Awaashishak Kakiipimicitahontwa Tipacimowin

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Childhood Vaccination Coverage in the Sioux Lookout Area First Nations

2024 report

Sioux Lookout First Nations Health Authority

December 2024

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Data Sources

Data presented in this report are derived from the vaccinations database within Mustimuhw Information Solutions (MIS), which is housed at the Sioux Lookout First Nations Health Authority.

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Ownership

The data in this report is owned collectively by the First Nations in the Sioux Lookout area with SLFNHA acting as their data steward.

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Message From

Janet Gordon

Vice President, Community Health

The Sioux Lookout First Nations Health Authority (SLFNHA) has long advocated for the creation of a public health system that truly reflects the unique challenges and strengths of our communities. This report brings urgent attention to a critical issue: significant gaps in immunization coverage that jeopardize the health and well-being of our children, families, and communities. These gaps are not isolated but are deeply rooted in the historical inequities in healthcare access and investment that our communities have endured for generations.

At the heart of addressing these challenges is a renewed focus on community health. Strong, community-driven solutions are essential to overcoming barriers and fostering sustainable change. Investing in community health workers is a cornerstone of this effort. These trusted individuals play a pivotal role as educators, navigators, and advocates, ensuring community members are informed about the importance of vaccines, providing reminders, assisting with appointment bookings, and offering culturally relevant health education tailored to the unique needs of each community.

However, addressing immunization coverage gaps is only one piece of the puzzle. To achieve meaningful progress, we must commit to long-term investments in health infrastructure, adopt innovative tools for data collection and vaccine tracking, and secure stable funding for community-based health programs. By placing community health at the forefront of these initiatives, we not only strengthen public health systems but also empower communities to take control of their health and well-being.

Culturally grounded engagement strategies are equally critical to this effort. Building trust within our communities and addressing the specific needs of individuals are key to fostering participation and improving health outcomes. These tailored approaches are instrumental in bridging the gap between systemic inequities and community resilience.

This report serves as both a call to action and a roadmap for change. By focusing on community health as the foundation of a stronger public health system, we can address health disparities, improve access to equitable care, and promote wellness for all. The time for action is now. Together, we can create a healthier, stronger, and more equitable future—one that upholds the dignity, resilience, and strength of our communities.

Message From

Dr. Lloyd Douglas

Public Health Physician

Childhood immunization is a cornerstone of public health, standing as one of the most cost-effective and impactful strategies to prevent disease and promote wellness. Despite its critical importance, significant disparities in immunization coverage persist across Sioux Lookout area First Nations (SLaFNs) communities, reflecting systemic health inequities, logistical challenges, and insufficient support for community-based health initiatives. These gaps compromise the health of our children and youth threaten the broader wellbeing of our communities.

This report underscores the urgency of addressing these disparities and calls for coordinated public health policies and actions to ensure equitable access to routine immunizations. Every missed vaccination is a missed opportunity to safeguard individual and collective health.

Public health policies must focus on long-term investments in health infrastructure, integrating catch-up vaccination programs into routine care, and strengthening community-based data systems to track progress. Empowering community health workers through training, resources, and culturally relevant engagement strategies is essential.

Advanced tools like the Mustimuhw Information Solutions system can enhance accurate and timely vaccination tracking. Moreover, ensuring access to immunization records on and off-reserve is fundamental to improving vaccine coverage and continuity of care. Digital health innovations, such as secure online portals and mobile applications, can enable clients to view and manage their immunization records with ease. These platforms provide personalized vaccination schedules, automated reminders, and updates on public health campaigns. For families in remote areas, offline functionality and community-led technical support ensure accessibility, even in low-connectivity regions.

The integration of interoperable health information systems is another essential innovation. Seamless data sharing between on-reserve clinics, urban healthcare facilities, and public health authorities ensures immunization records remain up-to-date and accessible.

I believe, sustainable progress requires collaboration among government bodies, healthcare organizations, and communities, with policies guided by First Nations governance and values. Achieving health equity in immunization is both a moral and public health imperative. By prioritizing equitable access to vaccines, investing in community-driven approaches, and leveraging innovative tools, we can build a healthier, stronger future for generations to come.

Let us seize this opportunity to act collectively and ensure that every child in our communities receives the protection they deserve.

Contents

Acronyms/Abbreviations

ACW	Approaches to Community Wellbeing
cEMR	Community Electronic Medical Record
cNICS	The Childhood National Vaccination Coverage Survey
DTaP	Diphtheria-Tetanus-Pertussis vaccine
DTwP	Diphtheria and tetanus toxoids vaccine
FNIHIS	First Nations and Inuit Health Information System
HB	Hepatitis B vaccine
Hib	Haemophilus Influenzae vaccine
HPV	Human Papillomavirus vaccine
IPV	Inactivated Polio vaccine
ISC	Indigenous Services Canada
Men-C-C	Meningococcal Conjugate C vaccine
Men-C-ACYW	Meningococcal Conjugate Group A, C, Y, W vaccine
MIS	Mustimuhw Information Solutions
MMR	Measles, Mumps and Rubella vaccine
MMRV	Measles, Mumps, Rubella, and Varicella vaccine
NIS	National Immunization Strategy
Pneu-C-13	Pneumococcal Conjugate 13 vaccine
Rot-1/Rot-5	Rotavirus vaccine
SLaFN	Sioux Lookout area First Nations
SLFNHA	Sioux Lookout First Nations Health Authority
Td	Tetanus-Diphtheria vaccine
Tdap	Tetanus-Diphtheria-pertussis vaccine
Var	Varicella (Chickenpox) vaccine
VPD	Vaccine Preventable Disease

Executive Summary

Background: SLFNHA seeks to improve health outcomes in 33 First Nations communities. SLFNHA's Approaches to Community Wellbeing (ACW) offers immunization services in 31 First Nations communities. Despite vaccination being a cornerstone of public health, systemic barriers have led to disparities in immunization coverage in these communities compared to non-First Nations populations.

Methods: This report utilized the May 2023 to April 2024 childhood vaccination coverage data. Data was downloaded from SLFNHA's Mustimuhw Information Solutions (MIS). Vaccination coverage was assessed across five age groups (1, 2, 7, 12, and 17 years) to align with provincial reporting methods, enabling comparisons against both Ontario rates and national goals for vaccination. Data presented by age group and vaccine type provided insights into coverage rates and gaps.

Findings: The findings indicate that immunization rates among children in the Sioux Lookout area are significantly lower compared to Ontario and Canada vaccination coverage rates and national goals, particularly in the 1-year-old and 2-year-olds, where coverage rates are as low as 43.5% for certain vaccines. Coverage disparities are also evident for 7-year-olds, with only 36% completing the recommended five doses of tetanus, pertussis, and diphtheria vaccines. Immunization rates for 12-year-olds also continue to be a concern, especially regarding booster doses and catch-up vaccines. 17-year-old group also show low vaccination rates, reflecting challenges in reaching older children. Overall, substantial declines in multi-dose vaccine completion were observed, with all age groups falling well short of the recommended national coverage targets.

Conclusion: This study underscores the need for tailored interventions to boost dose completion and overall immunization rates. Addressing systemic barriers to timely vaccinations, enhancing the usability of MIS by ensuring accurate and updated records for both on reserve and off reserve individuals, and incorporating community voices into health planning are essential steps forward.

To address the gaps, the study suggests strategies such as culturally tailored outreach, enhanced education and awareness, strengthened school-based programs, mobile vaccination clinics, and improved data collection. A comprehensive immunization strategy and further research are also recommended to improve vaccination coverage across these age groups.

"This study underscores the need for tailored interventions to boost dose completion and overall immunization rates. Addressing systemic barriers to timely vaccinations, enhancing the usability of MIS by ensuring accurate and updated records for both on reserve and off reserve individuals, and incorporating community voices into health planning are essential steps forward."

Background

SLFNHA is a First Nations-governed organization committed to improving the health outcomes of 33 First Nations communities in the Sioux Lookout area. Its public health department, ACW, that works to prevent illness, promote and protect health, and build public health capacity. A key area of ACW's work is ensuring the effectiveness of immunization programs to protect against vaccine-preventable diseases (VPDs), as vaccination is a cornerstone of public health.

Vaccination coverage, defined as the proportion of people in a community who are adequately vaccinated against VPDs, is vital for maintaining healthy communities. Immunization is an essential public health service and a pillar of strong public health systems. It prevents disease outbreaks, reduces disease impacts, and saves lives. However, many barriers have hindered timely vaccinations in the Sioux Lookout area First Nations. These barriers place these communities at an increased risk of large-scale VPD outbreaks compared to non-First Nations communities.

Despite the vital protection vaccines offer, inequities within the health and public health systems continue to leave First Nations communities without equitable level of care, leading to significant gaps in immunization coverage. Children and youth in these communities remain particularly vulnerable, underscoring the urgency to close immunity gaps and develop strong, community-based immunization programs.

Historically, vaccination records were input into the First Nations and Inuit Health Information System (FNIHIS), managed by Indigenous Services Canada (ISC). Since the 1990s, SLFNHA has supported this effort, but as the system became outdated, assessing vaccine coverage rates became increasingly challenging. In response, the Sioux Lookout area First Nations Chiefs-in-Assembly passed Resolution 18-13 in 2018, mandating SLFNHA to establish a new immunization repository for the communities. This new system, Mustimuhw Information Solutions, a community-based electronic medical record (cEMR), was created to modernize data collection and improve the accuracy of vaccination records.

SLFNHA's Community Wellbeing Nurses (CWNs) are essential in supporting immunization events across the communities. They play a hands-on role, from preparation and administration of vaccines to post-clinic cleanup. Beyond their clinical duties, they are integral to community education, delivering tailored information about vaccines, addressing concerns from parents and caregivers, and supporting schools and organizations in organizing clinics. They ensure that these services are culturally sensitive and widely accessible. Their outreach facilitates trust-building and understanding in vaccination programs.

This report incorporates the most recent data from 2024, providing an up-to-date overview of immunization coverage and challenges within Sioux Lookout area First Nations. This report is crucial in supporting the continued efforts to maintain high vaccination coverage and protect the health of these First Nations communities.

> Despite the critical protection that vaccines offer, inequities in the health and public health systems continue to leave First Nations communities without the same level of care, leading to significant gaps in immunization coverage.

Creating this Report

This report has been developed for the Sioux Lookout area First Nations, building upon the foundation laid by SLFNHA's ACW in its initial vaccination coverage report from 2022. Serving as an updated continuation, this report incorporates select content from the 2022 report while offering new data, analysis, and insights.

This report serves as a vital resource for planning, securing funding, and supporting advocacy efforts. It aims to inform community leadership, members, health workers, and planners about the state of vaccination coverage in the region, highlighting current challenges while identifying opportunities to enhance immunization efforts and improve overall public health outcomes.

Routine Childhood Vaccinations Included in this Report

Some vaccine-preventable diseases (VPDs) could lead to disability or death. When children and youth get vaccinated (immunized), they are protected from VPDs. The VPDs discussed in this report include:

Diphtheria
Tetanus
Pertussis
Poliomyelitis (Polio)
Haemophilus influenzae
Invasive pneumococcal disease
Invasive meningococcal disease
Rotavirus
Measles
Mumps
Rubella
Varicella (Chickenpox)
Hepatitis B
Human papillomavirus

To protect against VPDs, there are many vaccinations for children and youth to receive. Some of the vaccinations protect against one disease, while others are made to protect against multiple diseases.

