list of establishments, businesses and event venues, as well as for all Government of Saskatchewan ministry, crown and agency employees" (Saskatchewan Ministry of Health, 2021al, para. 6).
- Sep 24, 2021: A press release which said "Saskatchewan has seen a significant increase in vaccinations since the announcement of the proof of vaccination or negative test requirement.... [and] first doses more than doubled in the past week compared to the week before" (Saskatchewan Ministry of Health, 2021am, para. 2); this was also noted in a "paper from the University of Saskatchewan's Social Contours and Covid-19 research team" (Dove, 2021, para. 2); "The vast majority of residents hospitalized for Covid-19 in Saskatchewan today are unvaccinated" (para. 4); this message is a **symbolic and capacity tool** for VH appropriately using loss-framing.
- Sep 24, 2021: They hit the 80% first-dose and 71% second-dose marks for those 12 and up (Saskatchewan Ministry of Health, 2021am).
- Sep 28, 2021: Announcement of an **incentive tools** for VH with potential to backfire: "Employers outside the public service can voluntarily opt in" to the vaccine passport (Saskatchewan Ministry of Health, 2021an, para. 3), and "the cost for all proof of negative test results for asymptomatic testing will be the responsibility of the individual" (para. 4) but "self-administered take-home rapid antigen test will not be accepted" (paras. 6–10).
- Sep 29, 2021: Verifier apps launched (Saskatchewan Ministry of Health, 2021ao).
- Sep 29, 2021: CBC News article noting **capacity tools** for VH to create tailored and culturally adapted messages: The province spent "more than $1.6 million to date on online and print media content, as well as advertising in Cree, Dene and Michif languages…. [and] sent letters to all households that had one or more residents who were eligible to receive a vaccination, but who had not yet been immunized" (Ghania, 2021, paras. 21–23); these letters fall under the rubric of vaccine schedules, which are close related to tailored messages.
- Oct 1, 2021: Announced at "interim" measurses on Sep 16 , An **incentive tools** for VH with backfire potential: "Effective Friday, October 1, 2021, proof of Covid-19 vaccination or a negative test result will be required in Saskatchewan for public access to a range of businesses, event venues, as well as for all Government of Saskatchewan ministry, crown and

agency employees" (Saskatchewan Ministry of Health, 2021ap, para. 1), with an extensive list of venue types.

- Oct 15, 2021: An announcement as a **symbolic tool** for VH noting the further expansion of **incentive tools** for VH with backfire potential: In effect Oct 18, three more venue types were added, including "liquor manufacturers conducting retail liquor sales" (Saskatchewan Ministry of Health, 2021aq, para. 2); Also, another **capacity tool** for VH to support that **incentive tool**, additional "resources and personnel to support Public Health Inspectors (PHIs)…. to re-establish a team of trained individuals to assist in awareness, education, and compliance of the current public health order" (paras. 14–15).
- Oct 15, 2021: Announcement of a **capacity tool** to address the *consequences* of VH: The Saskatchewan Health Authority expanded the delivery of rapid antigen tests for "the general public, including First Nations communities…. [to] help prevent asymptomatic transmission" (Saskatchewan Ministry of Health, 2021ar, paras. 1–2).
- Oct 19, 2021: Announcement of **capacity tools** for VH to improve access, "residents can receive both flu and Covid-19 vaccinations at the same time and location…. using the same online flu shot appointment tool… or by telephone" (Saskatchewan Ministry of Health, 2021as, para. 15).
- Oct 25, 2021: Announcement of a **capacity tool** for VH, "monoclonal antibodies will be available to treat clinically appropriate patients who have contracted Covid-19, with the intent of preventing unvaccinated or severely immunosuppressed residents who have contracted Covid-19 from requiring hospitalization" (Saskatchewan Ministry of Health, 2021at).
- Oct 26, 2021: Announcement of the expansion of vaccine availability through physician offices and of two new related physician service codes, one "to compensate physicians for counselling unvaccinated patients in their office while they are there for another service," and another for vaccination (Saskatchewan Ministry of Health, 2021av, paras. 1–3); These are **capacity tools** for VH improving access and leveraging trust relationships with HCPs. Also noted was the potential for fines, and the week of October 17, "two individual fines of $2,800 for failure to mask and one summary offense ticket... [of] $14,000 for failure to screen for proof of vaccination or negative test" were issued (Saskatchewan Ministry of Health, 2021av, paras. 8–9); this message is a **symbolic and capacity tool** using loss-framing**,** and the fines are **incentive tools** for VH.
- Oct 26, 2021: Announcement of **capacity tools** for uptake and VH improving access, soon to be available vaccinations for 5- to 11- year-olds "at a wide variety of locations including participating pharmacies, SHA walk-in clinics, mobile clinics, at schools and at venues with easy community access near schools" (Saskatchewan Ministry of Health, 2021au, para. 4).
- Nov 2, 2021, press release announcing upcoming availability and "initial supply of 2,500 single dose Janssen (Johnson & Johnson) vaccines" (Saskatchewan Ministry of Health, 2021aw, para. 9); deployment of these is a **capacity tool** for VH to improve access to what they hoped would be more desirable for some people; Health Canada's authorization creates

