

Measles Outbreak for Health Care Professionals: Current Status

March 21, 2025

1:30-3:00 PM



Outline

1. Measles, Current Outbreak Status & Key Messaging
2. Immunization Rates
3. Case Management & Contact Tracing
4. IPC, Immunization and Testing Guidance
5. Q&A

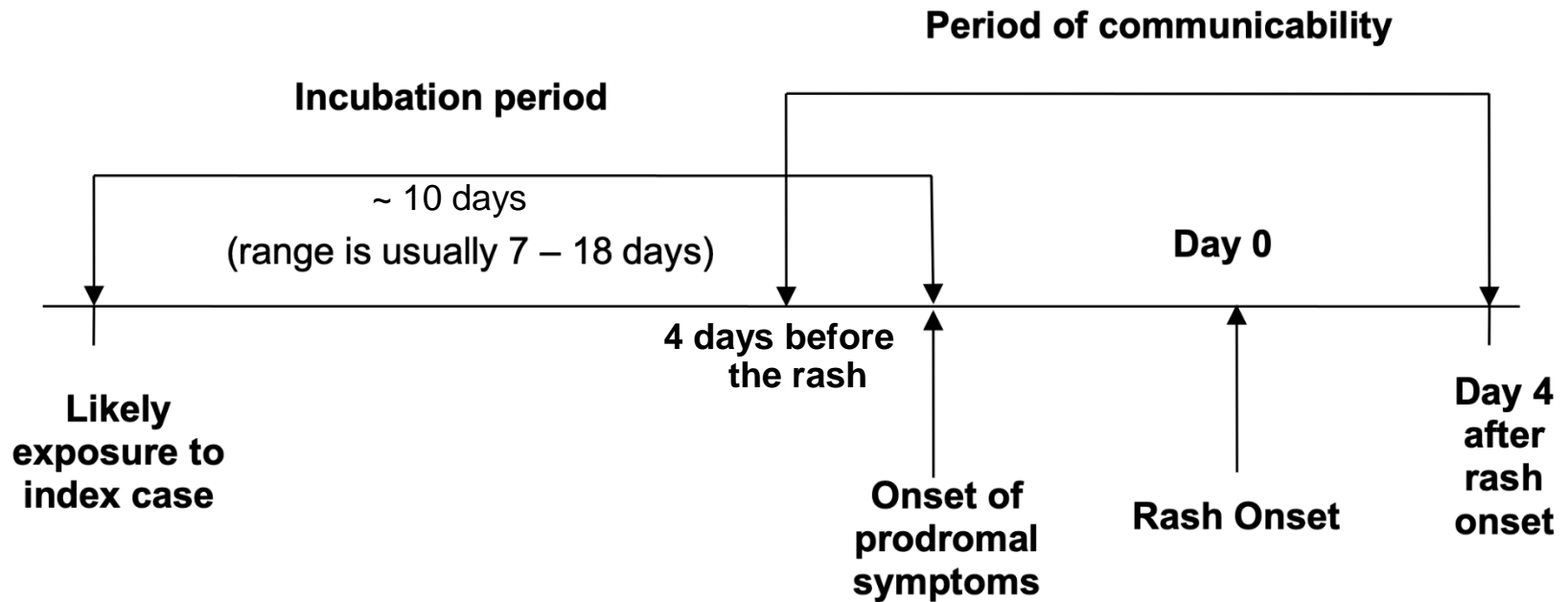
MOH Update: Measles, Current Outbreak Status & Key Messaging



What Is Measles?

- Measles is an airborne viral respiratory tract infection and is **vaccine preventable**.
- Measles is spread through airborne particles or contact with respiratory secretions.
- The virus can also linger in the air for up to two hours after an infected person has left the room, making exposure possible even without direct contact.
- There is a global surge in measles cases related to lower vaccination rates– this includes global destinations that Albertans commonly travel to, like many places in the United States and Europe.
- There has been a increase in the number of cases in Canada since 2024. Confirmed cases have been reported in Ontario, Quebec, Manitoba, Saskatchewan, British Columbia, and Alberta.

