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INTRODUCTION TO VACCINES



NCIM NATIONAL COUNCIL of
INDIGENOUS MIDWIVES



CAM ACSF
Midwives for everyone, everywhere
Des sages-femmes pour tous, partout



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THE IMMUNE SYSTEM

Our body helps us stay healthy. Our immune system defends our body from diseases. Infectious diseases are caused by germs, like bacteria and viruses, and can spread from one person to another.

The cells in our immune system identify the antigen as a foreign substance.

Our immune system sends white blood cells to find the diseased cells and to produce antibodies against the disease. Two types of antibodies are made. The first fights off the disease and the second creates memory cells that continue circulating in our body and will recognize the disease in the future. If the disease invades our bodies again, our immune system will recognize and kill it faster.

We have three types of immunity:

- 1. Innate or Natural:** The body we are born with has things to protect us; for example, our skin. It also has immune cells that immediately recognize and respond to anything foreign but do not produce antibodies.
- 2. Active:** Immunity develops throughout our lives when we are exposed to diseases directly or through vaccination. These cells develop and produce antibodies.
- 3. Passive:** This type of immunity is “borrowed” and lasts a short time; for example, antibodies in breast milk give a baby temporary immunity to diseases the parent has had.



UNDERSTANDING VACCINES

What are vaccines?

Vaccines work with our body's defences, the immune system, to build immunity against diseases while avoiding the risks associated with contracting the diseases themselves.

Vaccines help our bodies by introducing safe parts of germs, like bacteria or viruses, called antigens.¹ This allows our immune system to learn how to fight off these germs. So, if we ever encounter the actual germ later on, our immune system is ready to stop us from catching the disease and keep us from getting really sick even if we do catch the disease.

There are two main kinds of vaccines:

- Live attenuated products contain a weakened live germ and are the most likely to create immunity that will last a lifetime.
- Inactivated products contain a killed or part of a germ. They do not usually create an immunity that lasts a lifetime, so extra booster vaccines are needed.

Vaccines contain trace amounts of other specific ingredients (also called components). Some of these ingredients help boost the vaccine's effectiveness, and others help keep the vaccine stable during transport and storage. Vaccines contained in multi-dose vials need a preservative to prevent germs from growing in the vial after the first dose has been removed.

¹ Immunize Canada. What is immunization? Available from: <https://immunize.ca/what-immunization>

The preservative thimerosal is no longer used in routine childhood vaccines in Canada, except for influenza vaccines produced in multi-dose vials, which are considered safe in pregnancy and breast/chestfeeding.²

Theoretically, the live germ in a vaccine given during pregnancy can cross the placenta and cause infection of the fetus. We do not have evidence about this either way, so to be safe live vaccines are not recommended in pregnancy. If someone does receive a live vaccine during pregnancy, it is not considered a reason to end the pregnancy. It is considered safe to get any kind of vaccine when breast/chestfeeding.

How are vaccines given?

Most vaccines are given by injection needle, but some are given by mouth or sprayed into the nose.

Where do I get a vaccine?

Vaccination services vary by province and territory. Your midwife, or any health professional, can help you find out where to get a vaccine.



² Public Health Agency of Canada. Immunization in pregnancy and breastfeeding: Canadian Immunization Guide. Available from: <https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-3-vaccination-specific-populations/page-4-immunization-pregnancy-breastfeeding.html#>



Free vaccines are available through health units (also called public health clinics, community health centres, and CLSCs in Quebec), school, college and university health services, pharmacies, and some doctors', nurse practitioners' and midwives' offices. You do not need to have a family doctor to get a vaccine.

Where to get a vaccine, what it might cost, and how to keep track of your vaccine records varies for Indigenous peoples depending on where they live. The community health nurse usually gives vaccines in many Indigenous, remote, or Northern communities.

COVID-19 and Influenza (flu) vaccines are usually available between November and March.

Find a vaccine clinic using your postal code: vaccines411.ca

If you do not have coverage under provincial, territorial, and federal health insurance systems, contact your local public health authority for vaccine information. Click here for a listing of [local public health authorities](#).