this **capacity tool** (Saskatchewan Ministry of Health, 2021aw, para. 11); announcement of more fines given (Saskatchewan Ministry of Health, 2021aw, para. 12); this messaging is a **symbolic and capacity tool** for VH using loss-framing, and the fines are **incentive tools**.
    - A Dec 28, 2021, news article saying "Saskatchewan… has delivered about 72 per cent of its original supply" Janssen shipment (Tait, 2021, para. 2).
- Nov 8, 2021: An announcement as a **symbolic tool** for VH using altruistic messaging: Vaccinations "will protect children who cannot currently be vaccinated and those at highest risk for serious illness, as well as preserve health care capacity with planning for service resumption underway" (Saskatchewan Ministry of Health, 2021ax, para. 4); and a message as a **symbolic tool** for VH to leverage trust relationships with HCPs and inform of safety and efficacy: "If you are a parent and unsure about the safety of the Covid-19 vaccine, please contact your family physician or primary health care provider…. they are safe, effective and provide better protection against the most serious health effects of Covid-19 than the immune response generated by contracting Covid-19" (para. 9).
- Nov 9, 2021: An announcement as a **capacity and symbolic tool** for VH using loss-framing and explaining how risks of hospitalization, ICU admissions, and death are much higher for the unvaccinated versus the fully vaccinated (Saskatchewan Ministry of Health, 2021ay).
- Nov 11, 2021: A news article featuring a positive message as a **symbolic tool** for VH, "Saskatchewan's health minister says vaccine uptake will be the key to avoiding a fifth wave" (Solomon, 2021, para. 9).
- Nov 17, 2021: Effective this date, a **capacity tool** for VH improving access, the Janssen vaccine became available "on a walk-in basis… only…. [and] appointments cannot be booked online" (Saskatchewan Ministry of Health, 2021az, para. 4).
- In a Nov 18, 2021, news conference, "chief medical health officer, Dr. Saqib Shahab, gave a shout out to a high vaccination uptake in Melville [and said] 'there are many communities that are below 50 per cent which is very concerning'" (Piller, 2021, paras. 4–7); this message is a **symbolic tool** for VH, but is this normative, is it negative, or neither.
- Nov 23, 2021: Announcement of a **capacity tool** for VH improving access, "group appointments for siblings or families can be made…. [and] parents can be immunized at the same time as their children" (Saskatchewan Ministry of Health, 2021ba, para. 3).
- Nov 25, 2021: Discussion of a **capacity tool** for VH to improve access in a news article explaining how neighbourhood VU differentiation implies a socioeconomic dimension to VH, as claimed by non-profit social service groups, and the Janssen vaccine is partly meant to target people in these populations; "'Our strategy has moved to a more micro strategy, where we are really looking at community by 'community, very small geographies'…. SHA vaccine chief Sheila Anderson said"(Vescera, 2021, para. 10).
- Nov 26, 2021: Discussion of a **capacity tool** for VH to improve access in a CTV News article saying "the province is working on a 'micro-targeting' strategy, to attempt to raise [the relatively low] vaccination rates in specific communities [with higher infection rates]" (Ellis, 2021, para. 4).

- Nov 30, 2021: Announcement as a **capacity and symbolic tool** for public safety, a long list of holiday planning recommendations (Saskatchewan Ministry of Health, 2021bb, para. 1).
- Nov 30, 2021: Hit the 87% first-dose marks for residents 12 years and older, 80% for residents five and older, and 74% second-dose for residents five and older (Saskatchewan Ministry of Health, 2021bb, para. 10).
- Dec 21, 2021: The first Saskatchewan press release to mention Omicron (Saskatchewan Ministry of Health, 2021bc).
- Dec 28, 2021: A press release as a recent example of repeated updates (Saskatchewan Ministry of Health, 2021bd); these updates are all **capacity tools** for VH and uptake which provide a range of information; some parts help improve access, other parts use presumptive messaging, and others use loss-framing.
- Dec 30, 2021: Announcement of an **incentive tool** for VH, perhaps with potential to backfire, but also an **authority tool** for public safety, different quarantine times based on vaccination status: "Fully vaccinated asymptomatic residents who receive a positive… test… [must] self-isolate for five days, down from 10 days" (Saskatchewan Ministry of Health, 2021be, para. 1), but non- or partially vaccinated people must still self-isolate for 10 days; "Close contacts must isolate for 14 days from the date of last exposure unless they are fully vaccinated and do not have any symptoms" (para. 3).
- Jan 4, 2022, press release: "95 per cent of new cases are Omicron cases" (Saskatchewan Ministry of Health, 2022a, para. 11).
- Jan 7, 2022, Saskatchewan Premier, Scott Moe [responded to Federal Health Minister, Jean-Yves Duclos]… saying… his province will not be implementing a [population-wide] mandatory vaccine policy" (Zimonjic, 2022, para. 22).
- Jan 12, 2022: Announcement of a **capacity tool** for VH and uptake improving access,"43,000 vaccination appointments available through Saskatchewan Health Authority clinics with pharmacies throughout the province administering immunization" (Saskatchewan Ministry of Health, 2022b, para. 6), and the PHO in place was extended to Feb 28, 2022
- Jan 18, 2022: Announcement that Paxlovid will soon be available (Saskatchewan Ministry of Health, 2022c), and saying "treatment is no substitute for vaccination"; the drug and the message are **capacity tools** to address VH, the latter informing of efficacy.
- Jan 21, 2022: Discussion of a **capacity tool** for VH improving access in a news article: As of this date, Saskatchewan has in-school vaccination programs for 5- to 11-year-olds (Bains, 2022, para. 3).
- Jan 25, 2022: Announcement of expansion of a **capacity tool** for VH improving access: "more than 70,000… immunization appointments available through the Saskatchewan Health Authority clinics in addition to those offered by pharmacies throughout the province" (Saskatchewan Ministry of Health, 2022d, para. 10).
- Jan 27, 2022: Announcement that isolation days post positive test for the unvaccinated are reduced from 10 to 5, now matching the fully vaccinated (Saskatchewan Ministry of Health,

2022e), an **authority tool** to reduce restrictions on the those who express VH, politically and/or ideologically motivated?