Limitations with the Data Sources

- Vaccinations administered off-reserve in cities and towns are not included in this report. Since SLFNHA's Immunization Repository is not integrated with the provincial vaccination record-keeping system. The absence of this data may lead to discrepancies between the vaccination coverage rates presented in this report and the actual rates.

- The denominators in this report are based on clients registered in the SLFNHA electronic medical record (EMR), Mustimuhw, or MIS, typically following health services or vaccinations. Children or youth not registered in the EMR, or those who accessed services elsewhere, are excluded. This may result in calculation errors for coverage rates.

- The staff at the nursing stations complete the consent and vaccination forms for each client and fax them to the Immunization Repository at SLFNHA. The SLFNHA staff then enter the data into MIS. As a result, there may be delays in data entry, missing data, or potential errors during data input. In some situations, incomplete information for certain individuals may also prevent their inclusion from the calculation of coverage rates, which could slightly impact the overall vaccination rates.

- The report presents vaccination rates for specific age groups, which are not cumulative. For example, rates for 12-year-olds reflect vaccinations given at that age and do not include earlier ages. The intent of the report is to give a picture of vaccines given at each age group, even if there are no vaccine criteria for a specific age group of a particular vaccine.

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- There are some discrepancies in the data regarding vaccination dose numbers, likely due to data quality issues. To address this, we used calculations to estimate the dose numbers. As a result, there may be some minor errors in the estimated dose numbers.

How we Analyzed the Data

This report analyzes vaccination coverage across five age groups of children and youth based on their birth year: 1 year old, 2 years old, 7 years old, 12 years old, and 17 years old. Public Health Ontario (PHO) annually reports vaccination coverage for school-aged children (ages 7, 12, and 17). This report aligns with PHO's methodology to compare the vaccination status of communities served by SLFNHA against provincial averages, highlighting areas for improvement. The report presents data in two ways:

- By age group: Vaccination coverage rates are broken down by each age group.
- By vaccination type: Coverage rates across all age groups for comparison.

To analyze the data, fully vaccinated rates of children and youth were examined. "Fully vaccinated" means that children and youth have received all recommended doses of a vaccine or vaccines they are eligible to receive within their specific age group.

Full vaccination coverage rates for each vaccine at specific ages are presented as percentages in this report. Percentages are calculated by dividing the number of children and youth who received all doses of vaccination by the total number of children and youth who were eligible for the vaccination and then multiplying by 100. This indicates how many children and youth in a group of 100 received a full dose of a specific vaccination at a certain age when they were eligible to receive it at a specific point in time.

$$\text{Percentage of children and youth fully vaccinated} = \frac{\text{Number of children and youth in the age group who received all doses they were eligible for}}{\text{Number of children and youth in the age group}} \times 100$$

To conduct these calculations, both the denominator (number of children and youth in the age group) and the numerator (number of children and youth who received all doses they were eligible for) needed to be calculated. Appendix 1 shows population estimates by age group for the denominator.

In this report, confidence intervals for the proportion estimates are not included. The reason is that the calculation is based on the data recorded for the entire population, rather than a sample of the population.

Beyond the Numbers

Understanding Community Experiences in Health Reporting

The information in this report presents a western numerical way of measuring health indicators. By focusing on numbers, it misses the stories of the people being assessed. We acknowledge that it does not capture the experiences of individuals getting immunized or the illnesses community members face. Therefore, efforts should be made to listen to community members' perspectives and include their experiences and views in the report.

This report highlights differences between vaccination coverage in First Nations communities and provincial or national goals. However, it does not address the health inequities behind these differences.

Using this Report

The results in this report underscore the necessity of improving outreach and education to caregivers to inform them of the importance of vaccinations for children in order to improve vaccine uptake. This report can be used to:

- **Understand** - understand the current uptake of vaccinations and assess risks for outbreaks. Engage community members to understand their awareness, knowledge, and hesitancies around vaccination. It allows for the comparison of regional immunization rates against provincial benchmarks. It provides data-driven insights to help improve vaccine uptake in the Sioux Lookout area First Nations. It helps highlight specific age groups, with lower vaccination rates to prioritize interventions.

- **Plan** – use the information in this report to plan prevention and health promotion efforts. This report can help identify diseases that the region is vulnerable to that we need to develop education programs for and prepare for outbreaks. It can also help identify what age groups need to be targeted in program efforts.

- **Monitor and evaluate** – the numbers in this report can serve as a baseline measure of where the region is today. SLFNHA will produce updated reports in the future to measure progress in vaccination coverage, which can be used to evaluate programming and initiatives. It also helps aassess the effectiveness of immunization programs and identify areas for improvement.

- **Advocate** – the numbers in this report can be used to strengthen funding reports or as a tool to advocate for improved services, increased funding, and access to complete vaccination records.

- **Collaboration and Community Engagement** – Ensures collaboration and community action to increase immunization coverage in Sioux Lookout area First Nations.

Vaccine Preventable Diseases

Tetanus (Lockjaw)

Tetanus (also known as lockjaw) is an infection spread by a bacterium. The bacterium lives in dirt, soil, and dust, but can also be found in human and animal feces. The infection affects the nerves that control body muscles. They become stiff and painful and make swallowing and breathing difficult. Without proper hospital treatment, tetanus can be fatal.[9]

Diphtheria

Diphtheria is a serious bacterial infection of the nose, throat, and skin. It causes sore throat, fever, and chills. It can be complicated by breathing problems, heart failure, and nerve damage. It is most often passed to others through coughing and sneezing.[9]

Pertussis (Whooping cough)

Pertussis (also known as whooping cough) is an acute infection of the respiratory tract caused by the pertussis bacteria. Children and youth who get this disease have spells of violent coughing. This cough can cause them to vomit or stop breathing for a short period of time. The cough can last for weeks and makes it hard for a child to eat, drink, or even breathe. Pertussis can also cause brain damage, seizures, and death. These problems happen most often in babies. Pertussis spreads very easily from an infected person to others through coughing or sneezing.[9]

Protection against tetanus, diphtheria, and pertussis requires 3 different vaccinations: 4 doses of DTaP-IPV-Hib, 1 dose of DTaP- IPV, and 1 dose of DTaP for a total of 6 doses by age 17 .[9]

Haemophilus influenza type b (Hib)

The most common haemophilus influenza is haemophilus influenza type b (Hib). People spread haemophilus influenza to others through respiratory droplets. Hib was the most common cause of bacterial meningitis in children two months to five years of age. Meningitis is a serious infection of the fluid and lining that cover the brain and spinal cord. Meningitis can cause brain damage, learning and developmental problems, deafness, and blindness. The Hib germ also causes a serious infection of the throat near the voice box, and can also cause infection of the lungs (pneumonia) and bone and joint infections.[9]

Protection against Hib requires 4 doses of DTaP-IPV-Hib by age 7.[9]

Polio

Polio, or poliomyelitis, is a disabling and life-threatening disease caused by the poliovirus. People can get infected from drinking water or eating food with the polio germ in it. It can also be spread from person to person. This disease can cause nerve damage and paralyze a person for life. It can paralyze muscles used for breathing, talking, eating, and walking. It can also cause death.[9]

Protection against polio requires 4 doses of DTaP-IPV-Hib and 1 dose of DTaP-IPV by age 7.[9]

Invasive pneumococcal disease (IPD)

IPD is an infection caused by a type of bacteria called streptococcus pneumoniae (or pneumococcus). This type of bacteria can cause pneumonia (lung infection), bacteraemia (infection of the blood), meningitis (infection of the lining of the brain and spinal cord), or ear infections (otitis media). Pneumonia, bacteraemia, and meningitis can sometimes cause death or long-lasting complications such as deafness, especially in people with a high-risk medical condition.[9]

Protection against IPD requires 3 doses of pneumococcal conjugate (Pneu-C-13) before 2 years old.[9]

Rotavirus

Rotavirus is a common infection that causes vomiting and diarrhea in infants and children. Rotavirus is very contagious, spreading easily from children who are already infected to other infants, children, and sometimes adults. Most children are infected with rotavirus at least once by five years of age. Serious but rare symptoms commonly seen in children under two years of age include severe diarrhea, leading to hospitalization. Rotavirus infection is a major cause of visits to health care providers and hospital stays for infants and children under five years of age in Ontario. Deaths in Ontario due to rotavirus are rare.[9]

Protection against rotavirus requires 3 doses of Rot-5 or 2 doses of Rot-1 before 1 year old. The vaccine is taken orally.[9]

Meningococcal disease

Meningococcal disease is caused by bacteria known as neisseria meningitidis (commonly known as meningococcus). Meningococcal disease is a very serious infection. It occurs in people who have either met a person with meningococcal diseases or who is carrying the bacteria. Meningococcal disease occurs in two main forms. Meningococcal septicaemia, also called meningococcemia, occurs when the bacteria infect the bloodstream and cause blood poisoning. Meningococcal meningitis occurs when the bacteria infect the outer lining around the brain and spinal cord.[9]

Protection against meningococcal meningitis requires 1 dose of Men-C-C vaccination at 12 to 23 months of age and 1 dose of Men-C-ACYW in Grade 7.[9]

Measles

Measles is a highly contagious infectious disease caused by the measles virus. Measles can be a serious infection. It causes high fever, cough, rash, runny nose, and watery eyes. Measles lasts for one to two weeks. Ear infections or pneumonia (lung infection) can happen in 1 in 10 children with measles. Measles can also be complicated by encephalitis, an infection of the brain, in about 1 out of every 1,000 children with measles. Measles spreads from person to person very easily and quickly. People can get measles from an infected person coughing or sneezing around them or simply talking to them.[9]

Mumps

Mumps is a contagious disease that is caused by mumps virus. It typically starts with a few days of fever, headache, muscle aches, tiredness, and loss of appetite. Then most people will have swelling of their salivary glands. This is what causes the puffy cheeks and a tender, swollen jaw. It spreads through direct contact with saliva or respiratory droplets from the mouth, nose, or throat. Mumps can occasionally cause complications, especially in adults, including inflammation of the ovaries (oophoritis) and/or breast tissue (mastitis), inflammation in the pancreas (pancreatitis), inflammation of the brain (encephalitis), inflammation of the tissue covering the brain and spinal cord (meningitis), deafness, and inflammation of the testicles (orchitis) that may lead to a decrease in testicular size (testicular atrophy).[9]

Rubella (German measles)

Rubella is usually a mild illness in children; up to half of the infections with rubella occur without a rash. Rubella may cause fever, sore throat, swollen glands in the neck, and a rash on the face and neck. Temporary aches and pains and swelling of the joints are common in adolescents and adults, especially females, with rubella infection. Rubella can be followed by chronic arthritis (inflamed joints). It can also cause temporary blood clotting problems and encephalitis. Rubella is very dangerous in people who are pregnant. If an individual gets rubella in the early part of a pregnancy, it is very likely that their baby will develop congenital rubella syndrome and be severely disabled or die. Rubella spreads by contact with an infected person through coughing, sneezing, or talking. It can also be spread by contact with the saliva of infected people.[9]

Protection against measles, mumps, and rubella (MMR) requires 1 dose of MMR vaccination at 12 months of age and a second dose at 4-6 years of age with the Measles, Mumps, Rubella, and Varicella (MMRV) vaccination.[9]

Varicella (Chickenpox)