Why is it important to get vaccinated?

Immunization has made significant contributions to human health. Immunizations currently prevent between 3.5 and 5 million deaths every year worldwide from diseases like diphtheria, tetanus, pertussis, influenza, and measles.³

When you get a vaccine, it helps your body become strong against infections. This means you're less likely to get sick and won't spread the sickness to others. Some vaccines keep you safe for a few years, while others protect you your whole life.

If more people in your community get vaccinated, it reduces the chances of getting sick for those who can't, like some sick people, babies, or those who only got a partial vaccine.

By getting vaccinated, you're not only protecting yourself but also helping to make your community safer. This is often called "herd immunity." For really contagious diseases like measles, a lot of people, around 95%, need to get vaccinated to keep everyone safe.⁴

Vaccine safety⁵

Before a vaccine is approved, Health Canada reviews how well it works and its safety. After approval, Health Canada monitors its safety and effectiveness. Sometimes, after getting vaccinated, there might be side effects like fussiness, mild fever, sleepiness, or pain at the injection spot. These usually last 1 to 3 days, and most kids handle vaccines well.

³ WHO. Vaccines and immunizations. Available from: <https://www.who.int/health-topics/vaccines-and-immunization>

⁴ Public Health Agency of Canada. Vaccination coverage in Canada. Available from: <https://www.canada.ca/en/public-health/services/immunization-vaccines/vaccination-coverage.html>

⁵ Public Health Agency of Canada. A parent's guide to vaccination. Available from: <https://www.canada.ca/en/public-health/services/publications/healthy-living/parent-guide-vaccination.html>





What is an infectious disease?

Infectious diseases are caused when germs like viruses enter our bodies. Germs can live on surfaces like door handles and tabletops. Most people get sick by touching a surface with germs and then touching their eyes, nose, or mouth. Hand washing is the best way to lower your risk of getting sick.

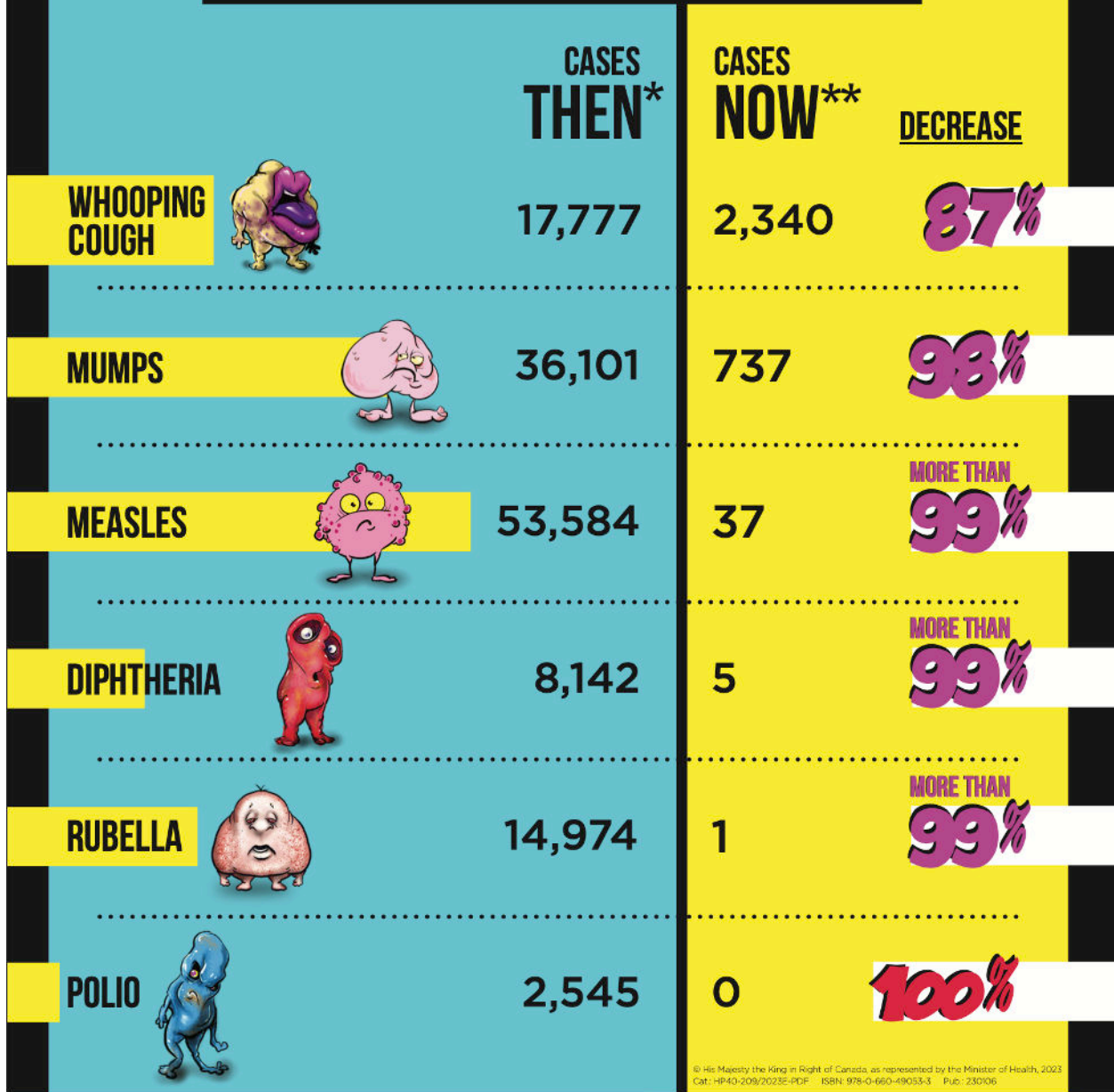
Diseases prevented by routine vaccinations⁶