Incubation Period and Period of Communicability



What are the Signs and Symptoms?

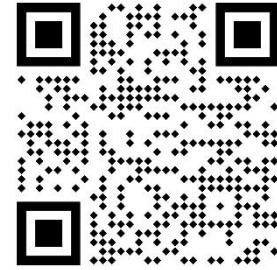
- **PRODROME:**
- Symptoms can appear 1-3 weeks after being infected with the virus.
 - Fever
 - Conjunctivitis
 - Cough
 - Runny nose
 - Koplik Spots (small white spots inside the mouth)



What are the Signs and Symptoms?

- **RASH:**

- Appears 3 to 7 days after symptoms begin
- Flat red area with small bumps
- Not itchy
- Begins on the face behind the ears
- Within 24 to 36 hours, it spreads over the the trunk and extremities (including palms and soles)
- This rash can last 4 to 7 days



Measles Images



What are Measles Complications?

- Approximately 30% of reported measles cases have one or more complications
- Severe complications, while rare, can result from a measles infection
 - Respiratory failure
 - Encephalitis
 - Death
- Long-term complications of encephalitis can include:
 - Blindness
 - Deafness
 - Intellectual disability
 - Subacute sclerosing panencephalitis (7-10 years after recovering from measles)
- Pregnant individuals infected with measles can experience miscarriages and premature labour.

Why The Concern? *Measles is Serious!*

Highly transmissible

- Airborne transmission
- 90% secondary attack rate

High rate of complications

- Otitis media
- Pneumonia
- Encephalitis
- Sub-acute sclerosing pan-encephalitis & long-term immune suppression

High rate of hospitalization

- Can expect 10% and up to 20%
- Need for ++ isolation capability

High risk groups

- Young children
- Pregnant women
- Immunocompromised persons

High rate of vaccine coverage needed for herd immunity

- 95%

Following public health guidance/measures is key!

Outbreak Current Status

- On March 9, 2025, an outbreak of measles was declared in Northern Alberta
- Immunization and outreach activities are underway.

ZONE	TOTAL CONFIRMED MEASLES CASES
Edmonton	4
Calgary	2
Central Zone	0
North Zone	8
South Zone	0
ALBERTA	14

Current Status: Canada

As of March 1, 2025:

- 173 confirmed cases have been reported in Canada
- 140 reported by the province of Ontario
- 26 reported by the province of Quebec
- 5 reported by the province of Manitoba
- 2 reported by the province of British Columbia

In 2023: 12 confirmed cases were reported in Canada

In 2024: 146 confirmed cases were reported in Canada

Recommendations



Follow provincial guidelines/updates



Health Care Workers should ensure they have **two doses of a Measles-containing vaccine or previous Measles infection/immunity**