Chickenpox is a highly contagious disease caused by the varicella-zoster virus (VZV). It can cause an itchy, blister-like rash. The rash appears first on the chest, back, and face, and then spreads over the entire body. Chickenpox can be serious, especially in babies, adolescents, adults, pregnant individuals, and people that have a lowered ability to fight germs and sickness (weakened immune system). Serious complications from chickenpox include bacterial infections of the skin and soft tissues in children, infection of the lungs (pneumonia), infection or swelling of the brain (encephalitis, cerebellar ataxia), bleeding problems (hemorrhagic complications), bloodstream infections, and dehydration.[9]

Protection against chickenpox requires 1 dose of the Varicella vaccine at 12 through 15 months old and 1 dose at 4-6 years of age with the Measles, Mumps, Rubella, and Varicella (MMRV) vaccine.[9]

Hepatitis B

Hepatitis B is caused by hepatitis B virus that affects the liver and can cause permanent damage. It's the biggest cause of liver cancer worldwide. People with the disease often become tired, feverish, lose their appetite, and sometimes get yellow skin and eyes (called jaundice). However, some people can get the virus and not have any symptoms. That means they can infect someone else without knowing. Hepatitis B is transmitted through direct contact with infected blood or certain bodily fluids. The virus is most commonly transmitted from an infected pregnant person to their baby during childbirth, due to the blood exchange that happens during delivery. It is also transmitted through unsterile medical or dental equipment, unprotected intimate contact, or unsterile needles, or by sharing personal items such as razors, toothbrushes, nail clippers, body jewelry, etc.[9]

The Hepatitis B vaccine is provided in 3 doses. The 1st dose is recommended in Grade 7 and the 2nd dose is recommended between 4 to 6 months after the 1st dose. For children who have not received their 2nd dose prior to their 16th birthday, a 3-dose series is recommended.[9]

Human Papilloma virus (HPV)

HPV is a very common virus that is spread during sexual activity through skin-to-skin contact with an infected person. HPV can lead to different kinds of cancer. There are many different types of HPV. Some types of HPV can cause cervical, vulvar, vaginal, penile, and anal cancer. Other types can lead to skin lesions such as genital warts. Fortunately, infections from most common cancer-causing types of HPV can be prevented with the HPV vaccine.[9]

The HPV vaccine is recommended for all preteens at age 11 or 12 years (or can start at age 9 years), or everyone through age 26 years, if not vaccinated already. The HPV vaccination is given either as a 2 or 3-dose series, in the intervals of 6 months or 12 months. Those unable to begin or complete the HPV vaccination series in Grade 7 are eligible to catch-up missed doses until the end of Grade 12.[9]

Regional Vaccination Coverage by Age

This section details the results of the analysis of vaccination coverage by age. Appendix 2 provides a summary of vaccination coverage rates, grouped by age group.

1-Year-Old Age Group

For children to be considered up-to-date by age 1, they must have received:

- 3 doses of Diphtheria, Tetanus, Pertussis, Polio, and Haemophilus Influenza Type B (DTaP-IPV-Hib) vaccine
- 2 doses of Pneumococcal Conjugate 13 (Pneu-C-13) vaccine
- 2 doses of Rotavirus (Rot-1) vaccine

There is no national goal for this age group.

Key Findings

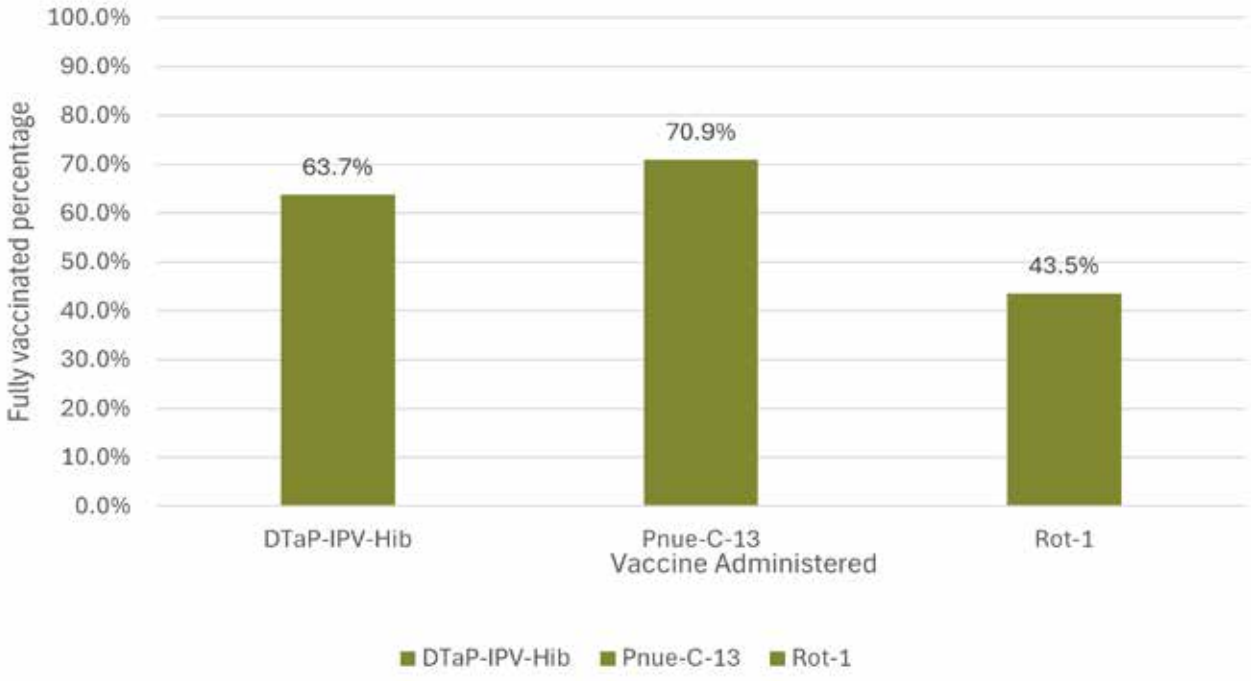

Figure 1. Percentage of Sioux Lookout area First Nations 1-year-olds up-to-date by type of vaccine

In the Sioux Lookout area First Nations communities, data reveals that only 63.7% of 1-year-olds received the recommended three doses of the DTaP-IPV-Hib vaccine, reflecting a gap in achieving full immunization. Similarly, 70.9% of children completed the two doses of the Pnue-C-13 vaccine. The Rotavirus vaccine coverage was notably lower, with only 43.5% of children receiving the recommended two doses, and a drop was observed after the first dose. These findings highlight the need for targeted immunization strategies to address the gaps in coverage.

2-Year-Old Age Group

For children to be considered up-to-date by age 2, they must have received:

- 4 doses of Diphtheria, Tetanus, Pertussis, Polio, and Haemophilus Influenza Type B (DTaP-IPV-Hib) vaccine
- 3 doses of Pneumococcal Conjugate 13 (Pneu-C-13) vaccine
- 1 dose of Meningococcal Conjugate C (Men-C-C) vaccine
- 1 dose of Measles, Mumps and Rubella (MMR) vaccine
- 1 dose of Varicella (Var) vaccine

The Canadian national goal for these vaccines within this age group is 95%.[7, 10]

Key Findings

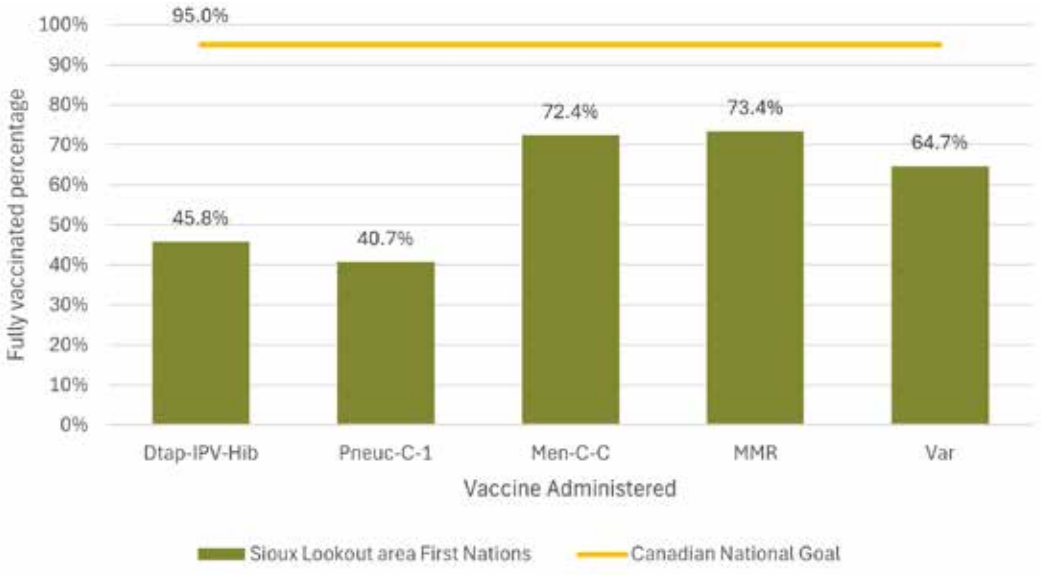

Figure 2. Percentage of Sioux Lookout area First Nations 2-year-olds up-to-date by type of vaccine

Our analysis shows that vaccination rates among 2-year-old children fall short of Canadian national targets. Only 45.8% of children received the recommended four doses of the DTaP-IPV-Hib vaccine, with a decline in completion rates as doses progressed. While uptake for the first dose was higher, subsequent doses saw a marked reduction, with the fourth dose being the least administered. For the Pneumococcal Conjugate 13 vaccine, 40.7% of children received the recommended three doses, and a similar 72.4% received the single dose of the Meningococcal Conjugate C vaccine. Coverage for the Measles, Mumps, and Rubella (MMR) vaccine reached 73.4%, while 64.7% of children were immunized with the Varicella vaccine.

These figures point to a substantial gap in achieving full immunization, especially for multi-dose vaccines where completion rates steadily decline. There is a need for targeted strategies to improve adherence to vaccination schedules and boost overall coverage rates. Interventions focusing on dose completion are critical to closing these gaps and ensuring better health outcomes for children.