The infectious diseases and the routine vaccinations we talk about most in pregnancy, postpartum, the newborn period, and childhood are:

- chickenpox (varicella): Canada.ca/chickenpox
- COVID-19: Canada.ca/covid-19
- diphtheria: Canada.ca/diphtheria
- flu (influenza): Canada.ca/flu
- hepatitis B: Canada.ca/hepatitis-b
- Hib (haemophilus influenzae type b): Canada.ca/haemophilus
- HPV (human papillomavirus) - offered in school-based clinics: Canada.ca/hpv
- measles: Canada.ca/measles
- meningococcal: Canada.ca/meningococcal
- mumps: Canada.ca/mumps
- pneumococcal: Canada.ca/pneumococcal
- polio (poliomyelitis): Canada.ca/polio
- rotavirus: Canada.ca/rotavirus
- rubella: Canada.ca/rubella
- tetanus: Canada.ca/tetanus
- whooping cough (pertussis): Canada.ca/whooping-cough

⁶ Public Health Agency of Canada. A parent's guide to vaccination. Available from: <https://www.canada.ca/en/public-health/services/publications/healthy-living/parent-guide-vaccination.html>

VACCINES WORK



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* Average number of cases reported annually in Canada during the five years before routine vaccine use, or the closest possible five years where stable reporting was occurring.

** Average number of cases reported annually in Canada from 2016 to 2020.

Some numbers are subject to change as reports are updated. For details about the data sources and methods, visit Canada.ca/vaccines



Immunizations during pregnancy⁷

The Public Health Agency of Canada states that “non-live vaccines are considered safe when administered in pregnancy.”⁷ The following non-live vaccines are recommended to all pregnant people:

- Non-live influenza vaccine⁸
 - Influenza, or the flu, is a seasonal virus.
 - All pregnant people, at any stage of pregnancy, should receive the non-live influenza vaccine during each pregnancy.
- Pertussis vaccine (Tdap) (given as tetanus toxoid, diphtheria toxoid, acellular pertussis)
 - Whooping cough, or pertussis, is a sickness that spreads easily and affects the lungs and airways. It’s caused by a type of bacteria called bordetella pertussis.⁹ This illness can occur at any time of the year and can happen anywhere in the world.
 - The vaccine should ideally be provided between 27 and 32 weeks of gestation during each pregnancy.
 - Immunization between 13 and 26 weeks of gestation may be considered in situations where there may be an increased risk of preterm delivery.
- Hepatitis B (HB) vaccine
 - Acute HB infection in a pregnant person can cause severe disease and chronic infection in the newborn.⁵
 - All pregnant people should be tested for hepatitis B surface antigen (HBsAg) (unless they are already known to be immune to hepatitis B virus or carriers) in each pregnancy so that the newborn can be given HB prophylaxis if indicated.⁷