- Feb 3, 2022, press release announcing that "starting the week of February 7… epidemiological information [will be] weekly on Thursdays…. [and] the provincial Covid-19 dashboard will be discontinued and… archived" (Saskatchewan Ministry of Health, 2022f, para. 16); this is a reduction of a **capacity tool** sending a message, intentionally or not and incorrectly or not, that the pandemic is transitioning towards being endemic.
- Feb 7, 2022: An article discussing Premier Moe who "encourage[d] the federal government to listen to the protestors in Ottawa.... saying 'I would hope that the federal government would listen to what they have to say. For the most part, I think it's been peaceful'" (Stein, 2022, opp. 15–18).; said on Saturday, Jan 29, 2022 (Patterson, 2022, para. 3).
- Feb 8, 2022: "The provincial requirement to provide proof of vaccination or negative tests in Saskatchewan businesses, workplaces and other public venues will end this Monday, February 14 at 12:01am" (Saskatchewan Ministry of Health, 2022g, para. 1); the announcement itself is a **capacity and symbolic tool** but the change in approach is **an authority and symbolic tool**, and these are partly politically motivated to address frustrations expressed by some of those who are VH an **authority tool** partly addressing concerns express by many who remain VH; "'Proof of vaccination has been an effective policy, but its effectiveness has run its course', Moe said" (Saskatchewan Ministry of Health, 2022g, para. 5).
- Feb 8, 2022: Announcement ending many **incentive tools** for VH saying "on Monday, Feb. 14…. businesses, workplaces, and other public venues will no longer be mandated by the province to require proof of vaccination or a negative test…. [and] rules like mandatory self-isolation for those with Covid-19 will also be over at the end of the month" (Quon, 2022, paras. 1–7).
- Feb 8, 2022: Announcement that on Feb 14, 2022, the end of proof of vaccination requirements will include and Saskatchewan Health Authority "facility, long-term care home, or affiliate" (Skjerven, 2022, para. 7).
- Feb 8, 2022: Announcement that on Feb 14, 2022, "Saskatchewan… [became] the first province to announce plans to lift all Covid-19 restrictions" (Giles, 2022, para. 19).
- Feb 8, 2022. The rationale for the Feb 14 changes includes "the number of hospitalizations due to Covid-19 has decreased, and incidental cases account for the majority of those in hospital," the province said in the statement…. [and] ICU admissions have remained low throughout the Omicron wave and are much lower than we saw with the more severe Delta wave" (Ellis, 2022, paras. 6–7); the rest of the rationale, as Premier "Moe said… [is] 'the benefits no longer outweigh the costs…. [and] it's time for proof of vaccination requirements to end'"(City of Lloydminster, 2022, para. 5).
- Feb 8, 2022: The announced changes for Feb 14 happened despite "acute care hospitalizations nearing record levels…. the province's chief medical health officer…

[saying] Saskatchewan would experience more hospitalizations than it has seen before [in the near future]" (Canadian Press, 2022a, paras. 1–15).

- Feb 12, 2022: Hit the 85.4% first-dose and 79.9% second-dose marks for those five and up (Saskatchewan Ministry of Health, 2022h, para. 3).
- Feb 15, 2022: An article saying Saskatchewan has "been something of an outlier in the country" in adopting a highly permissive approach (Han, 2022, para. 13).
- Detailed info on various Covid-19 vaccines (Government of Saskatchewan, n.d.-b, n.d.-c, n.d.-g); these are **capacity tool** for uptake and VH to inform about safety and efficacy.
- As a **capacity tool** for VH and uptake to improve access, a website was created to lower barriers to getting vaccinated through providing practical information, like eligibility, bookings, and locations (Government of Saskatchewan, n.d.-a).
- A Saskatchewan Health Authority website with information for HCPs (Saskatchewan Health Authority, n.d.-c); this is a **capacity tool** mostly for uptake, but a few subsections are devoted to VH, and the purpose if to inform and ecaudate HCPs (Saskatchewan Health Authority, n.d.-b, n.d.-a, 2021b)
- "Parental consent will be required prior to the administration of the Covid-19 vaccine to Saskatchewan youth" 12 years and below (Saskatchewan Ministry of Health, 2021p, para. 12); there is no age of consent in Saskatchewan, but it appears that anyone 12 and under must have a consent form signed by a parent or guardian, anyone 13 to 17 can go through an assessment (Saskatchewan Health Authority, 2021a), and that for those 12 and under, parents must be present for any Covid vaccination, a change from the process for other vaccinations (Salloum, 2021).
    - in Manitoba, people 16 and over could consent without parents, and those between 12 and 15 could be assessed to determine if they are capable of consenting without a parent (Province of Manitoba, n.d.-c, sec. Who signs the consent form?)
- Before the QR code, there was a one-page vaccination record for a short time (Government of Saskatchewan, n.d.-f)
- The province regularly generated press conferences featuring public officers, the Premier and the Chief Medical Health Officer (Government of Saskatchewan, n.d.-d), which it promulgated through many media channels, including social media; these are **capacity tools** addressing many things, including VH and uptake, with a range of purposes.

Manitoba

- March 20, 2020, State of Emergency declared (Province of Manitoba, n.d.-c)
- As **capacity tools** addressing uptake and VH, several means of informing people.
    - Vaccine information central portal providing links to eligibility criteria, where to get vaccinated, questions and answers, and information for HCPs (Province of Manitoba, n.d.-d).