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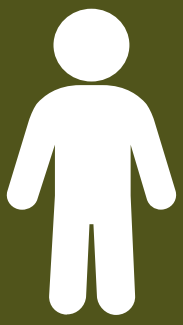
7-Year-Old Age Group



For children to be considered up-to-date by age 7, they must have received:

- 5 doses of Tetanus, Diphtheria, Pertussis, and Polio vaccine[1]
- 4 doses of Haemophilus Influenza Type B (Hib) vaccine
- 1 dose of Meningococcal Conjugate C (Men-C-C) vaccine
- 3 doses Pneumococcal Conjugate 13 (Pneu-C-13) vaccine
- 2 doses of Measles, Mumps, Rubella (MMR) vaccine
- 2 doses of Varicella (Var) vaccine

The Canadian national goal for vaccines within this age group is 95%.[7, 10]

Key Findings

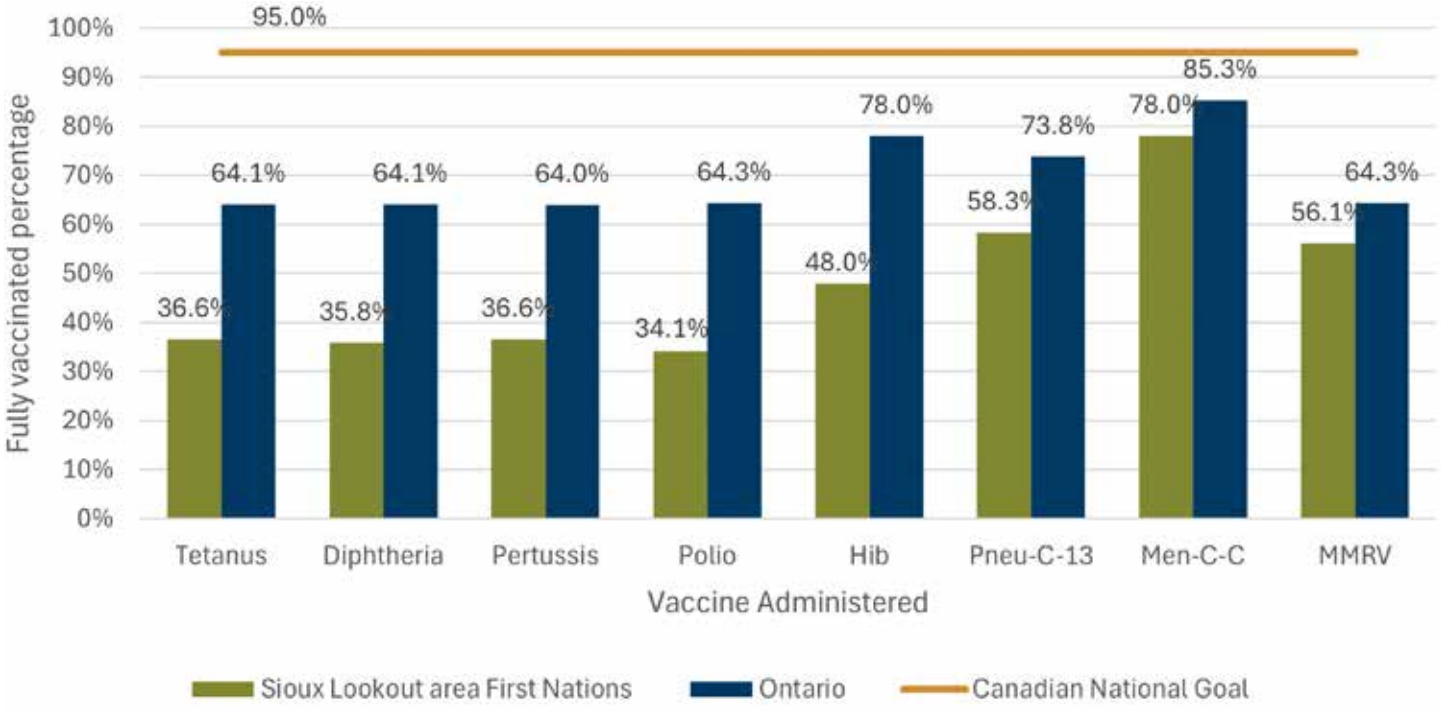


Figure 3. Percentage of Sioux Lookout area First Nations 7-year-olds up-to-date by type of vaccine

Graph 3 illustrates that vaccination rates in Sioux Lookout First Nations communities (represented by green bars) fall markedly below both Canadian National targets and Ontario provincial rates (represented by blue bars), revealing notable regional disparities.

Only about 36% of children received the recommended five doses of the Tetanus and Pertussis and Diphtheria vaccines, compared to the provincial coverage rate of 64%. Similarly, only 34.2% of children were fully vaccinated against Polio, and 48.0% received the four recommended doses of the Haemophilus Influenza type B (Hib) vaccine, compared to provincial rates of 64.3% and 78.0%, respectively.

For the Pneumococcal Conjugate 13 vaccine, 58.3% of children completed the three-dose series, slightly higher than the provincial rate of 78%. Coverage for the Meningococcal Conjugate C and Measles vaccines also lags behind, with rates of 78.1% versus the provincial rate of 85.3%, and 56.1% versus 64.3%, respectively.

The data indicates a downward trend in dose completion as children advance through multi-dose vaccine series. Single-dose vaccines, like the Meningococcal Conjugate C, showed higher completion rates, while multi-dose vaccines exhibited lower adherence, highlighting the need for targeted strategies to improve compliance with vaccination schedules.

12-Year-Old Age Group

For children to be considered up-to-date by age 12, they must have received:

- 5 doses of Tetanus, Diphtheria, Pertussis, and Polio vaccine
- 4 doses of Haemophilus Influenza Type B (Hib) vaccine
- 1 dose of Meningococcal Conjugate A, C, Y, and W (Men-C-ACYW) vaccine
- 2 doses of Measles, Mumps, Rubella (MMR) vaccine
- 2 doses of Varicella (Var) vaccine
- 3 doses of Hepatitis B (HB) vaccine
- 2 doses of Human Papillomavirus (HPV) vaccine.

There is no national goal for this age group

Key Findings

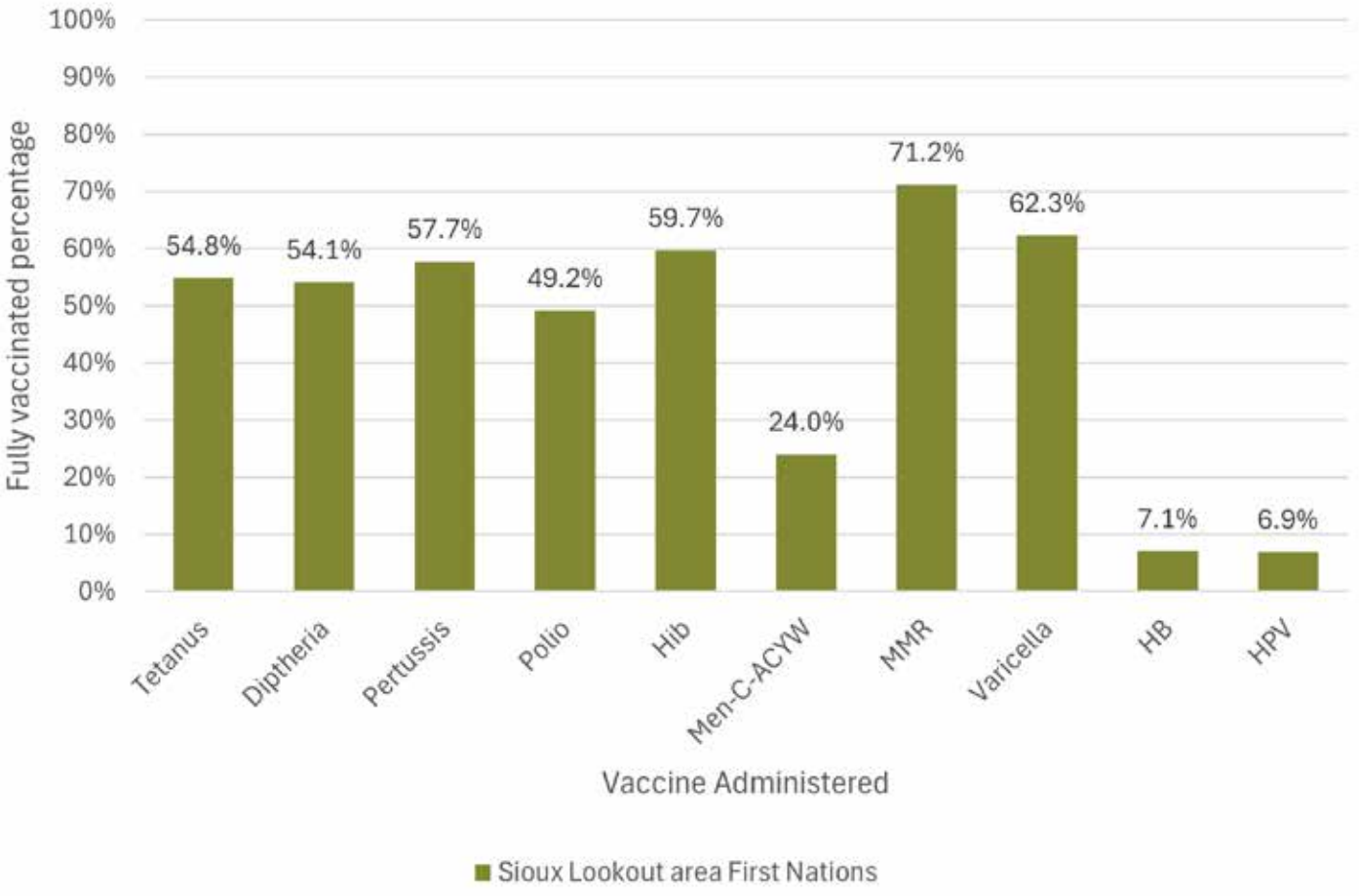


Figure 4. Percentage of Sioux Lookout area First Nations 12-year-olds up-to-date by type of vaccine

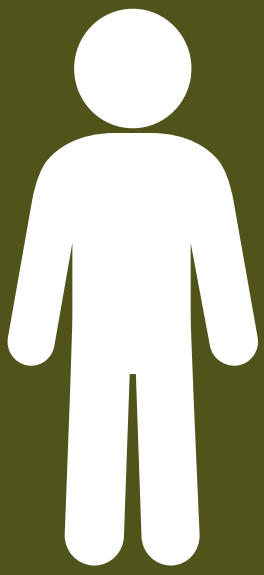
Vaccination coverage among 12-year-old children in the Sioux Lookout area First Nations communities reveals significant gaps. Only 54.8% of children have completed the recommended five doses of the Tetanus vaccine, while 54.1% have received the full five doses of the Diphtheria vaccine by the age of 12. Pertussis vaccination coverage is similarly low, with only 57.7% of children being fully vaccinated. Additionally, Polio vaccination rates show even greater concern, as only 49.2% of children have received all five doses.

For Haemophilus Influenza type B, 62.8% of children received all four doses. Only 24.0% received the recommended single dose of the Meningococcal Conjugate C-ACYW vaccine. The Measles, Mumps, and Rubella (MMR) vaccine had a coverage of 71.2% for two recommended doses, while 62.3% of children completed the Varicella full dose.

Hepatitis B vaccination rates were particularly low, with only 7.1% of children receiving recommended two or three doses. Similarly, 6.9% of children received the two recommended doses of the Human Papilloma Virus (HPV) vaccine. However, this data may be incomplete, as some children may have received this vaccine while attending school outside their communities.

These statistics underscore the need for targeted public health interventions to improve vaccination rates in Sioux Lookout area First Nations communities.

17-Year-Old Age Group



For children to be considered up-to-date by age 17, they must have received:

- 6 doses of Tetanus, Diphtheria, and Pertussis vaccine
- 5 doses of Polio vaccine
- 4 doses of Haemophilus Influenza Type B (Hib) vaccine
- 3 doses Pneumococcal Conjugate 13 (Pneu-C-13) vaccine
- 2 doses of Measles, Mumps, Rubella (MMR) vaccine
- 2 doses of Varicella (Var) vaccine
- 3 doses of Hepatitis B (HB) vaccine
- 2 or 3 doses of Human Papillomavirus (HPV) vaccine.

The Canadian national goal for DTaP and MMR vaccines within this age group is 90%.[7, 10] There are no national goals for Var and Hib for this age group.