⁷ Public Health Agency of Canada. Immunization in pregnancy and breastfeeding: Canadian Immunization Guide. Available from: <https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-3-vaccination-specific-populations/page-4-immunization-pregnancy-breastfeeding.html#>

⁸ Public Health Agency of Canada. Vaccination and pregnancy. Available from: <https://www.canada.ca/content/dam/phac-aspc/documents/services/publications/vaccines-immunization/vaccination-pregnancy-fact-sheet.pdf>

⁹ Public Health Agency of Canada. Pertussis (whooping cough). Available from: <https://www.canada.ca/en/public-health/services/immunization/vaccine-preventable-diseases/pertussis-whooping-cough.html>



In addition, if a pregnant person has no markers of HB infection and is at risk of HB infection, they should be offered HB immunization during pregnancy. This is considered safe.¹⁰

The Society of Obstetricians and Gynecologists of Canada recommends the COVID-19 vaccination anytime during pregnancy and for people who are breast/chestfeeding.¹¹

Contraindications and precautions¹²

Sometimes, vaccines can't be given or must be delayed due to contraindications and precautions. People may also hesitate or refuse to get vaccinated because of concerns.

It's crucial for vaccine providers to correctly identify situations where a vaccine shouldn't be used (contraindications) and distinguish them from conditions that may increase the risk of a reaction (precautions), and seek expert advice as needed.

A contraindication means the risk of using a vaccine outweighs any potential benefit.

¹⁰ Public Health Agency of Canada. Immunization in pregnancy and breastfeeding: Canadian Immunization Guide Available from: <https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-3-vaccination-specific-populations/page-4-immunization-pregnancy-breastfeeding.html#p3c3t1>

¹¹ Society of Obstetricians and Gynecologists of Canada. SOGC statement on COVID-19 vaccination in pregnancy. Available from: [https://sogc.org/common/Uploaded%20files/Covid%20Information/COVID_Vaccine_Pregnancy221118_Web_2023_1_25_ENG%20\(1\)_V1.pdf](https://sogc.org/common/Uploaded%20files/Covid%20Information/COVID_Vaccine_Pregnancy221118_Web_2023_1_25_ENG%20(1)_V1.pdf)

¹² Public Health Agency of Canada. Contraindications and precautions. Available from: <https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-2-vaccine-safety/page-3-contraindications-precautions-concerns.html>



A precaution is a condition that might increase the risk of an adverse reaction or affect the vaccine's ability to provide immunity. Usually, vaccines are deferred when precautions are present. However, in some cases, the vaccine's benefits may outweigh the potential risks.

Contraindications and precautions depend on a person's past immunization experiences, allergies, current health status (for example, pregnancy), and close contacts who might be affected. Some depend on the type of vaccine—live or non-live.

Vaccine providers will ask about past immunizations, allergies, current health, and chronic conditions before giving each dose to identify contraindications and precautions.

Vaccine ingredients

Vaccine ingredients are essential and safe in the quantities used. Each ingredient has a specific role in creating the vaccine or ensuring its safety and effectiveness.

These ingredients have not been shown to cause harm, except for rare allergic reactions in individuals sensitive to specific ingredients. Your midwife will ask you about known allergies or past vaccine reactions and evaluate whether a particular vaccine may not be safe for you before administering it.

The Public Health Agency of Canada's [Part 1 of the Canadian Immunization Guide](#) lists the ingredients in vaccines used in Canada.



