



VACCINE UPTAKE AMONG FIRST NATIONS, INUIT, AND MÉTIS POPULATIONS

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Nevertheless, vaccine coverage across First Nations, Inuit, and Métis populations and regions is uneven due to structural, social, and interpersonal factors. This fact sheet aims to support the Public Health Agency of Canada in its efforts to update its immunization strategy. It provides an overview of the literature² on the extent of vaccine coverage across First Nations, Inuit, and Métis populations and the barriers to and facilitators of vaccination. This literature was focused on the past 15 years, up to April 2024, and was identified using academic

databases (Google Scholar, PubMed) and the Government of Canada statistical sources.

It is important to note, however, that data are not always routinely collected for Indigenous populations and when they are, often Indigenous populations are aggregated collectively and the data do not reflect the priorities and needs of First Nations, Inuit, and Métis populations (Halseth, 2024). This highlights the need for more disaggregated data for First Nations, Inuit, and Métis populations specifically, and the need to honor Indigenous Peoples' sovereign right to own, control, access, and protect data pertaining to them.

Vaccine coverage

Routine childhood vaccinations

The federal government has set a goal of achieving 95% full routine childhood vaccination coverage for all children in Canada aged two years (Indigenous Services Canada [ISC], 2019; Public Health Agency of Canada [PHAC], 2023). Current data show varying rates of vaccination among Indigenous children, with some showing similar rates to non-Indigenous children and others showing either lower or higher rates. Where inequalities in vaccine coverage have appeared



¹ The term ‘Indigenous’ is used throughout this fact sheet to refer collectively to First Nations Peoples, Inuit, and Métis Peoples, as defined under Section 35 of the Canadian *Constitution Act* of 1982. When referring to a specific Indigenous group, the terms “First Nations”, “Inuit”, and “Métis” are used where relevant.

² Search terms included “vaccine hesitancy” OR “vaccine confidence” OR “vaccination” OR “immunization” AND “Indigenous” OR “First Nations” OR “Inuit” OR “Métis” AND “Canada”.



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among children, there is evidence that when controlling for socio-economic factors, Indigenous identity is not associated with lower child immunization rates (Chen et al., 2023; Lemstra et al., 2007; Statistics Canada, 2023a). Most studies also show an overall increasing trend in the vaccination rates of Indigenous children over time, with some exceptions arising during the COVID-19 pandemic.

Between 2011 and 2016, 81-84% of First Nations children in Alberta, Saskatchewan, Manitoba, Quebec, and the Atlantic provinces were fully vaccinated by two years of age for measles, mumps, and rubella (collectively referred to as MMR), and 68-73% were fully vaccinated for diphtheria, tetanus, pertussis (collectively referred to as DTaP), polio, and haemophilus influenzae type b (Hib) (ISC, 2019). These rates are considered to be similar ranges as for provincial and national estimates.

Data from the childhood National Immunization Coverage Survey (cNICS), 2021

(Table 1) show lower rates of full vaccine coverage among Indigenous children by 2 years of age compared to Canadian children generally for most vaccines. However, Indigenous children have exceeded the national immunization target for polio; are approaching the target for meningococcal type C and pneumococcal vaccine, and have almost no disparity for meningococcal type C, pneumococcal, and rotavirus vaccines compared to Canadian children generally. The cNICS data also show that children living in the predominantly Inuit region of Nunavut are likely to experience lower rates of vaccine coverage compared to other Indigenous children and all Canadian children, particularly as a result of the COVID-19 pandemic (PHAC, 2023). While most of the provinces and territories showed stable vaccine coverage over the 2017-2021 period, with some even showing increases in coverage for some vaccines (Statistics Canada, 2023b), Nunavut showed significant declines in coverage for all 2021 vaccines

compared to 2017 (PHAC, 2023). Nevertheless, a greater proportion of Inuit (36%) respondents in the 2021 cNICS reported being more inclined to get their children vaccinated following the pandemic compared to non-Indigenous (8%) and First Nations (2%) respondents (Statistics Canada, 2023a).

A national cross-sectional online survey conducted by Humble et al. (2023) just before the first pediatric COVID-19 vaccine was approved for children aged 5-11 years revealed that Indigenous parents were as likely to accept routine childhood vaccination for their children during the COVID-19 pandemic as parents who did not identify as a racialized³ minority (85.1% vs. 89.1%, respectively). In fact, Indigenous participants were more than twice as likely to report the pandemic made routine vaccines more important to them than participants who did not self-identify as a racialized minority (36.6% vs. 16.9%, respectively).