Key Findings

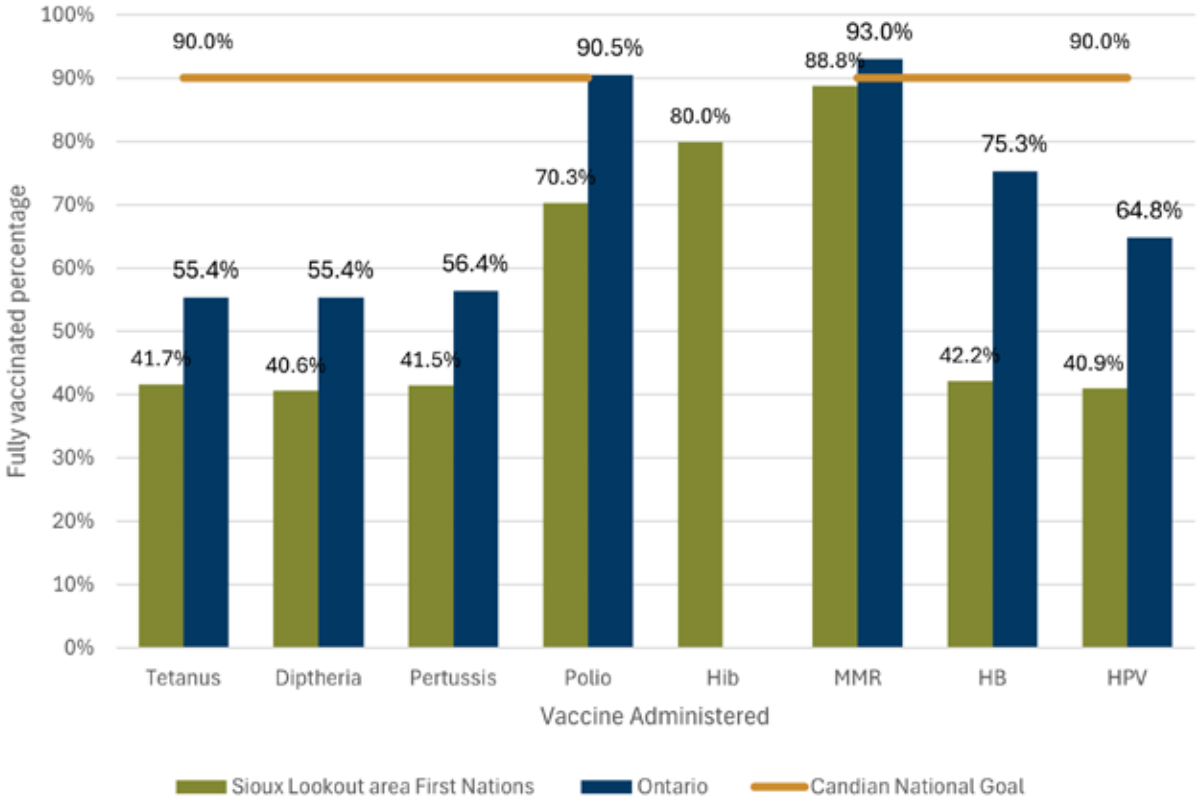


Figure 5. Percentage of Sioux Lookout area First Nations 17-year-olds up-to-date by type of vaccine

In the Sioux Lookout area First Nations communities, vaccination coverage for 17-year-old children remains below both provincial rates and the Canadian national goal of 90% coverage across several vaccines. Only about 40% of children in this age group received the recommended six doses of the tetanus, diphtheria, and pertussis vaccines, compared to provincial coverage rates of 55.4% for tetanus and diphtheria, and 56.4% for pertussis. Similarly, only 70.3% of children were fully vaccinated with five doses of the polio vaccine, while the corresponding provincial rate was 90.5%.

For the Haemophilus Influenza type B vaccine, 80.0% of children received the recommended four doses; however, no provincial comparison was available. Coverage for the Measles, Mumps, and Rubella (MMR) vaccine reached 88.8%, still trailing behind the provincial rate of 93.0%. Only 51.1% of children received the two doses of the Varicella vaccine, with no provincial data available for comparison.

Hepatitis B vaccine coverage was low, with only 42.2% of children completing the recommended two or three doses, compared to 75.3% provincially. Moreover, uptake of the Human Papilloma Virus (HPV) vaccine was even lower, with only 41.0% of children receiving the recommended doses, below provincial rate of 64.8%.

These disparities indicate a clear need for targeted interventions to improve vaccine uptake and close the gap between the Sioux Lookout First Nations communities and broader provincial and national vaccination goals.

Regional Vaccine Coverage by Type of Vaccines

This section presents vaccination coverage rates by vaccination type for communities served by SLFNHA This view allows for meaningful comparisons of where the greatest challenges are in keeping children and youth fully vaccinated, and where further connection and partnerships will help to increase coverage on time for best protection of children and youth in communities. Where available, Ontario vaccination coverage rates and Canadian National Goals are provided for comparisons and targets. There is no provincial data for ages 1, 2, and 12, so only the data from the communities SLFNHA serves is presented.

Diphtheria, Tetanus, Pertussis, Polio, and Haemophilus influenza Type B (DTaP-IPV-Hib) Vaccine

Vaccination rates for the DTaP-IPV-Hib vaccine were lower in the 2-year-old age group compared to the 1-year-old age group. However, the rates in both age groups fell short of the national goal.

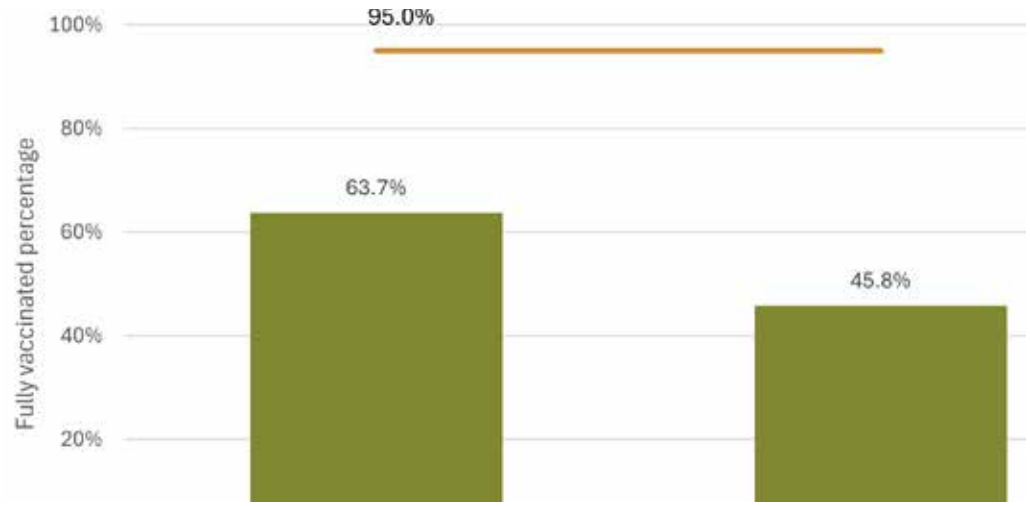


Figure 6. DTaP-IPV-Hib vaccine coverage for Sioux Lookout area First Nations 1- and 2-year olds

Tetanus Vaccine

Coverage rates for tetanus in communities for ages 7 and 17 were lower compared to the provincial coverage rates. Please note that the Canadian national vaccination goal changes from 95% at age 7 to 90% at age 17.

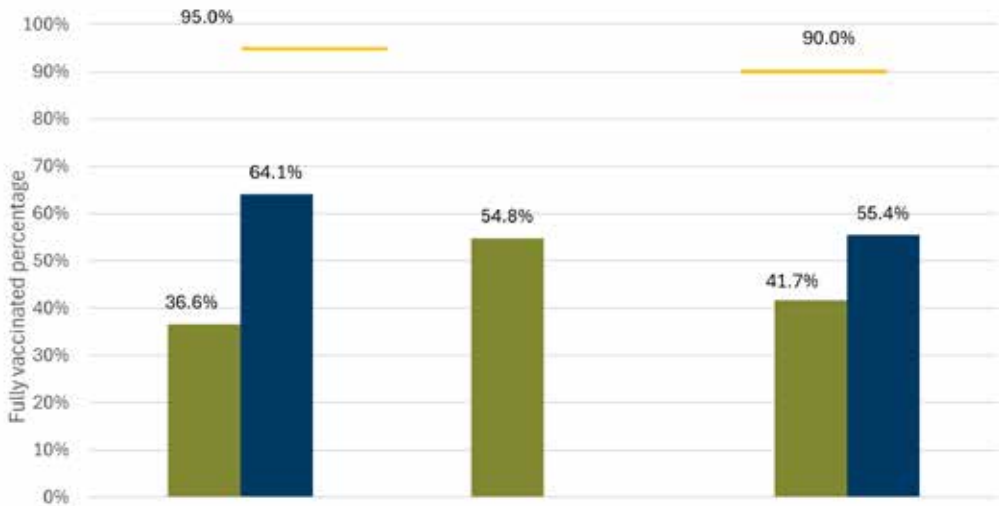


Figure 7. Tetanus vaccine coverage for Sioux Lookout area First Nations 7-, 12-, and 17-year olds

Diphtheria Vaccine

For diphtheria, the coverage rates increased between the 7-year-old and 12-year-old age groups. However, there was a substantial decrease in coverage between the 12-year-olds and 17-year-olds. The decline may be due to the requirement of higher number of doses to be fully vaccinated by age 17 as compared to younger age groups. The Canadian national goal changes from 95% at age 7 to 90% at age 17. Since provincial data for age 12 is not available, only the data from the communities SLFNHA serves is presented.

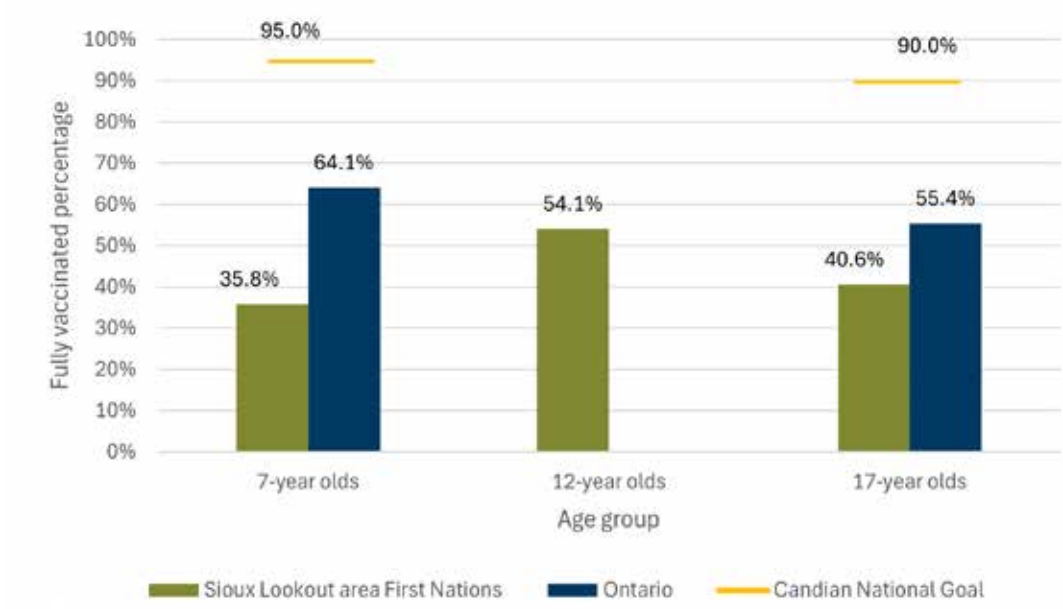


Figure 8. Diphtheria vaccine coverage for Sioux Lookout area First Nations 7-, 12-, and 17-year old

Pertussis Vaccine

Coverage rates for both the 7 and 17-year-old age groups were lower than the provincial comparators. No provincial comparators were available for 12 year age group. Coverage rates were considerably below Canadian National goal of 95% in this age group.