Adverse event following immunization¹³

An adverse event following immunization (AEFI) refers to an unwanted or unexpected health effect after vaccination, which may or may not be linked to the vaccine. Anticipated reactions include mild symptoms like fever, redness, swelling, and soreness at the injection site. An unexpected AEFI is one not previously recognized or listed by the manufacturer. A serious AEFI poses a life-threatening risk or results in hospitalization, permanent disability, or death. This is extremely rare.¹⁴

Health professionals report any serious or unexpected AEFI after vaccination to local health departments across provinces and territories.

Keeping records

The individual or caregivers are responsible for keeping track of their immunizations. You often get, or can ask for, a paper booklet to help keep track. There is a Canadian app called [CANImmunize](#) that you can use to keep track of your vaccinations.

Health professionals do not necessarily share your vaccine information with each other. Also, any time health professionals want to share your medical information, they need your permission. If you have different types of care providers or are changing providers, you should tell them your vaccine history.

¹³ Canadian Pediatric Society. Vaccine safety: Canada's system. Available from: https://caringforkids.cps.ca/handouts/immunization/vaccine_safety

¹⁴ Health Canada. Vaccine safety and possible side effects. Available from: <https://www.canada.ca/en/public-health/services/vaccination-children/safety-concerns-side-effects.html>



Some midwives can give you the vaccine themselves. When they do this, they will write the type of vaccine and its lot number, like a bar code, and the date you received it. When you say goodbye to your midwife, make sure to get that information to share with the family doctor, nurse practitioner, pediatrician, or community nurse who will be seeing you and your baby next. Provinces and territories do not share vaccine records if you receive a flu or Tdap vaccine in pregnancy.

Infant and childhood vaccination

Recommended routine infant and childhood vaccines usually occur soon after you have said goodbye to your midwife. However, we know that many clients would like to discuss it with their midwife. Your midwife can help you with your questions and where to find answers.



Infectious disease and Indigenous history

From 1492, contact with Europeans brought new infectious diseases, like smallpox, the flu, measles, whooping cough, tuberculosis, and sexually transmitted infections. The 15th and 16th centuries are often called “The Great Dying.” During this time, up to 90% (approximately 50 million) of the Indigenous population of the Americas died, in most part due to these new diseases. Indigenous peoples had never encountered these diseases before and did not have the antibodies to the infection.¹⁵ As Western medical advances were made, Indigenous people did not have the same access to medical care, including vaccines.

Lack of access to basic medical care has played a role in the higher rates of infectious diseases and death rates in Indigenous populations. Infectious disease and ill health were also used as tools of colonization for the intentional assimilation and attempted eradication of Indigenous people in Canada. From the 1930s to the 1980s, residential schools used children for nutrition and surgical experiments. In the ‘30s and ‘40s, Indigenous peoples were severely affected by tuberculosis, partly because they were malnourished, experienced horrible conditions in residential schools and lived on overcrowded reserves. The death rate from that time was the highest ever reported among humans.

¹⁵ National Collaborating Centre for Infectious Diseases. Vaccine hesitancy and First Nations, Inuit and Métis populations – Potential implications during COVID-19. Available from: <https://nccid.ca/webcast/vaccine-hesitancy-and-first-nations-inuit-and-metis-populations-during-covid-19/>



Many people with tuberculosis were put in separate “Indian Hospitals” far from home. There, they suffered physical and sexual assaults, were deprived of food and drink, and were used in unethical medical experiments, including for vaccines. Due to the intentional experimentation on Indigenous peoples and the resulting traumas, many Indigenous peoples today lack trust in public health agencies, the medical community and health professionals.



KNOWING YOUR RIGHTS

Vaccines are not mandatory in Canada, meaning your consent is required to administer a vaccine. In British Columbia, school-aged children are required to provide immunization records. This regulation does not currently apply to students who attend schools in First Nations communities. In New Brunswick and Ontario, proof of immunization is required for children and teenagers to attend school. Exemptions for medical, social conscience, or religious reasons are available in these provinces.