    - A website showing detailed information, like highly localized geographic data on immunization rates, demographic data, a provincial dashboard, and links to regular Vaccine Technical Briefings (Province of Manitoba, n.d.-q).
    - A website showing risks by vaccination status, i.e., 0 doses, 1 dose, 2 doses, and 3 doses, for example, rate ratios in terms of hospitalization, admissions into ICU, and death appropriately communicating risk through loss-framing (Province of Manitoba, n.d.-b)
    - Info on each approved vaccine (Province of Manitoba, n.d.-a)
    - Detailed questions and answers about vaccination (Province of Manitoba, 2021o).
- As **capacity tools** for VH building communications capacity, links to posters for businesses about vaccine requirements to be on premises or about staff all being fully vaccinated (Province of Manitoba, n.d.-p)
- As **capacity tools** for uptake and VH to improve access, many ways to get vaccinated: Super-sites, Pop-up Clinics, Focused Immunization Teams, Urban Indigenous Vaccine Clinics, and a Vaccine Shot Finder, online Self-Serve Booking Too, or vaccine booking call centre (Province of Manitoba, n.d.-h)
- As **capacity tools** for VH informing and educating HCPs, educational products for physician and pharmacist to help with competency in administering vaccines and to understand VH, but it is unclear if these include anything about safety of particular vaccines (Province of Manitoba, n.d.-j, n.d.-m).
- As **capacity tools** for VH which inform about safety, links to many detailed fact sheets, including one on mRNA vaccines safety, another if you experience any adverse effects post-vaccination, and another for those who are immunosuppressed and/or have an autoimmune condition (Province of Manitoba, n.d.-o).
- As a **capacity tool** for VH informing HCPs, links to regular information updates for HCPs (Province of Manitoba, n.d.-i).
- As **capacity tools**, links to regularly released new releases; presumably, these are information updates primarily targeted at news media to then promulgate to the general public (Province of Manitoba, n.d.-l); these cover a broad range of topics, some of which are specific to VH.
- Dec 9, 2021: Announced a **capacity tool** for uptake to improve access, the initial vaccination plans targeting seniors, especially in congregate living, front-line HCPs in those facilities, and those most at risk in Indigenous communities (Province of Manitoba, 2020a, paras. 2, 6)
- Dec 14, 2021: Announcement of first vaccination clinic, a **capacity tool** for uptake to improve access (Pallister, 2020).
- Dec 15, 2020: Enforcement update which notes an **incentive tool** which was later used for VH, the pre-existing fines, fine for individuals of $289 for not wearing masks and $1296 for other offenses; fines of $5000 for corporations (Province of Manitoba, 2020b, para. 8)
- Dec 31, 2020: Announcement of a **capacity tool** for uptake to improve access, a partnership with experts in First Nations health to enable rapid deployment to remote communities which

involved the pre-existing First Nations Pandemic Response Co-ordination Team (Province of Manitoba, 2020d, paras. 1, 3), and for which they used Moderna (Pallister, 2021a, para. 1); one result of this was a First Nations vaccine clinic opened in early February (Province of Manitoba, 2021k).

- Jan 4, 2021: Effective this date, the RBC Convention Centre super site opened (Province of Manitoba, 2020c, para. 2), a **capacity tool** for uptake to improve access
- Jan 6, 2021: Announced Focused Immunization Teams to target the most vulnerable (Province of Manitoba, 2021c, para. 1), a **capacity tool** for uptake to improve access
- Jan 13, 2021: Announcement of two more super-site, one opening January 18 and the other on February 1 (Pallister, 2021b), **capacity tools** for uptake to improve access
- Jan 15, 2021: Announcement of a survey at EngageMB.ca to get "Manitobans to share feedback on their priorities for potential easing of the current Covid-19 restrictions" (Province of Manitoba, 2021d, para. 3), a **learning tool** that appears for public safety not used elsewhere.
- Jan 19, 2021: Announcement of a **capacity and symbolic tool** for public safety: The "government is considering modest changes to the public health orders that balance the needs of the health-care system and the economy" in response to input from ten of thousands of Manitobans (Province of Manitoba, 2021e, para. 1), and other similar efforts attuned to public opinions, on Jan 26, for example (Province of Manitoba, 2021f)
- Jan 29, 2021: Announcement that all first dose for personal care homes, for which they aimed at completing in 28 days, was met in only three weeks (Province of Manitoba, 2021h, para. 2).
- Feb 2, 2021: A town hall to discuss the province's vaccination plan, a **capacity tool** for uptake building communications capacity (Province of Manitoba, 2021g, para. 14).
- Feb 2, 2021: Announcement of a **capacity tool** for uptake and VH improving access, "partnering with organizations representing Manitoba physicians and pharmacists and their members" to deliver vaccines to their patients (Province of Manitoba, 2021i, para. 1)
- Feb 3, 2021: First apparent announcement of pop-up clinics (Province of Manitoba, 2021j, para. 5)
- Feb 9, 2021: Announcement of a **capacity tool** for uptake and VH improving access, the opening of a Winnipeg clinic targeting "priority populations identified by First Nation medical leadership" (Province of Manitoba, 2021k, para. 1).
- Feb 10, 2021: A **capacity tool** for uptake and VH improving access, the implementation of an order expanding the number professions able to administer Covid-19 vaccines (Province of Manitoba, 2021l)
- Feb 11, 2021: Manitoba announced a deal to buy vaccines, if eventually approved by Health Canada, from Alberta-based Providence Therapeutics, the first—and maybe only—province to bypass Ottawa (Nickel, 2021, paras. 1–3).
- Feb 18, 2021: Announcement that Covid-19 immunization records were first made available online (Province of Manitoba, 2021m).