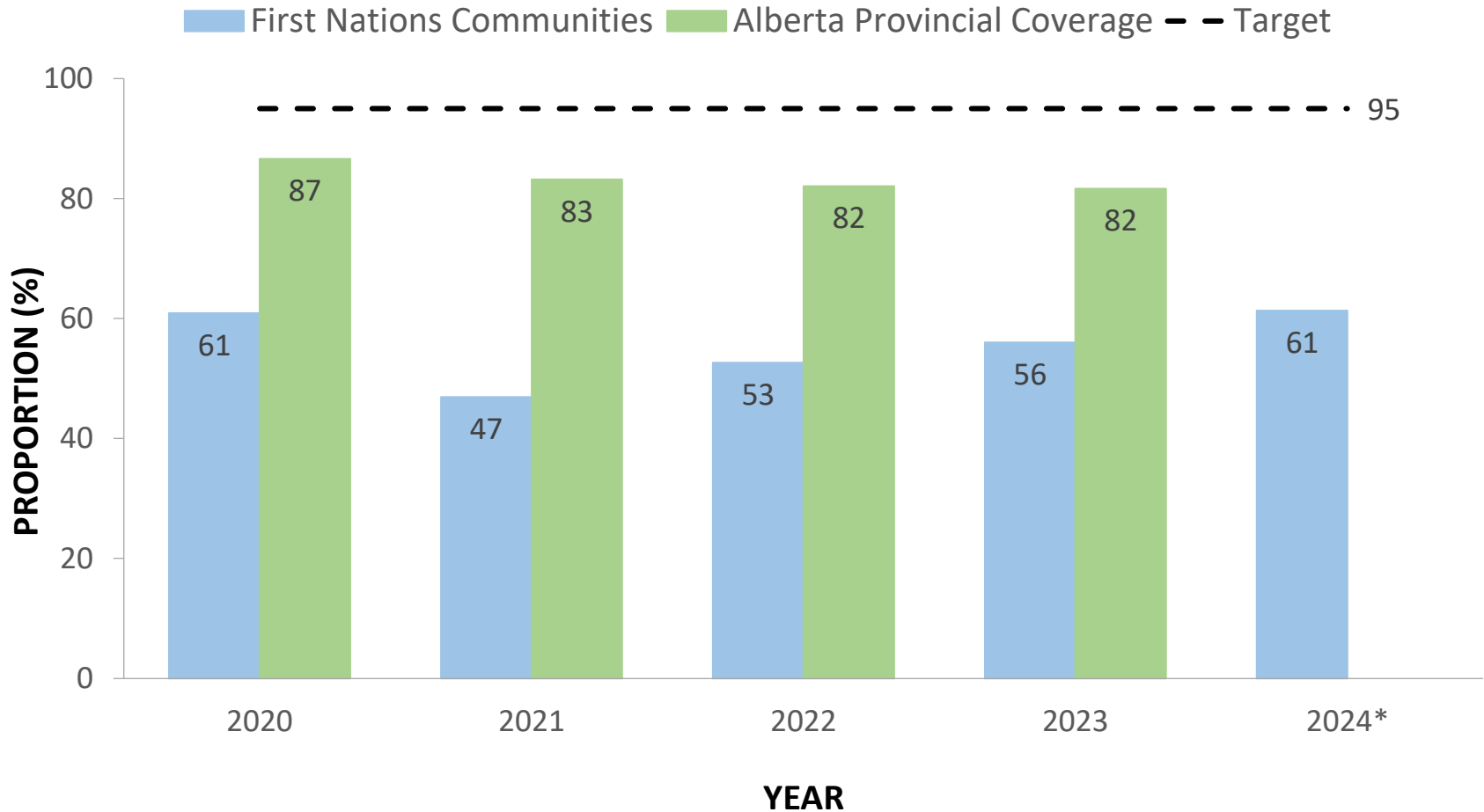


Vaccination is your best preparation!