³ The survey compared individuals who self-identified as racialized (Indigenous, newcomer, or spoke minority languages most often) to those who did not.



TABLE 1: COMPLETED⁴ VACCINATION COVERAGE BY AGE 2 FOR INDIGENOUS CHILDREN AND CHILDREN LIVING IN THE PREDOMINANTLY INUIT REGION OF NUNAVUT COMPARED TO ALL CANADIAN CHILDREN, 2021 (%)

Vaccine	Nunavut	Indigenous*	All 2-year-old children
Diphtheria	24.1 ^{ab} (15.2-35.9)	67.4 (52.4-79.5)	77.1 (74.8-79.3)
Pertussis	24.1 ^{ab} (15.2-35.9)	67.4 (52.4-79.5)	77.1 (74.8-79.3)
Tetanus	24.1 ^{ab} (15.2-35.9)	67.4 (52.4-79.5)	77.1 (74.8-79.3)
Polio	33.5 ^{ab} (23.1-45.8)	95.3 ^b (91.2-97.6)	91.8 (90.2-93.1)
Haemophilus influenzae type b (Hib)	24.1 ^{ab} (15.2-35.9)	65.3 (50.5-77.6)	75.3 (72.9-77.6)
Measles	34.6 ^{ab} (24.0-46.9)	82.5 (68.4-91.1)	91.6 (89.9-93.1)
Mumps	34.6 ^{ab} (24.0-46.9)	82.5 (68.4-91.1)	91.5 (89.8-93.0)
Rubella	34.6 ^{ab} (24.0-46.9)	82.5 (68.4-91.1)	91.5 (89.8-93.0)
Hepatitis B	32.5 ^{ab} (22.3-44.8)	67.3 ^a (45.1-83.7)	82.6 (79.7-85.1)
Varicella	21.2 ^{ab} (13.0-32.8)	78.0 (64.6-87.3)	87.5 ^b (85.5-89.2)
Meningococcal type C	34.5 ^{ab} (24.0-46.9)	89.4 (81.0-94.4)	90.5 (88.7-92.0)
Pneumococcal	21.0 ^{ab} (12.8-32.6)	87.0 (78.5-92.4)	85.1 (83.1-87.0)
Rotavirus	N/A	84.7 ^a (74.1-91.5)	85.6 (83.5-87.5)

Source: All Canadian children (Table 1, PHAC [2023]); Nunavut (Table 2a, PHAC [2023]); Indigenous children (Table 3, PHAC [2023]).

* Data includes off-reserve First Nations, Inuit, and Métis children by age 2 living in the 10 provinces and three territories; First Nations children living on reserve are excluded (Statistics Canada, 2022).

95% CI-95%-Confidence interval 95% (weighted)

^a Estimates and confidence intervals are of marginal quality due to high sampling variability and should be used with caution.

^b Statistically significant difference between 2019 and 2021.

⁴ Defined as receiving all of the recommended doses of the specific vaccine by the recommended age, as determined by each province/territory. The recommended vaccination schedule varies across jurisdictions, but the recommended doses for children by age 2 are as follows: diphtheria (> 4), polio (> 3), Hib (> 4), measles (> 1), pertussis (> 4), tetanus (> 4), mumps (> 1), rubella (> 1), hepatitis B (> 3), varicella (> 1), meningococcal type C (> 1-2), pneumococcal (> 3-4), and rotavirus (> 2).



Pandemic events and seasonal influenza

Much of the recent data for pandemic events and seasonal influenza pertains to COVID-19 and the 2009 H1N1 influenza. With both of these pandemic events, Indigenous populations were prioritized for vaccination in provincial government policies due to a higher risk of infection and more severe complications (Ayers et al., 2021; Driedger et al., 2015). Similar to routine childhood vaccination, vaccination rates for pandemic and seasonal events can vary across Indigenous populations and contexts, with some Indigenous rates similar to non-Indigenous populations and others being higher or lower. However, in most cases, any vaccination gaps between Indigenous and non-Indigenous populations were found to be not statistically significant; rather, socio-economic differences appeared to account for these differences.