- Feb 24, 2021: Announcement that First Nations Vaccination data was available (Province of Manitoba, 2021n).
- Feb 26, 2021: Authorization date of AstraZeneca in Canada (Province of Manitoba, 2021p)
- Mar 5, 2021: Manitoba extended the period for second dose to 16 weeks (Province of Manitoba, 2021q, para. 9).
- Mar 11, 2021: Effective date of further expansion venues, including more pop-up clinics and availability at medical clinics and pharmacies (Province of Manitoba, 2021r)
- Mar 13, 2021: Announcement of reaching the 100,000 dose mark (Province of Manitoba, 2021s)
- March 17, 2021: Announcement of a **capacity tool** for VH to build communications capacity, the new "#ProtectMB" campaign, but also a **leaning tool** to develop tailored and culturally adapted messaging. This included materials sent to the keenest of Manitobans to help them to encourage friends, family, and their social networks to get vaccinated. Consultations and outreach were targeted at specific populations to refine and adapt the campaign to address and reflect their concerns and questions (Province of Manitoba, 2021t).
- As Dozens of bulletins from mid-December 2020 to late November 2021 declaring doses administered, these messages are **symbolic tools** for VH to create normative pressure; changing eligibility criteria, and immunization locations, **capacity tools** for VH to improve access (Province of Manitoba, n.d.-l).
- Mar 19, 2021: Announcement of a **capacity tool** for uptake to speed and thus improve access, a new process to accelerate vaccination administration rates at super-sites (Province of Manitoba, 2021u).
- Mar 19, 2021: This message is a **symbolic tool** for VH: "Effective Friday, March 19th, 2021, public health officials strongly recommend… testing occur before travel to First Nations and Indigenous and Northern Relations communities, and before someone returns to a community if a resident has been away for more than 48 hours…. [but] is not routinely recommended for individuals who are fully vaccinated for Covid-19 AND two weeks have passed since their last dose" (Province of Manitoba, 2022e).
- Apr 3, 2021: Messages as **symbolic tools** for VH using altruistic messaging, conveying efficacy, and presumptive in nature (Province of Manitoba, 2021v): "'Every day, thousands of Manitobans are protecting themselves and the people they love by choosing to get the vaccine,' said Stefanson" (para. 2); and "Dr. Joss Reimer, medical lead for the Vaccination Implementation Task Force, [said] 'vaccines are safe, effective and the best way for us to get back to the things we love. When it is your turn, make your appointment and be immunized as soon as possible'" (para. 6).
- May 3, 2021: Announcement of a **capacity tool** for VH to build communications capacity and inform and educate both lay people and HCPs, a team of physicians that provides advice and guidance to help better inform concerned citizens at vaccine super sites and doctor's office (Province of Manitoba, 2021w).

- May 11, 2021: Announcement of a **capacity tool** for VH to create tailored and culturally adapted messaging, a social media campaign targeted at those 18 to 35 using various hashtags, which involved selected influencers who asked questions of an indigenous physician to debunk myths and misinformation (Province of Manitoba, 2021x).
- May 12, 2021: Effective date for 3 hours paid leave to get vaccinated (Lockton Global Compliance, 2021, sec. Manitoba).
- May 15, 2021: Announcement of reaching the 50% first-dose mark for those 18 years and up (Province of Manitoba, 2021y).
- May 19, 2021: Announcement of a **learning tool** for VH to ultimately generate tailored messages, an engagement campaign to better understand VH through soliciting feedback (Province of Manitoba, 2021z).
- May 21, 2021: The announcement a **capacity tool** for uptake and VH to improve access , 16- and 17-year-olds can consent without a parent or guardian; People between 12 to 15 who show up from an appointment but without the consent form can "go through an informed consent process with a clinical lead to assess their ability to consent on their own and proceed with the vaccine" (Province of Manitoba, 2021aa, para. 5)
- May 21, 2021: Announcement of a **capacity tool** for uptake and VH improving access, cross-broader, international coordination between Manitoba and North Dakota to get 1000 truck-drivers vaccinated (Province of Manitoba, 2021ab).
- June 3, 2021: Announcement of a **capacity tool** for VH to ultimately generate tailored and culturally adapted messages, "Community Outreach and Incentive Grants, funding for local organizations, groups, businesses in the province that work with and in vaccine-hesitant communities.... Applicants will be required to attend an information session on VU and hesitancy, and submit a simple proposal on their approach to addressing low uptake in their community. Staffing, outreach, food and other activities will be eligible for funding" (Province of Manitoba, 2021ac, paras. 3–8).
- June 3, 2021: A message as a **symbolic tool** for VH acknowledging the value of leveraging trust relationships with HCPs, Premier Pallister said: "We know from research and clinical leadership that there are thousands of Manitobans who are open to vaccination, but they need support from people they know and trust to make that decision" (Province of Manitoba, 2021ac, para. 4).
- June 8, 2021: Announcement of an **incentive tool** for VH with potential to backfire, a vaccine passport called the Manitoba Immunization Card: To be eligible, one must "have a Manitoba health card; have received two doses of a vaccine; and wait 14 days after getting the second dose of vaccine" (Province of Manitoba, 2021ad, para. 4).
    - A set of **capacity tools** all designed to support the Manitoba Immunization Card, physical, digital, or in an app (Province of Manitoba, 2022b) and the verifier app (Province of Manitoba, 2022f).
    - Venue restrictions as **authority tools** supporting the immunization card, without which one cannot access:

        - ports and entertainment venues
        - attend restaurants, bars, and lounges
        - visit businesses or any other site that requires proof of immunization (Province of Manitoba, n.d.-g)
    - Ended Mar 1, 2022, in a Feb 24, 2022, announcement (Lefebvre, 2022, para. 4)
- June 9, 2021: Announcement of an **incentive tool** for VH as an inadvisable inducement, a lottery with seven "prizes of $100,000…. and 10 draws for $25,000 scholarships for young people aged 12 to 17 across the province" (Province of Manitoba, 2021ae, para. 4).
- June 9, 2021: First-dose vaccination rate for those 12 and up hit 67.4% (Bernhardt, 2021a, para. 3).
- June 10, 2021: A statement from Premier as a **symbolic tool** for VH and uptake using altruistic messaging but also applying normative pressure: "This morning I received my second dose of the Pfizer vaccine…. We all have a role to play in this fight against Covid-19, and I encourage all eligible Manitobans to get… [vaccinated] as soon as possible…. [and] about two-thirds of eligible Manitobans… have received at least one dose" (Pallister, 2021c, paras. 1–6).
- June 10, 2021: "The Manitoba Government announced the 4-3-2-One Great Summer Reopening Path, the 'Reopening Plan'" (Christiansen & Théberge, 2021, para. 1), which notes target vaccination rates for Canada Day (70% first dose and 25% second dose), August long-weekend (75% and 50%), and Labour Day (80% and 75%). Announcement of these targets is a **symbolic tool** for VH to apply normative pressure.
- June 11, 2021: A press release as a **symbolic tool** for VH applying normative pressure, using safety and efficacy messaging, and saying the 1 million dose mark had been reached and that vaccines are safe and effective; also noted was another **symbolic and capacity tool** for VH amplifying the voices of the vaccinated, getting them to upload and share their vaccination stories (Province of Manitoba, 2021af).
- Jun 16, 2021: A news conference where Dr. Joss Reimer, medical lead, Vaccine Implementation Task Force, announced four town hall meant to allow citizens with concerns to get answers directly from doctors, and effort by Doctors Manitoba (Manitoba Government, 2021, sec. 9:55–10:26).
- June 2021: A non-random survey of 600 Manitobans commissioned by the province about attitudes about VH and Covid-19 vaccination: It is unclear what the purpose of this tool was. It could be a **learning, capacity, or symbolic tool** (Prairie Research Associates, 2021)
- June 2021: A survey by the Province as a **learning tool** for VH, possibly meant to generate tailored and culturally adapted messages; data was collected May 19 to May 28, 2021, with 36,655 respondents, on attitudes about Covid-19 vaccination (Province of Manitoba, 2021a).
- June 17, 2021, letter to Premier Pallister saying "the legal line between vaccine promotion and mandating…. [as such that] policies and practices intended to treat vaccination status as a prerequisite to full participation in public life run the risk of rendering a voluntary vaccination regime de facto mandatory." (Bryant et al., 2021, para. 9). A government ought

not acknowledge the right to choose while regulating away choice…. meaningful consent is required for voluntariness to be genuine, and state-sanctioned, coerced consent does not meet that threshold" (Bryant et al., 2021, para. 9). "Mandating… disclosure is a significant violation of one's privacy, [and] it means that even a small amount of information on the Manitoba vaccination card, name and vaccination status, is sensitive" (Bryant et al., 2021, para. 11).

- June 29, 2021: Hit 72% first-dose and over 32% second-dose rates for those 12 and up (Graham, 2021, para. 2).
- July 2021: Before any mandates, many legal arguments why vaccine mandates are problematic as presented by the Manitoba Chambers of Commerce (Buchanan, 2021).
- July 5, 2021: They reached 75.1% first-dose and 51.5% second-dose marks of those eligible, those 12 and up (CBC News, 2021a, para. 3).
- July 23, 2021: A post by a law firm explaining how employers may be legally able to implement vaccine mandates, even though the province may not (Fillmore Riley, 2021)
- Aug 3, 2021: 80% first-dose mark reached with expectations to hit 75% second-dose mark the following week for those 12 and up (Province of Manitoba, 2021ai, para. 3).
- Aug 19, 2021, at the University of Manitoba: "President Benarroch announced that vaccines will be required for everyone on campus starting in late fall of 2021" (University of Manitoba, 2021); and at the University of Winnipeg (University of Winnipeg, 2021). These are examples of the province allowing other entities to do the work of implementing **authority tools** for VH with potential to backfire.
- August 24, 2021: Announcement of a**uthority tools** for VH with potential to backfire: "The Province of Manitoba announced that…. by October 31, 2021, provincial public employees who work with vulnerable populations will be required to be fully immunized and provide proof of vaccination, or otherwise undergo regular testing"; this includes direct HCPs, educational workers and support staff, child-care workers, public servants with ongoing contact with the public, and Manitoba Justice employees in contact with vulnerable people and in correctional facilities (Czarnecki et al., 2021, paras. 1–2; Province of Manitoba, 2021aj, para. 4); specific reference to teachers and school settings only (The Manitoba Teachers' Society, 2021).
- August 27, 2021: A message as a **symbolic tool** for VH, the province recommends that "private businesses… consider mandating vaccinations for their employees" (Czarnecki et al., 2021, sec. Update).
- Aug 21, 2021: Hit the 81.2% first-dose and 75% second-dose marks for those 12 and up (Billeck, 2021, paras. 1–2).
- Aug 24, 2021: A press release saying that in effect on Oct 18, "requirements for routine rapid testing of unvaccinated front-line public servants…. [for] all provincial employees who have direct and ongoing or prolonged contact with vulnerable populations to either be fully vaccinated, or to comply with strict testing procedure" (Province of Manitoba, n.d.-n, para. 1), This is an **incentive tool** for VH arguably to alleviate backfire potential.