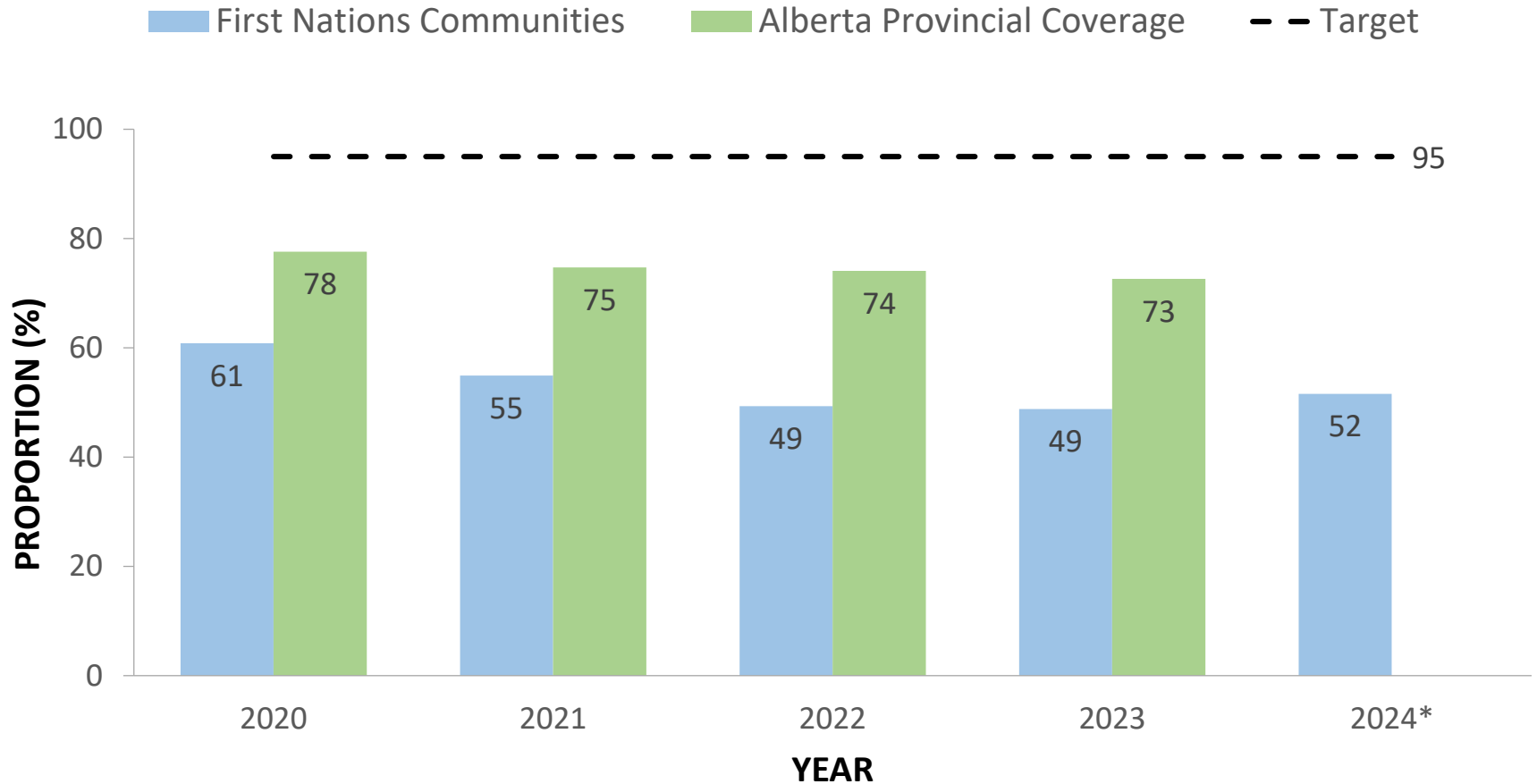
Immunization Rates & Immunization Information