COVID-19

Cumulative data derived from three collection periods for the Canadian Community Health Survey (CCHS) from June 2021 to February 2022 showed that 93% of the general population received at least one dose of the COVID-19 vaccine (Health Canada, 2024). In contrast, only 81% of those identifying as First Nations living off reserve and 87% of those identifying as Métis had received at least one dose over these three periods. A separate study using CCHS data from June 2021 to June 2022 showed similar results, with 94% of survey respondents 18 years and older receiving at least one dose of the vaccine (Guay et al., 2023). However, the proportion of respondents not vaccinated over this period was 14% for off-reserve First Nations and 10% for Métis, compared to 6% for the general population. Other studies have shown similar rates of COVID-19 vaccination for

Indigenous respondents, although again, the differences were not considered statistically significant due to small sample sizes (Guay et al., 2022).

Using provincial administrative data from the Manitoba healthcare system from February 2020 to December 2021, Nickel et al. (2024) found that prioritization of Indigenous populations for vaccination helped status First Nations residents get their first vaccine dose 15.5 days sooner than all other people in Manitoba and their second dose 13.9 days sooner. However, while the vaccination rate for status First Nations people was similar to all other people in Manitoba at the beginning and end of this period, the rate peaked at a much higher rate for non-First Nations people compared to status First Nations people (312.12 vs. 216.62 vaccinations per 1000 person-months, respectively). Vaccine inequality was pronounced for the third doses of the



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COVID-19 vaccine, with 45% of the Manitoba population receiving a third dose by April 2022 compared to 29% of First Nations people living on reserve and 21.5% of First Nations people living off reserve (Chief Provincial Public Health Officer [CPPHO], 2023). Whether these differences in third-dose vaccination among First Nations people are caused by increased vaccine hesitancy, increased barriers in accessing a booster shot, or some other reason is unknown and further research is needed in this area.

Urban Indigenous people and off-reserve First Nation people appear to have faced greater barriers to accessing the COVID-19 vaccine. Findings from a study of COVID-19 vaccination rates among urban Indigenous people

living in Toronto and London, Ontario found that vaccination rates ranged from 16.2% to 22.3% lower in the Indigenous cohort than the corresponding local and provincial rates (Smylie et al., 2022). In Manitoba, 82.9% of the total provincial population aged 5 and older received two doses of the COVID-19 vaccine by April 7, 2022 compared to 89.4% of First Nations people living on reserve and 70.4% of First Nations people living off-reserve (CPPHO, 2023).

Interest in receiving a COVID-19 vaccine varied even within Indigenous groups. For example, Budgell (2021) highlights the wide variation in COVID-19 vaccination rates across Inuit Nunangat.⁵ During the summer of 2021, COVID-19 vaccination

rates were highest in Makkovik, Labrador with 97.6% of the community receiving at least one dose of the vaccine and 86.6% fully vaccinated. Vaccination rates were lowest in Nunavik, with only 46.2% of the people in the region receiving at least one dose and 35.2% fully vaccinated. Budgell attributed the strong desire of Labrador Inuit to receive the COVID-19 vaccine to stronger historical memory of the Spanish influenza epidemic of 1918-19, while lower vaccination rates in other Inuit communities and regions were attributed to factors such as mistrust of mainstream health care, unsafe access to care, and misinformation from social media.



⁵ Inuit Nunangat refers to the traditional homelands of the Inuit in Canada and is comprised of the four northern regions of the Inuvialuit Settlement Region in the northwestern part of the Arctic, Nunavut, Nunavik in northern Quebec, and Nunatsiavut in Newfoundland and Labrador.



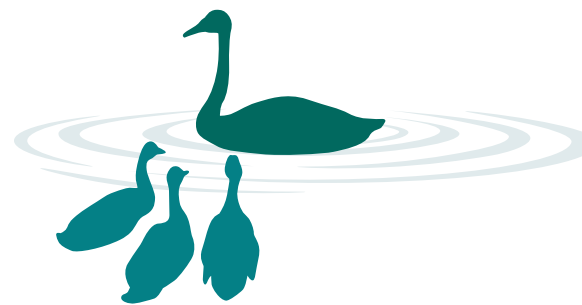
2009 H1N1 influenza

There are gaps in knowledge regarding 2009 H1N1 influenza vaccine coverage for Indigenous populations, though some studies have shown fairly high rates of vaccination among Indigenous people in Manitoba. In a qualitative study examining H1N1 vaccination in four communities in Manitoba, 56% of the Métis participants had received the vaccine (Driedger et al., 2015). In comparison, the official vaccination rates for First Nations and the general population in Manitoba were 60% and 37% respectively (Government of Manitoba, 2010), while rates ranged from 32-45% of the general population in other provinces and territories (Boerner et al., 2013).