- Aug 24, 2021: A press release highlighting **incentive tools** for VH: "For failure to comply with the emergency orders…. total fine amounts will be set at $1,296 for tickets issued to individuals… and $5,000 for tickets issued to corporations" (Province of Manitoba, n.d.-n, sec. Enforcement Information).
- Aug 25, 2021 (effective date), judges (and some court staff), must be fully vaccinated (Schmitz, 2021), but they will not be required to show proof and will rely instead on the "honour system" (para. 9); a judge who discloses s/he is unvaccinated without a medical reason will remain on full pay — even when he or she is not assigned any judicial duties" (Schmitz, 2021, para. 11). This is very different than for employees in practically any other sector and it is especially troubling because it is inequitable—thus unjust—yet these are the very people society entrust to implement justice. There are technical legal reasons for this, some related to judicial independence (Schmitz, 2021, paras. 12–14), but this nevertheless creates bad "optics" for the courts. These are **authority tools** for VH but in this case, with low backfire potential.
- Aug 31, 2021: "82% of eligible Manitobans… have received their first dose of Covid-19 and 76.7% of people are fully vaccinated" (Coubrough, 2021b, para. 4).
- Sep 2021: The province gives a long list of reasons for MDs to potentially grant medical exemptions (Doctors Manitoba, 2021). This list is a **capacity tool** for VH to alleviate backfire potential of its vaccine passport.
- Sep 3, 2021: "A mask mandate for indoor public spaces is already in place, and outdoor gathering limits will be reduced from 1,500 to 500 as of Tuesday when food courts, museums and galleries will also require visitors to show immunization records. Worship gatherings are not included in the vaccine mandates" (CHVN 95.1 FM, 2021). This appears to be more liberal than other provinces.
- Sep 3, 2021: Vaccine passports went into effect in Manitoba (Canadian Press, 2021d) (1st province?)
- Sep 20, 2021: "84.3% of eligible Manitobans have received one dose of Covid-19 vaccine, while 79.4% have received two doses" (Dueck, 2021, para. 5).
- Sep 21, 2021,: Discussion of **capacity tools** for VH to improve access but also meant to leverage trust relationships with HCPs, the announcement of $14 million to support HCPs in addressing their VH patients: "The funding will be used to cover administrative costs and physician fees connected to the outreach, co-ordination and visits" (Bernhardt, 2021b, para. 14); and "to support community-focused and one-on-one outreach to improve access to" immunization (Province of Manitoba, 2021ak, para. 1).
- Sep 27, 2021: "84.7% of eligible Manitobans have received one shot of vaccine and just over 80% cent have received two doses" (Gibson, 2021, para. 8).
- Fall 2021: **Incentive tools** for VH, fines of up to $5000 for businesses who do not comply with vaccine passport and mask mandates (Lambert, 2021).
- Oct 1, 2021: Tweet that "85% of eligible Manitobans have received their first dose" (Manitoba Government [@mbgov], 2021).

- Oct 6, 2021: “85.3 per cent of eligible Manitobans had received at least one dose of a Covid-19 vaccine, and 81.3 per cent had both shots” (Gowriluk, 2021, para. 23).
- Oct 18, 2021: “Requirements for routine rapid testing of unvaccinated front-line public servants comes into effect” (Province of Manitoba, 2022e, sec. Routine rapid testing of unvaccinated front-line public servants), and “workplaces will be required to make rapid testing available” to employees (Province of Manitoba, n.d.-n, para. 4), and it appears this was provincially funded and workers did not have to pay for these tests themselves, this is meant to be an **incentive tool** for VH (Froese, 2021, para. 35), but less so than places where employees had to pay for test themselves.
- Oct 18, 2021, CBC News article saying “there are no restrictions on indoor and outdoor gatherings at private residences — unless someone is present who has chosen not to get vaccinated *but is eligible to do so* [emphasis added]” (Bernhardt, 2021c). This implies that it is not about risk, but about creating incentives.
- Oct 21, 2021: State of emergency ended, which was first declared on March 20, 2020 (CBC News, 2021h).
- Oct 29, 2021: A summary of size restrictions on a range of gatherings and locations and of “measures and restrictions the province implemented and lifted for the period of November 12, 2020 to October 29, 2021” (Manitoba Public Health Act, 2009; Monnin et al., 2021, op. 2; Province of Manitoba, 2021b). These include differences based on whether unvaccinated people are present or not, so these are **incentive tools** for VH with potential to backfire.
- Oct 25, 2021: “More than 83% of eligible Manitobans are now fully vaccinated” (Province of Manitoba, 2021al, para. 4).
- Oct 27, 2021, report of survey data on vaccination rates of public servants (Province of Manitoba, 2021am); for example, 99.8% of Manitoba's Civil Service Commission are fully vaccinated (p. 2), and for all of Manitoba’s direct-care workers, 36,269 are fully vaccinated, 1,788 require testing, and 184 are unvaccinated or declined to volunteer their vaccine status *and* refused testing (p. 3). This report is a **symbolic capacity tool** meant to apply normative pressure, but the mandate is an **authority tool** directed at VH with potential to backfire.
- Nov 3, 2021: “87% of those eligible have received one dose of a vaccine and 83.9% have both” (Canadian Press, 2021f, para. 12).
- Nov 19, 2021: “84.6% of eligible Manitobans have received both doses with 87.3% getting at least one shot” (Aldrich, 2021, para. 11).
- Nov 22, 2021: Effective this date, an **incentive tool** for VH with low likelihood to backfire because of its narrow specificity, anyone identified as an important partner in the ongoing care and recovery of inpatients will required proof of vaccination (McMorris, 2021; Shared Health Manitoba, 2021)
- Late 2021: Announcement of an **incentive tool** for VH with potential to backfire, smaller sizes for groups that include *any* unvaccinated individuals over the 2021 holiday season (and beyond?) for indoor and outdoor gatherings on private property and in indoor public spaces (Province of Manitoba, n.d.-f)