Informed Choice

Midwives working in Canada, including Indigenous midwives, are guided by a principle called Informed Choice. This means the midwife is responsible for giving all the available information about an intervention, treatment, or test – what it is, the benefits (how it is meant to help), the risks (how it might hurt), implications for others (or, how it might affect your community), current scientific evidence, possible treatments, community standards (what is typically done) and what your options are. In collaboration with their midwives, clients have final decision-making authority. Informed choice also means you can ask questions, reflect, seek guidance from trusted family and friends, healers and elders, and work with your midwife to make a final decision.



Informed Consent

The Canadian Charter of Rights and Freedoms states, "Everyone has the right to information on risks associated with a medical intervention and the right to be free from unwanted physical interference."¹⁶ This means you have the right to know the possible risks associated with a medical intervention, such as a vaccine, and you have the right to decline the intervention. Each province and territory has legal guidelines about informed consent.

Vaccination is offered as part of pregnancy, postpartum, and newborn care. It is an intervention intended to help you or your baby. It has benefits and risks. It requires your informed consent. Your midwife offers informed choice discussions about vaccinations that are available to you.

If you find yourself in a position where a health professional refuses to be your care provider because you declined a vaccine, you can submit a report to their provincial or territorial college representing the profession for help.

¹⁶ Government of Canada. The Canadian Charter of Rights and Freedoms. Section 7 – Life, liberty and security of the person. Available from: <https://www.justice.gc.ca/eng/csj-sjc/rfc-dlc/ccrf-ccd/check/art7.html>



Immune System and Wellness

A strong immune system helps you to cope with infectious diseases. Some ways to boost your natural immune system are:

- Eating healthy when possible
- Considering taking vitamin supplements, if you can't get adequate nutrition through your diet, and your healthcare providers recommend them
- Staying active, exercising regularly, and maintaining a healthy weight
- Addressing stress and maintaining good mental health. Mental health affects how we think, feel, and act.
- Nourishing spirit

Before colonization, the health of many Indigenous people was protected by an active lifestyle, a sense of belonging, customary laws, language and strong families and community. Access to traditional foods, plant medicine, ceremonies, Elders and healers, and a connection to the land contributed to Indigenous health and well-being.

Many Indigenous communities are working to reclaim these protections. Below are tips and tools that some communities are accessing to support health and wellness.

Public health is the health of a population as a whole. Public health measures, such as clean water and immunization, improve the quality and length of your life. Governments play an essential role in supporting health. Canada has national, provincial, territorial, and municipal public health agencies responsible for implementing measures that support public health.



Indigenous healthcare services in Canada comprise a complicated patchwork of policies, legislation, and agreements that assign responsibility to federal, provincial, municipal, and Indigenous governments in different ways in different parts of the country. For most off-reserve, status, and non-status Indigenous peoples, public healthcare services are financed by the national health insurance plan and administered through provincial or territorial governments. For on-reserve communities, the federal government finances and administers public health services through Indigenous Services Canada (ISC). Individual communities have negotiated to transfer varying levels of healthcare responsibility to the community or council level.

Many Indigenous peoples have inadequate access to public health services. There may also be factors that negatively affect health, such as lack of access to clean water. Indigenous peoples are, therefore, at higher risk of having more severe complications and dying from infectious diseases than non-Indigenous people.

The social determinants of health, like racism and discrimination, chronic stress, access to healthcare, education, housing, a clean physical environment, or a good income, also affect health quality. Indigenous, Black, and People of Colour (IBPOC) live within social contexts that create more health challenges than other people in Canada. For example, IBPOC experience more illness and more severe illness than other people in Canada.



Indigenous peoples are more likely to get an infectious disease and have a greater chance of having more complications, more severe complications, and deaths from infectious diseases than non-Indigenous peoples. For example, although the overall risk of developing active tuberculosis (TB) is very low, the rate of TB in Inuit Nunangat is over 300 times higher compared to the non-Indigenous population living in Canada.¹⁷ The rate of TB among First Nations living on reserve is over 40 times higher compared to the non-Indigenous population living in Canada.¹²

¹⁷ Indigenous Services Canada. Tuberculosis in Indigenous communities. Available from: <https://www.sac-isc.gc.ca/eng/1570132922208/1570132959826>