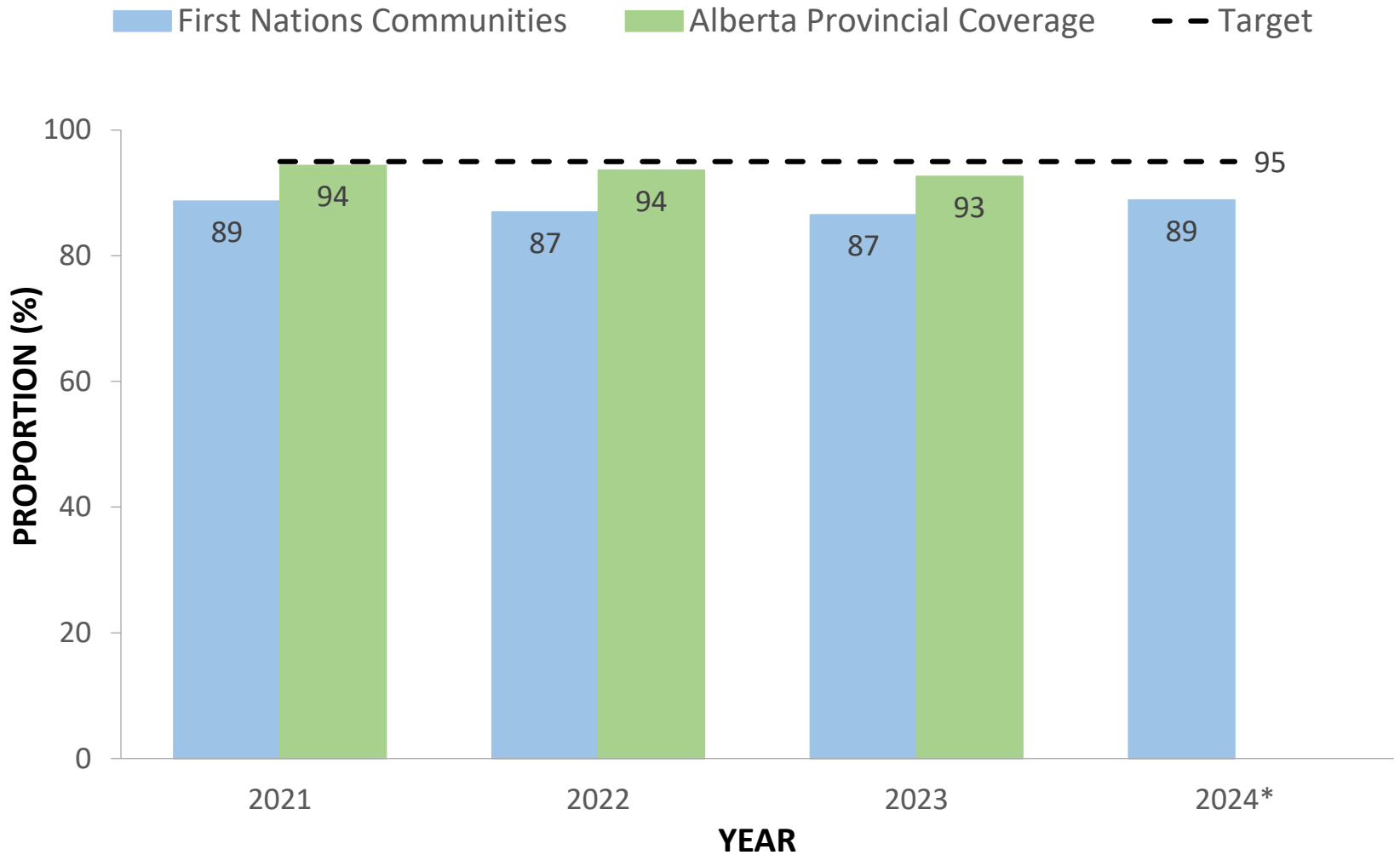
Measles Immunization Rates Dose 1 by Age 2



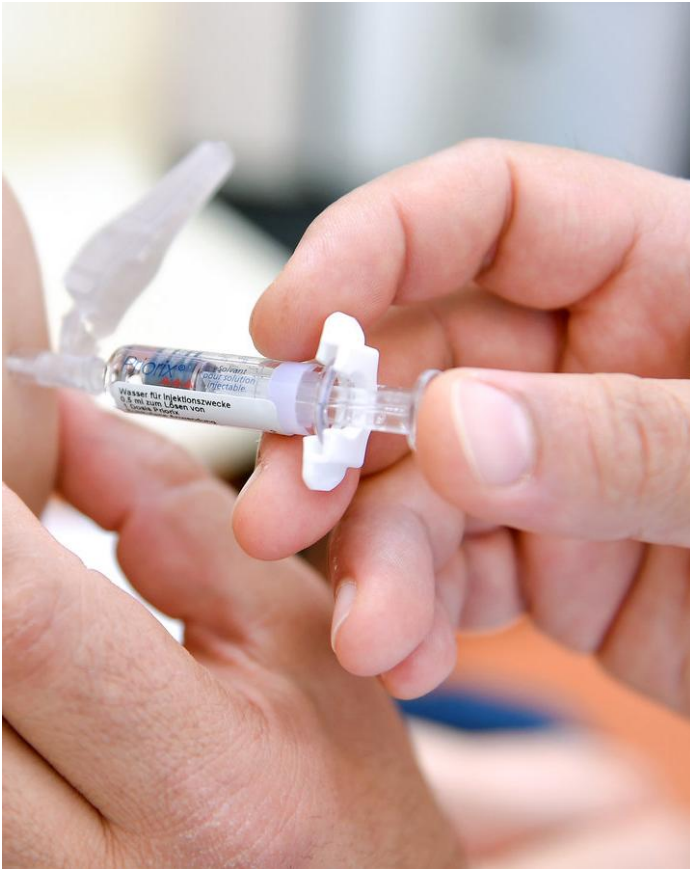
Measles Immunization Rates Dose 2 by Age 7