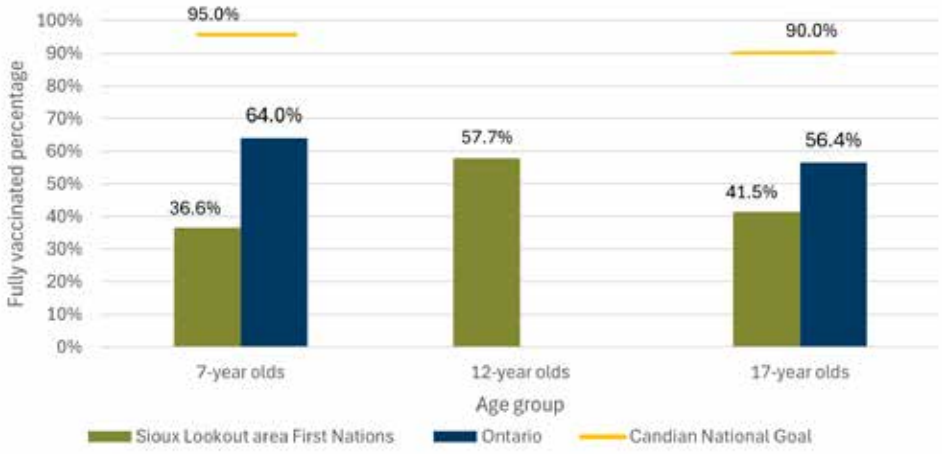


Figure 9. Pertussis vaccination coverage for Sioux Lookout area First Nations 7-, 12- and 17-year olds

Polio Vaccine

Coverage rates increased as children and youth got older. One contributing factor may be that the number of doses required to be fully vaccinated was the same for ages 7, 12 and 17. However, coverage rates in communities lag behind provincial comparators (Figure 10).

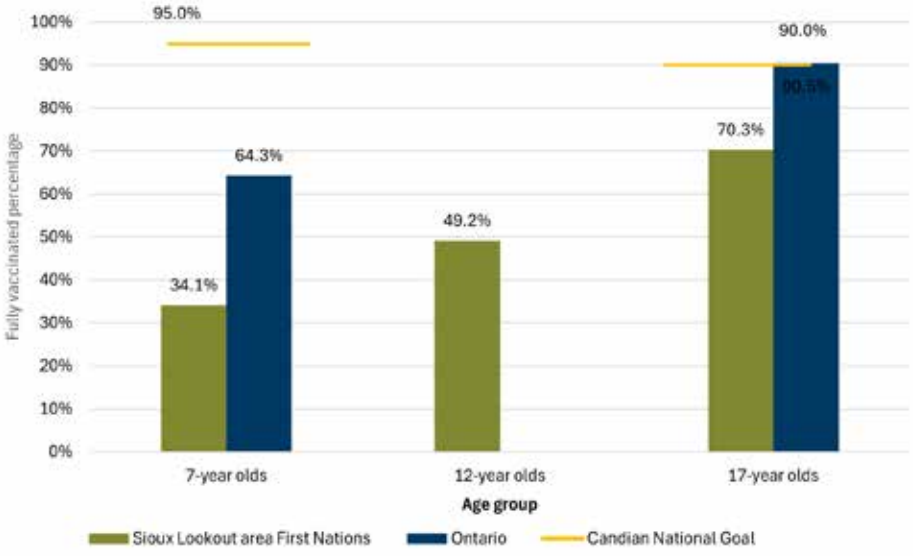


Figure 10. Polio vaccine coverage for Sioux Lookout area First Nations 7-, 12- and 17-year olds

Haemophilus influenza type B (Hib) Vaccine

The coverage rates for the Haemophilus influenzae type b (Hib) vaccine showed an increase from ages 7 to 17, with older age groups demonstrating higher vaccination rates. This may be attributed to the similar vaccine dose requirements for full vaccination across both age groups. However, vaccination coverage in the Sioux Lookout First Nation communities remains below both the national goal and Ontario's vaccination rates. While Ontario coverage data is available for the 7-year-old age group, there is no available data for the 12- and 17-year-old age groups.

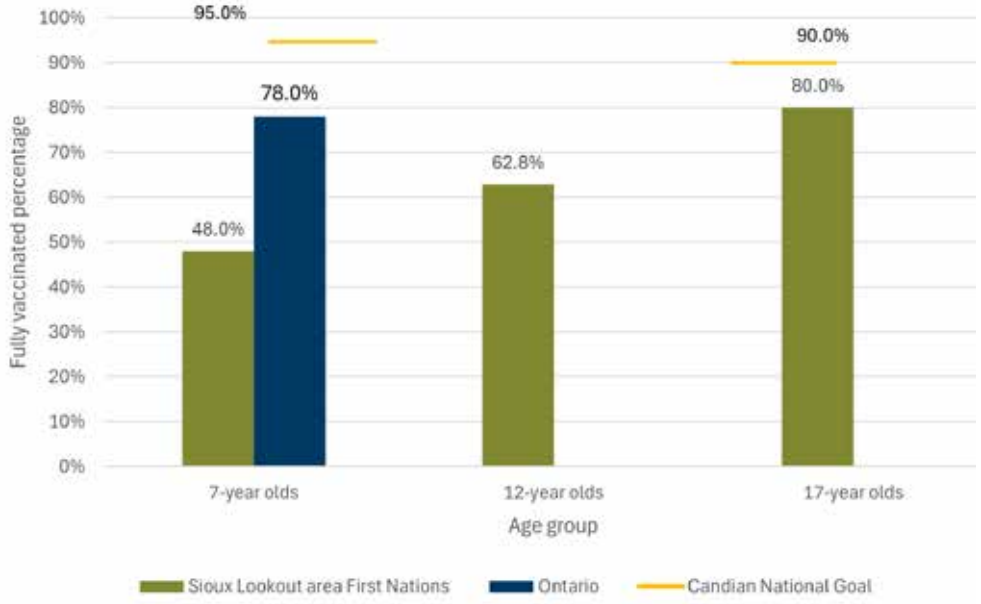


Figure 11. Haemophilus Influenza type B (Hib) vaccine coverage for Sioux Lookout area First Nations 7-, 12-, and 17-year olds

Pneumococcal Conjugate 13 (Pneu-C-13)

The analysis shows that vaccination coverage rates decreased from the 1-year-old to the 2-year-old age group. For 7-year-old age group, around 60% of the children are fully vaccinated. The Ontario coverage rates for 7-year-old age group is 78%. The national Canadian goals for vaccination coverage, which aim for 95% for children in these age groups, are depicted in the graph 12. The coverage rates remain below these national targets.

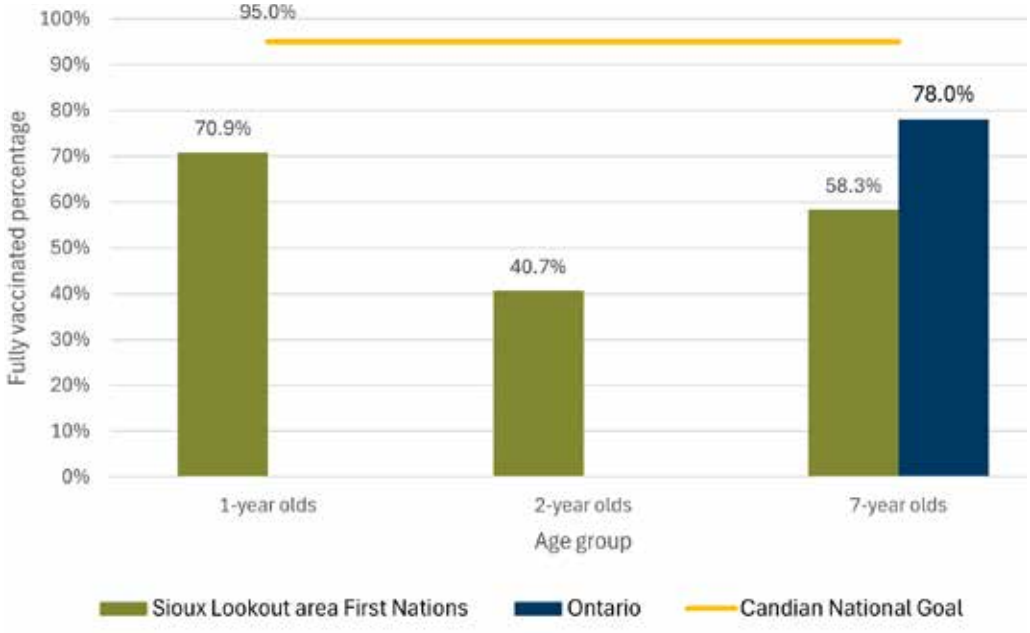


Figure 12. Pneumococcal Conjugate 13 vaccine coverage for Sioux Lookout area First Nations 1-, 2- and 7-year olds

Rotavirus Vaccine

Less than half of the 1-year-old children in the Sioux Lookout area First Nations communities were fully vaccinated with the Rotavirus vaccine, with only 43.5% receiving the recommended two doses. This falls considerably short of Canada's national goal of 95% coverage, highlighting a critical gap in vaccination uptake for this group. Such disparities emphasize the need for targeted efforts to improve immunization rates for communities.

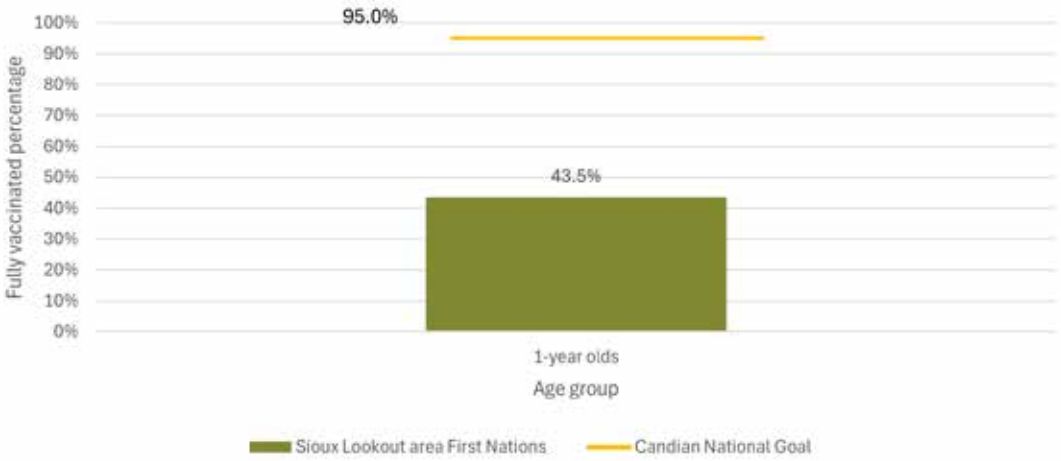


Figure 13. Rotavirus vaccine coverage for Sioux Lookout area First Nations 1-year-olds

Meningococcal Conjugate C (Men-C-C) and Meningococcal Conjugate C-ACYW (Men-C-ACYW) Vaccines

Coverage rates of Men-C-C for 7-year-olds are slightly higher than those for 2-year-olds, possibly because only one dose of the same vaccine is required for both age groups. However, the coverage rates for all age groups remain below the Canadian national goal, with no provincial comparators available for 12-year old group. Additionally, the coverage rate for 12-year-olds (grade 7) shows a decline compared to 2- and 7-year-olds.