Xiao and Moghadas (2015) found that in Manitoba, individuals who identified as First Nations were almost three times more likely to receive the H1N1 vaccine than non-First Nations individuals, while for First Nations people, on-reserve residency was associated with a more than 5-fold higher odds of vaccination compared to off-reserve residency. The higher uptake of H1N1 vaccine among First Nations people living on reserve may potentially be attributed to an increased risk for severe H1N1 influenza-related outcomes, including hospitalization (Green et al., 2013; Zarychanski et al., 2010) and death (Boggild et al., 2011).

Seasonal influenza

Data on vaccination rates for seasonal influenza among Indigenous populations are not routinely collected in national data collection processes. This can make it challenging to assess trends in uptake and the effectiveness of vaccination policies and initiatives. Data from the 2017-2018 CCHS revealed a similar proportion of Indigenous and non-Indigenous people who reported having had a seasonal flu vaccine (55% and 59%, respectively) (as cited in Coburn, 2021). Likewise, data from the 2013-2014 CCHS indicated that 68.1% of non-Indigenous respondents had not been vaccinated against seasonal influenza compared to 72.2% of First Nations, 70.9% of Métis, and 70.4% of Inuit respondents (Roy et al., 2018). In this study, factors associated with non-vaccination in all groups included being young, having a lower level of education, and not having a family doctor, while excellent self-perceived health and belief that the vaccine is not necessary were commonly reported reasons for non-vaccination.



Vaccine hesitancy

Research suggests that most Indigenous people have positive perceptions of vaccines, a good understanding of their benefits, and feel they are safe. The vast majority of Indigenous participants in a variety of surveys, including the CCHS, the cNICS, and other sources, indicated their intention to get vaccinated for pandemic events and ensure their children are routinely vaccinated (Chen et al., 2023; Coburn, 2021; Guay et al., 2022; Humble et al., 2023; MacDonald et al., 2022; Manca et al., 2022; Tarrant & Gregory, 2003). Nevertheless, just as with some non-Indigenous people, vaccine hesitancy has also been identified as a factor that may be influencing the decisions of some First Nations people, Inuit, and Métis people to get vaccinated.

Crowdsourcing data collected by Statistics Canada (2021) in the Fall of 2020 indicated that 77.1% of non-Indigenous people were very or somewhat

willing to receive the COVID-19 vaccine, compared to 71.9% of individuals who identified as Indigenous, 74.4% of First Nations people living off reserve, 67.8% of Métis, and 73.2% of Inuit; however, these differences were not considered statistically significant.⁶ Gerretsen et al. (2021) assessed COVID-19 vaccine hesitancy among racialized populations from Canada and parts of the United States using a web-based survey platform. They found significantly higher vaccine hesitancy among Indigenous populations compared to White populations, even after controlling for demographic factors. While 67.4% of White respondents indicated they were “very probably” to “definitely” likely to get a COVID-19 vaccine, only 43.7% of Indigenous respondents did so. Chen and colleagues (2023) examined parental vaccine hesitancy and vaccine refusal in Canada, using data from the 2017 cNICS. They found that while 24.6% of Indigenous parents were somewhat vaccine-hesitant

compared to 19.7% of non-Indigenous parents, this difference was not statistically significant. Instead, lower household income and higher number of children in the household were the key factors associated with vaccine hesitancy.

Both historical and contemporary influences can contribute to vaccine hesitancy among Indigenous people. Contemporary influences include, for example, a lack of knowledge about diseases and prevention, religious beliefs, preferences for traditional healing practices and traditions, beliefs about the severity of a disease and personal risks, and medical misconceptions about vaccine safety, efficacy, and development timelines (Manca et al., 2022; Sullivan et al., 2023). Historical influences, including past medical experimentation on Indigenous people and lack of trust in governments or pharmaceutical companies, may also play a role in vaccine hesitancy for a small segment of the Indigenous population (Fleming et al., 2020; Sullivan et al., 2023).