- Dec 1, 2021: “80.5% of all eligible Manitobans age five and up have received at least one dose of the vaccine and 77.1% have received two doses” (Bernhardt, 2021d, sec. In-school vaccine clinics).
- Dec 1, 2021: Manitoba began reporting vaccination percentage data in its Covid Bulletins, not just the absolute number of doses administered, and this could be found in the “Vaccine” section (Province of Manitoba, 2021ao).
- Dec 6, 2021: “As of today, 81.7% of all eligible Manitobans ages five and up have received at least one dose of the vaccine and 77.3% have received two doses” (Province of Manitoba, 2021ap, sec. Vaccines).
- Dec 15, 2021: Effective this date, an **authority tool** for VH with potential to backfire, mandatory full vaccination for all who attend the legislature, including MLAs (K. Rosen, 2021).
- Dec 15, 2021: As of this date, “83.9% of eligible Manitobans have received one dose of the vaccine and 78.1% have received two doses” (DePatie, 2021, para. 9).
- Dec 20, 2021: “84.4% of all eligible Manitobans ages five and up have received at least one dose of the vaccine [and] 78.2% have received two doses” (Province of Manitoba, 2021aq, sec. Vaccine).
- Dec 31, 2021: Effective this date, arguably an **incentive tool** for VH but probably better classified as an **authority tool** for public safety: Five days quarantine for vaccinated people who test positive, versus 10 for unvaccinated people (Province of Manitoba, 2021ar); the five additional days are not punitive but are due to differential risk.
- Jan 7, 2022: Hit 84.5% first-dose and 77.9 second-dose marks for those five and up (Province of Manitoba, 2022a, sec. Vaccine).
- Jan 10, 2022: Their Covid-19 Bulletins stopped reported on vaccination rate for the entire eligible population and only provided that for 5- to 11-year-olds (Province of Manitoba, 2022d, sec. Vaccine).
- Jan 13, 2022: “84.6% of eligible Manitobans who have received at least one dose [and] 78.1% who rolled up their sleeve for a second dose” (Unger, 2022a, para. 11).
- Jan 21, 2022: As of this date, Manitoba has in-school vaccination programs for 5- to 11-year-olds (Bains, 2022, para. 3), but parents could not attend due to visitor restrictions (para. 17), a **capacity tool** for uptake and VH improving access.
- Feb 7, 2022: “80.3% of eligible Manitobans five and older had received at least two doses” (CBC News, 2022c, para. 20).
- No date: An **incentive tool** for VH, grants for business under the Healthy Hire Program are only available for “new employees who can attest they have been vaccinated, intend to be vaccinated or are unable to be vaccinated” (Province of Manitoba, n.d.-e, para. 1).

Reasonable accommodation for medical, religious, or political reasons: the first requires proof from a medical authority, and the last two require sincere beliefs that can be connected to an inability to get vaccinated (The Manitoba Human Rights Commission, 2021, sec. 14).

Quebec

- Nov 4, 2021, Global News article noting Quebec pulled back from its "plan to suspend unvaccinated workers as of Nov. 15 [because it] would have forced the health sector to cut services [at a time of need]…. while 97 per cent…are vaccinated" (Maratta, 2021, paras. 4–5), which was an **incentive tool** for VH.
- Dec 30, 2021, Quebec announced a "curfew will run from 10 p.m. to 5 a.m., indefinite[ly]" (Canadian Press, 2021g, para. 2), "starting Dec. 31 as the province battles an explosive rise of… Omicron…. [with] fines ranging from $1,000 to $6,000" (Caruso-Moro, 2021/2022, paras. 1–4); **authority tool** for public safety.
- Jan 6, 2022: Announcement that "liquor and cannabis stores will require vaccine passport as of Jan. 18" (Montreal Gazette, 2022).
- Jan 7, 2022, announced that "Quebecers will need to show proof that they are adequately vaccinated in order to enter the Quebec Liquor Corp. (SAQ) and government-run stores selling recreational cannabis (SQDC) as of Jan. 18" (Nerestant, 2022, para. 4); an **incentive tool** for VH
- Jan 11, 2022, "Quebec has announced plans to impose a 'health tax' on residents who refuse to get the Covid-19 vaccination for non-medical reasons" (Cecco, 2022, para. 1), an **incentive tool** for VH.
- Jan 13, 2022, in an NPR article: Health Minister "Dubé said the number of new vaccine appointments shot up in the 48 hours around the [health tax] announcement, reaching what he called a record for several days.
- Jan 24, 2022, Canadian Press article saying while the "Quebec government said it was adopting a new 'positive approach' to persuade people to get their first dose…. [using] a pop-up vaccination clinic…. [and] a shift in mindset…. [nevertheless] proof-of-vaccination requirements began applying to big-box stores, such as Walmart and Costco" and describing these as carrots and sticks (Bresge, 2022, paras. 17–21); **incentive tools** for VH
- Feb 1, 2022, "Premier François Legault says his government will not go ahead with a proposed tax on the unvaccinated, in order to protect "social cohesion" in the province" (MacLellan & Marchand, 2022, para. 1), an **incentive tool** for VH.
- Feb 15, 2022, effective this date: "Vaccine passports will no longer be required in big-box stores and provincial liquor and cannabis outlets" (Han, 2022, para. 4). In the same article, Quebec

> was the only province to implement a curfew. It was first implemented from Jan. 9 to May 28, 2021, and then again from Dec. 31, 2021, to Jan. 17, 2022. It was the only jurisdiction to suggest a tax on unvaccinated individuals, though this idea was abandoned. Quebec has thus been willing to implement some of the harshest public health measures across Canada…. However, when we look at vaccine mandates in specific sectors, Quebec stands out by being rather timid in contrast with its other public health measures. Whereas other provinces have made

vaccination mandatory in sectors ranging from the entire civil service to long-term care homes, Quebec backtracked on the only mandate it announced, for health-care workers. Instead, it subjects health-care workers to testing multiple times a week, with workers being subject to unpaid leave if they refuse to be tested. (paras. 9–10).