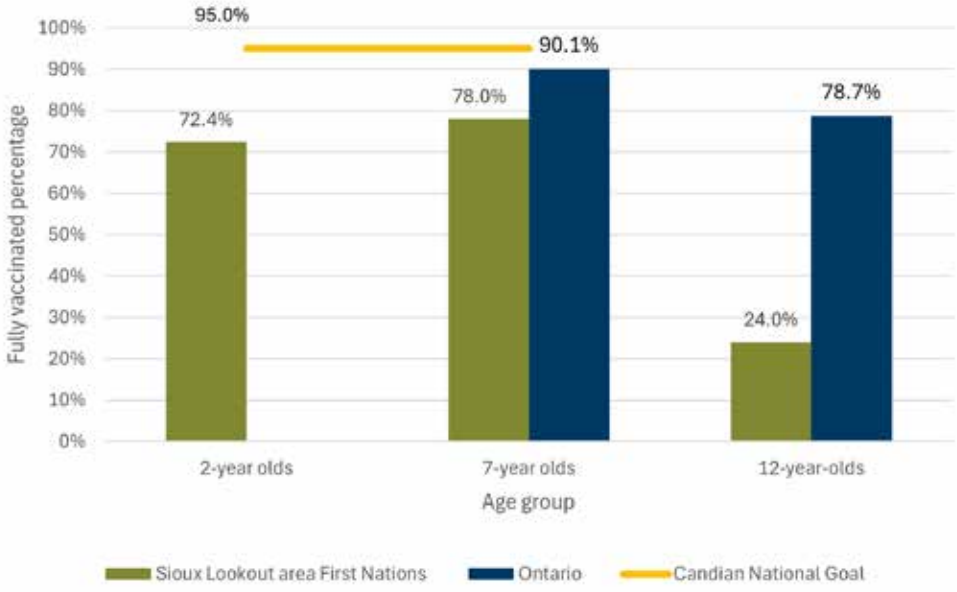


Figure 14. Meningococcal Conjugate C vaccine coverage for 2- and 7-year olds, and Meningococcal Conjugate ACYW coverage for 12-year olds

Measles, Mumps, Rubella (MMR) Vaccine

The coverage rates for the Measles, Mumps, and Rubella (MMR) vaccine improve as children age, with vaccination rates increasing from the 7-year-old group to the 17-year-old group. The coverage rate for 12-year-olds is higher than that for 7-year-olds, and the rate for 17-year-olds exceeds that for 12-year-olds. To be fully vaccinated, children and youth aged 7, 12, and 17 need the same number of doses—one additional dose beyond the initial dose required at age 2. This provides sufficient time for individuals to be fully vaccinated. MMR vaccine coverage rates are closer to provincial targets compared to other vaccines.

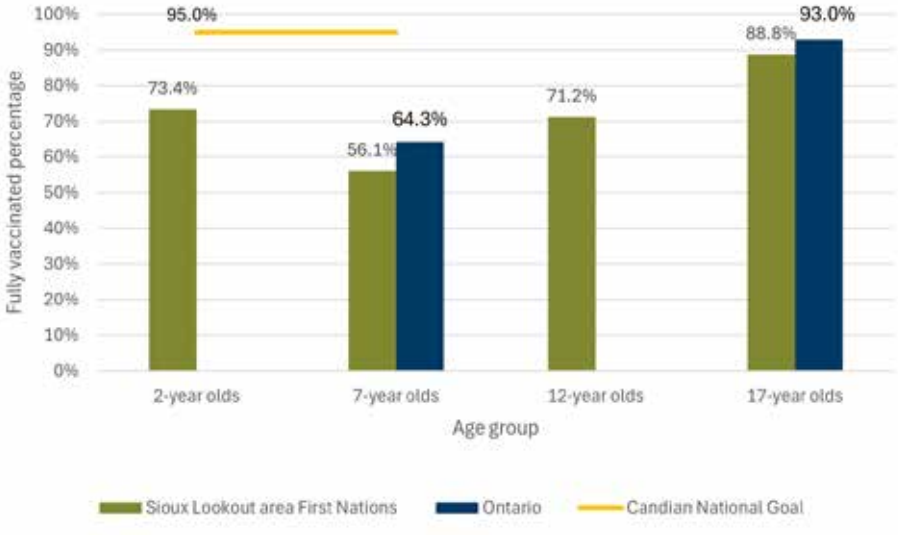


Figure 15. Measles, Mumps, Rubella vaccine coverage for Sioux Lookout area First Nations 2-, 12-, and 17-year olds

Varicella (Var) Vaccine

Compared to the national Canadian goals, the coverage rates of Varicella in communities lagged behind the National targets for this vaccine (Figure 16). As the age group increased, the coverage rate decreased. Less than half of the youth aged 17-years were fully vaccinated.

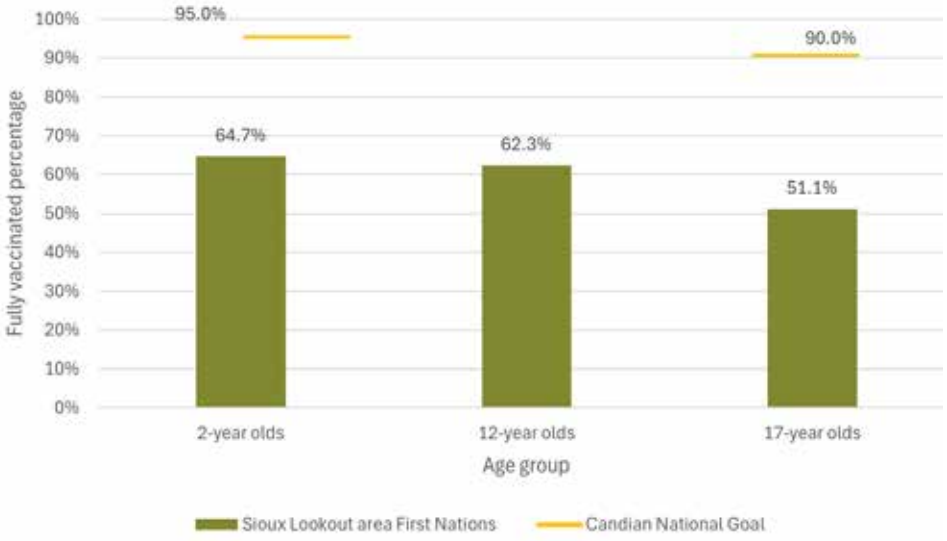


Figure 16. Varicella vaccine coverage for Sioux Lookout area First Nations 2-, 12-, and 17-year olds

Hepatitis B (HB) Vaccine

As youth get older, the up-to-date coverage rates for Hepatitis B increased. Overall, Sioux Lookout area First Nations coverage rates were still below the provincial rates and goal (Figure 17). In the 12-year-old age group, only 11 total second doses, and 3 total third doses were administered out of the 3-dose series for HB. Youth may simply need more time to get their second and third doses. Nonetheless, interventions may be required to boost overall coverage rates.

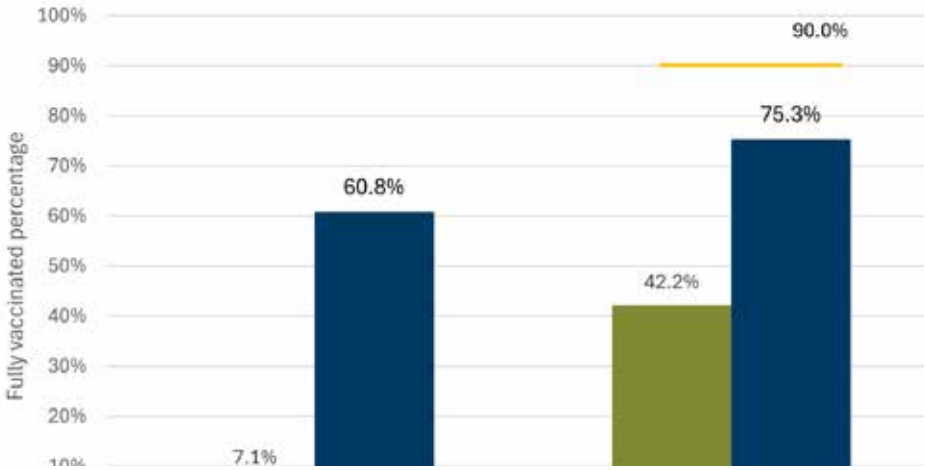


Figure 17. Hepatitis B vaccine coverage for Sioux Lookout area First Nations 12- and 17-year olds

Human Papillomavirus (HPV) Vaccine

As the age groups increased in age, the coverage rates also increased. However, the coverage rates of this vaccine are the lowest of all the vaccinations discussed in the report. In the 12- and 17- year old age groups, only 0.4% and 14.4% of youth received the vaccine, respectively, according to the vaccine schedule.

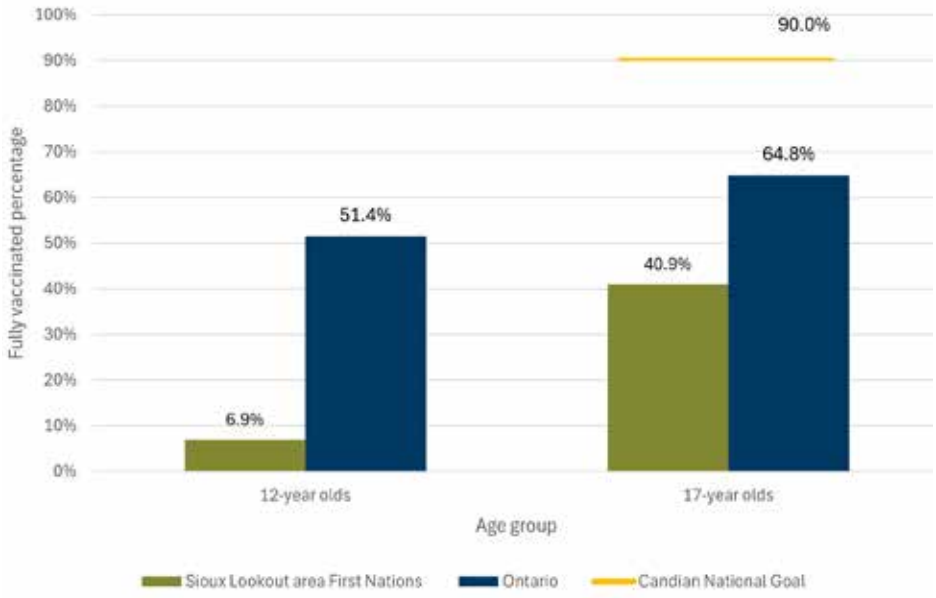


Figure 18. Human Papillomavirus vaccine coverage for Sioux Lookout area First Nations 2- and 7-year olds

Discussion

This report reveals significant disparities in vaccination coverage among children in the Sioux Lookout area First Nations communities, highlighting systemic challenges in vaccine delivery and uptake. These gaps are particularly concerning as they increase the risk of outbreaks of vaccine-preventable diseases, posing severe health threats to these communities. A detailed analysis of vaccination rates in different age groups demonstrates critical areas requiring targeted public health interventions to improve immunization coverage and ensure better health outcomes.