⁶ The sample size for Inuit was very low, so caution should be exercised in interpreting this data.

Barriers to vaccination

A number of barriers to vaccine uptake have been identified among Indigenous populations. These can be categorized as system/environmental or institutional factors, social factors, and intra-personal factors. Systemic, environmental, or institutional factors include:

- Lack of or ineffective communication about the importance of vaccination and the safety of vaccines (Driedger et al., 2015);
- Historical and colonial factors leading to longstanding suspicion of government initiatives and mistrust in mainstream healthcare institutions (Driedger et al., 2015; Fleming et al., 2020; Newman et al., 2011; Poirier et al., 2021; Simms et al., 2023);
- Entrenched colonial processes and practices such as “one child, one appointment” policies and vaccination services that are not inclusive or accessible (MacDonald et al., 2022);
- Resource limitations and gaps in infrastructure and accommodations that make accessibility a challenge, especially in small, often remote, geographic locations and regions that are serving predominantly Indigenous populations (Aylsworth et al., 2022; Ilesanmi et al., 2022);
- Lack of community capacity to conduct vaccine campaigns (ISC, 2021);
- Vaccine campaigns that come across as patronizing, alienating, or stigmatizing (Corston et al., 2023);
- Technology and internet access barriers to booking vaccination appointments and attaining vaccine information (Aylsworth et al., 2022; Simms et al., 2023);
- Language barriers, lack of identification documentation, travel challenges (e.g., lack of public transportation, lengthy travel times), and additional expenses due to time loss and childcare (Aylsworth et al., 2022; MacDonald et al., 2023);
- Lifestyle factors, such as multiple household moves, large number of children in the household, and single marital status (Bell et al., 2015);
- Concerns about police or security presence at vaccination sites (Aylsworth et al., 2022);
- Rural residence (MacDonald et al., 2016; Rafferty et al., 2018);
- Logistical challenges with vaccine roll-out and availability, such as differences in eligibility across local health units or lack of domestic vaccine production (ISC, 2021; Simms et al., 2023); and
- Vaccine cost (Fleming et al., 2020; Newman et al., 2011).

Social factors include social media forums and stories circulating in the community that present misinformation, discourage immunization, and foster anti-immunization attitudes in the community (Driedger et al., 2015; Fleming et al., 2020; Tarrant & Gregory, 2003). They also include family members and friends who discourage vaccination (Driedger et al., 2015), children's fear of vaccination, time constraints, and childhood illnesses (Tarrant & Gregory, 2003). Additionally, having several children in the household can act as a barrier to maintaining children's immunization schedules (MacDonald et al., 2016; Rafferty et al., 2018).

There are also several intrapersonal factors that can act as a barrier to vaccination uptake. These include:

- Lack of knowledge and misperceptions about vaccine-preventable diseases, the efficacy and safety of vaccines, and the need for vaccines among certain populations (Driedger et al., 2015; Gerretsen et al., 2021; Poirier et al., 2021; Stratoberdha et al., 2022; Tarrant & Gregory, 2003);
- Low personal perception of risk of infection or threat of severe outcomes (Simms et al., 2023);
- Vaccine mistrust, hesitancy, and anti-vaccine sentiments (Corston et al., 2023; Fleming et al., 2020; Ilesanmi et al., 2022; Newman et al., 2011; Poirier et al., 2021; Stratoberdha et al., 2022);
- Potential disease-related stigma (Fleming et al., 2020; Newman et al., 2011; Poirier et al., 2021; Stratoberdha et al., 2022);
- Unpleasant previous experiences with vaccination processes or fear of needles (Simms et al., 2023; Stratoberdha et al., 2022; Tarrant & Gregory, 2003);
- Perceptions that alternatives (e.g. homeopathic medicine, use of vitamin D, natural immunity) are just as effective as vaccination (Gerretsen et al., 2021; Simms et al., 2023);
- Preferences for Traditional medicines over Western medicine (Newman et al., 2011); and
- Concerns about commercial profiteering (Gerretsen et al., 2021).