In the 1-year age group, persistently low immunization rates for vaccines like DTaP-IPV-Hib, pneumococcal conjugate 13, and rotavirus reflect systemic barriers to vaccination that pose significant public health risks. Addressing these gaps is critical to reducing the risk of outbreaks of vaccine-preventable diseases, which disproportionately impact vulnerable communities.

Notably, the rotavirus vaccine coverage (43.5%) is significantly lower than that of DTaP-IPV-Hib (63.7%) and pneumococcal conjugate 13 (70.9%) and is well below national averages. This finding is significant because the rotavirus vaccine is often administered alongside other vaccines (DTP-IPV-Hib and Pneumococcal Conjugate 13). Ideally, vaccination rates should be comparable. While this trend is consistent across Canada, where rotavirus vaccination rates among 1-year-olds lag behind other vaccines, previous studies indicate contributing factors include differences in administration methods (oral vs. injection), scheduling complexities, and low parental awareness or perceived importance of the vaccine. Additionally, delays in vaccination, often due to reliance on catch-up clinics, may render some infants ineligible for vaccines like rotavirus vaccine by the time they reach vaccination clinics. These findings underscore the need for strategies to enhance timeliness, parental awareness of vaccination schedules, and highlight the importance of these vaccines.[13,14]

Among 2-year-olds, vaccination rates drop even further, with only 45.8% completing the DTaP-IPV-Hib series and 40.7% completing the pneumococcal conjugate 13 series. These declines from the 1-year-old cohort are troubling given the critical role these vaccines play in preventing severe diseases such as pneumonia, meningitis, and pertussis. The reduced rates may reflect challenges such as logistical difficulties, decreased parental engagement, and failure to complete multi-dose series. Previous research has demonstrated that parental reminders, mobile vaccination clinics, and culturally appropriate community outreach can significantly improve vaccine uptake.15,16 Implementing such strategies could effectively address these gaps in coverage and prevent further declines.

The situation is equally concerning for 7-year-olds, with vaccination rates for tetanus, diphtheria, pertussis, and polio ranging from just 34% to 36%. These figures are significantly below the provincial average of 64% and fall far short of the national target of 95%. The decline in vaccination adherence as children age may be attributed to the greater number of vaccines required for full immunization, reduced parental oversight, missed opportunities in school-based immunization programs, and the increasing complexity of vaccine schedules. Past studies suggest that robust school-based immunization programs, coupled with targeted educational sessions for parents and students, can address these challenges effectively, improving vaccination rates and adherence.[17,18,19]

For 12-year-olds, vaccination rates for tetanus and pertussis (54.8%), polio (49.2%), and hepatitis B (7.1%) remain low. Uptake rates for meningococcal conjugate and HPV vaccines are even lower, highlighting significant issues with vaccine accessibility, awareness, and delivery. Insufficient data collection and record-keeping exacerbate the chal-

lenge of increasing vaccination coverage, as accurate tracking of administered vaccines is essential for effective public health planning. Community health initiatives, especially those involving nursing stations and local health workers, must focus on raising awareness and addressing barriers to vaccine access and administration.[20,21]

Among 17-year-olds, vaccination coverage continues to be below both national and provincial targets. Rates for tetanus, diphtheria, pertussis, and polio vaccines range from 40% to 70%, while coverage for 2 doses of HPV vaccine stands at 41.0%, compared to the provincial rate of 64.8%. A noticeable decline in diphtheria vaccine coverage between ages 12 and 17 reflects challenges in maintaining adherence to multi-dose schedules. Missed vaccination opportunities during adolescence, logistical difficulties, and a lack of awareness about the importance of completing vaccination series are likely contributors. Collaborative efforts between schools and healthcare providers to offer catch-up vaccination clinics and educational programs could play a critical role in improving vaccination rates in this age group.[22]

This childhood immunization coverage data, alongside the 2019 data reported in the 2022 report published by SLFNHA, is available in Appendix 2 of this report. The full report can be accessed on the SLFNHA website.12 However, a detailed comparative analysis of vaccination rates with the previous report has not been performed due to methodological differences. Comparisons between the two reports should be made cautiously, and conclusions should not be drawn solely from observed differences in rates without considering methodological variations.

This study highlights a persistent trend of low immunization rates in 2019 and 2024, with limited progress despite ongoing efforts. Vaccine coverage rates within the communities served by SLFNHA remain significantly lower than provincial rates and national goals. Systemic barriers continue to impede vaccine uptake, emphasizing the need for targeted and sustained efforts to address these challenges. Improving vaccination coverage requires focused attention on programming and the allocation of adequate resources to implement upstream interventions. A concerted, strategic, and coordinated approach involving regional partners is essential to support these efforts and improve health outcomes in these communities.

Conclusion and Implications for Public Health Initiatives

The findings of this study underscore several actionable strategies for public health stakeholders to close vaccination gaps and strengthen community resilience against vaccine-preventable diseases. Potential policy and programmatic options include:

1. Culturally Tailored Outreach Initiatives
Public health efforts in First Nations communities benefit from culturally respectful approaches, which will involve collaboration with local leaders and trusted community members. By incorporating traditional knowledge and culturally aligned practices, these outreach programs can address vaccine hesitancy, increase community trust, and promote support for immunization.

2. Enhanced Education and Awareness Programs
Targeted education efforts by community health workers and healthcare providers are crucial for increasing vaccine acceptance and understanding. Emphasis should be given to the importance of timely and complete immunization. Engaging with local media (radio, print, social media platforms used within the community) to spread consistent, clear messages about the importance of vaccinations is equally important.

3.Strengthen Partnerships and Collaboration
Strengthen partnerships and collaboration between communities, health partners, and education agencies to coordinate efforts.

4. Strengthening School-Based Immunization Programs
Schools are pivotal in providing accessible vaccination services, especially for older children and adolescents. Comprehensive immunization programs within schools, combined with regular informational sessions for both parents and students, can improve adherence to vaccination schedules and raise awareness of the long-term health benefits of immunization.

5.Improved Access and Convenience through Mobile Clinics and Reminder Systems
Mobile vaccination clinics offer an effective solution for reaching remote communities, bridging accessibility gaps for families facing logistical challenges. Additionally, implementing reminder and recall systems, such as text or call notifications to parents about upcoming vaccinations, can encourage the completion of necessary doses and address the observed decline in vaccination rates among older children. Offering vaccines at community events and other gatherings, and ensuring that accessing vaccine services is as convenient as possible, is paramount.

6. Enhanced Data Collection and Record-Keeping
Reliable data collection and record-sharing between communities and regional health authorities are essential for a comprehensive view of vaccination coverage. Improved data systems can ensure that all administered vaccines, including those given outside the community, are accurately recorded. This provides a clearer picture of actual coverage and supports the development of targeted interventions.

7. Develop Immunization Strategy
To bridge gaps in vaccine access, SLFNHA should develop a targeted immunization strategy to enhance both vaccine access and vaccine uptake. The strategy will build a supportive framework that promotes equitable immunization across the First Nations communities served by SLFNHA.

8. Conduct Further Studies
Both quantitative and qualitative studies are needed to better understand the underlying factors contributing to low vaccine coverage and to identify best practices for improving immunization uptake in the First Nations communities served by SLFNHA.

Achieving and maintaining high vaccination coverage is essential for the effective prevention and control of VPDs. Accurate and timely data on vaccination coverage is needed to evaluate vaccination programs and predict and prepare for outbreaks in communities. Collective efforts are required to speed up vaccination efforts to increase uptake, improve vaccination coverage, and address the current inequitable coverage of vaccines in Sioux Lookout area First Nations communities.


EVERY
CHILD
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Glossary

Age Group	A group of individuals born within the same year.
Coverage	The number of people who have received a particular vaccine.
Immunity	A person's ability to resist or fight an infection against disease.
Immunization	The process of receiving a vaccine to increase immunity or resistance to an infectious disease. This is also known as vaccination.
Immune system	The bodily process of protecting the body against foreign substances such as diseases.
Infectious diseases	Infectious diseases are caused by organisms such as viruses, bacteria, parasites, and fungi. It is possible for these organisms to spread diseases from one person to another.
Percentage	The proportion of a number out of 100.
Vaccination rate	The percentage of people who have received vaccines within the population. This is also known as the vaccination coverage rate
Fully vaccinated	The number of children and youth who have received all recommended doses of a vaccine, or all vaccines they are eligible for within their age group.
Vaccine	A substance that stimulates the body's defenses against infection-causing viruses and bacteria. Most vaccines are given as an injection, but some can be given orally.
Vaccination	The process of administering a vaccine to induce immunity against a particular disease. This is also known as immunization.
Vaccine preventable disease *(VPD)*	Vaccine preventable diseases are diseases caused by viruses and bacteria that can be prevented with vaccines.

Appendices

Appendix 1. Population estimates by age group

Age group	1 year-old	2 year-old	7 year-old	12 year-old	17 year-old
# of children and youth born in a certain year	402	413	533	549	569

Appendix 2. Summary of vaccination coverage rates by age group in the SLFNHA region

Age group	Vaccination	Sioux Lookout area First Nations of Fully Vaccinated Children 2023-2024	Sioux Lookout area First Nations of Fully Vaccinated Children 2019
1 year-olds	3 doses of Dtap-IPV-Hib vaccine	63.70%	59.3%
	2 doses of Pneu-C-13 vaccine	70.90%	71.5%
	2 doses of Rot-1 vaccine	43.50%	54.7%
2 year-olds	4 doses of Dtap-IPV-Hib vaccine	45.80%	38.5%
	3 doses of Pneu-C-13 vaccine	40.70%	51.3%
	1 dose of Men-C-C vaccine	72.40%	75.2%
	1 dose of MMR vaccine	73.40%	72.9%
	1 dose of Var vaccine	64.70%	68.4%
7 year-olds	5 doses of Tetanus vaccine	36.60%	57.8%
	5 doses of Diphtheria vaccine	35.80%	57.8%
	5 doses of Pertussis vaccine	36.60%	56.1%
	5 doses of Polio vaccine	34.20%	43.4%
	4 doses of Hib vaccine	48.00%	48.2%
	3 doses of Pneu-C-13 vaccine	58.30%	49.5%
	1 dose of Men-C-C vaccine	78.10%	76.8%
	2 doses of MMR vaccine	56.10%	72.1%
12 year-olds	5 doses of Tetanus vaccine	54.80%	63.9%
	5 doses of Diphtheria vaccine	54.10%	63.5%
	5 doses of Pertussis vaccine	57.70%	63.9%
	5 doses of Polio vaccine	49.20%	58.6%
	4 doses of Hib vaccine	62.80%	72.9%
	3 doses of HB vaccine	7.10%	0.7%
	1 dose of Men-C-ACYW vaccine	24.00%	50.9%
	2 doses of MMR vaccine	71.20%	84.7%
	2 doses of Var vaccine	62.30%	35.2%
	At least 2 doses of HPV vaccine	6.90%	0.4%
17 year-olds	6 doses of Tetanus vaccine	41.70%	42.1%
	6 doses of Diphtheria vaccine	40.60%	31.0%
	6 doses of Pertussis vaccine	41.50%	34.4%
	5 doses of Polio vaccine	70.30%	68.8%
	4 doses of Hib vaccine	80.00%	81.0%
	3 doses of HB vaccine	42.20%	51.3%
	2 doses of MRR vaccine	88.80%	87.3%
	2 doses of Var vaccine	51.10%	19.0%
	2 or 3 doses of HPV vaccine	41.00%	14.4%