Facilitators of vaccination

Researchers have also identified facilitators of vaccine uptake in Indigenous communities, which can also be categorized into systemic, environmental, and institutional factors; social factors; and interpersonal factors. Systemic, environmental, and institutional factors include:

- Good communication on the importance of vaccination and the safety of vaccines, with fact-based and trusted information (Driedger et al., 2015; Simms et al., 2023);
- Prioritization of Indigenous populations (Simms et al., 2023);
- Prevention activities undertaken by Indigenous representative organizations (King et al., 2022; Simms et al., 2023);
- Public health measures that restrict travel without vaccination (Simms et al., 2023);⁷
- No cost vaccines and publicly funded vaccination programs (Rafferty et al., 2018);
- Use of same brand of vaccine when multiple doses are required (ISC, 2021);
- Implementation of Indigenous-led, culturally safe and appropriate vaccination efforts, including offering food and conducting vaccine clinics in a culturally relevant setting (Clark et al., 2024; King et al., 2022);
- Greater access to holistic supports, such as assistance with travel and childcare (Rattlesnake & Morrin, 2023); and
- Receiving at least the first dose of vaccine within one's home community rather than elsewhere (MacDonald et al., 2023).

Social factors that can facilitate vaccine uptake in Indigenous communities include social media forums and public discourse that can encourage people to get vaccinated (Driedger et al., 2015; Simms et al., 2023). They also include:

- Supportive family members, friends, and community environments (Driedger et al., 2015; Poirier et al., 2021; Simms et al., 2023);
- Recommendations or guidance from a health professional (Driedger et al., 2015; Poirier et al., 2021);
- Increased exposure to people who have acquired vaccine-preventable diseases (Tarrant & Gregory, 2003);
- Positive interactions with healthcare providers in the context of accessing vaccine information, vaccinations specifically and health care generally (Fleming et al., 2020; King et al., 2022; Simms et al., 2023; Tarrant & Gregory, 2003); and
- Therapists included and present at vaccine clinics (Simms et al., 2023).

⁷ Wanting to travel may be a motivator for getting vaccinated.

There are also several intrapersonal factors that can facilitate improved vaccine uptake among Indigenous populations. These include:

- Altruism – wanting to protect others (Simms et al., 2023);
- Personal prioritization of disease prevention (Poirier et al., 2021);
- Habitual behaviour and previous acceptance of other vaccines (Simms et al., 2023);
- Adequate knowledge of vaccines and trust in health care systems (Poirier et al., 2021; Simms et al., 2023);
- High personal perception of risk (Driedger et al., 2015; Simms et al., 2023); and
- Previous personal experience with severe health outcomes of preventable disease (Poirier et al., 2021).

Integrating what can facilitate vaccine uptake and confidence in First Nations, Inuit, and Métis populations into the development of vaccination programs and the creation of related educational resources is key to overcoming the barriers and challenges to vaccination in these populations.

Conclusion

With the exception of a decline related to the COVID-19 pandemic, rates of vaccination coverage have been increasing steadily over time among First Nations, Inuit, and Métis populations. Nevertheless, rates vary across Indigenous populations and inequities still exist. These inequities are largely attributed to socio-economic marginalization of Indigenous Peoples in Canada. Addressing these health inequities requires attention to improving vaccine uptake among First Nations peoples, Inuit, and Métis peoples. This fact sheet highlighted several areas that can build on a strong foundation of vaccine uptake behaviour in Indigenous contexts, including addressing knowledge gaps about vaccine-preventable diseases and vaccine efficacy and safety, increasing the accessibility of vaccination sites, and improving healthcare provider-patient relations.

Information about vaccine-preventable diseases and vaccine efficacy and safety must be communicated more effectively in Indigenous communities to address knowledge gaps and misinformation and to foster an environment that supports vaccination among family, friends, and community. The accessibility of vaccination sites can be improved by expanding and diversifying sites and availability, increasing the use of mobile and “in-house” vaccination outreach services, providing transportation for those without vehicles or living in remote locations, and ensuring vaccination sites are culturally appropriate and respond to client needs (Aylsworth et al., 2022). It is also clear that for some Indigenous people, a lack of trust in mainstream healthcare institutions may be a factor in vaccine hesitancy. Addressing this mistrust will require systemic efforts to promote culturally safe vaccination processes, especially through First Nations, Inuit, and Métis control over vaccination services, and to ensure healthcare providers are able to exercise cultural humility and treat Indigenous patients with respect and care.

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