Measles Immunization Rates Dose 2 by Age 17



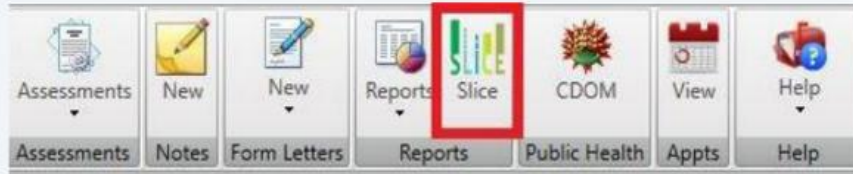
Key Points: Immunization Rates



- First Nations communities tend to have lower rates than Alberta's provincial coverage
- Immunization targets (95% for herd immunity) are not being met
- Higher immunization coverage in older children (ages 10-17) and adults
- Lower immunization coverage in infants and young children (ages 2-7)

You can access immunization data for your community!

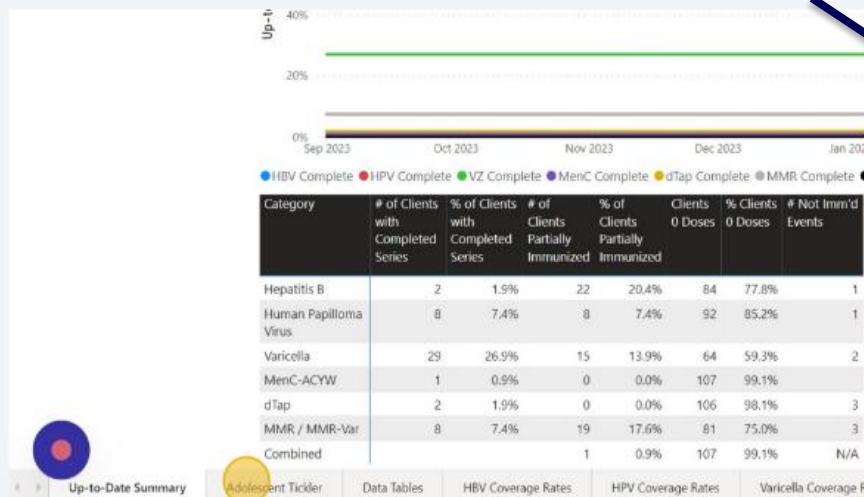
1 In CHIP, click the SLICE button on the ribbon.



- There are How-To resources available on OneHealth

- For support, contact helpdesk@okaki.com

2 A new window will launch called SLICE. Select the Adolescent Immunization Report. Once the report has loaded, click on "Adolescent Tickler" on the bottom left side of the screen.



This is an example of the Adolescent Tickler (ages 10-17) within the SLICE Adolescent Report, but you can access other ages using the Search Tool Window in CHIP.

When is someone considered “immune”?

- Documentation of 2 doses of measles vaccination* [△]

OR

- Documented history of lab-confirmed measles*

OR

- Laboratory evidence of measles immunity*

OR

- Were born before 1970

*Health care workers need to meet one of these three criteria

[△] Even if IgG is negative for an immunocompetent individual

Measles Containing Vaccines

- **MMR**

- Priorix (GSK)
- MMR II (Merck)

- **MMR-Varicella**

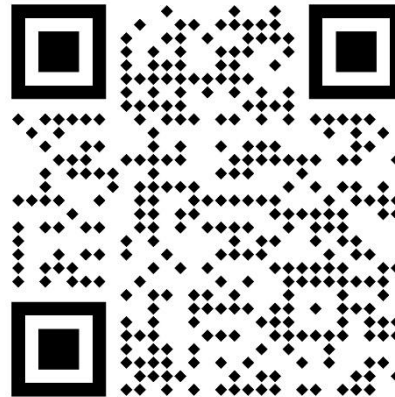
- Priorix-Tetra (GSK)
- ProQuad (Merck)

- Live attenuated vaccines
- Route: subcutaneous (SC)

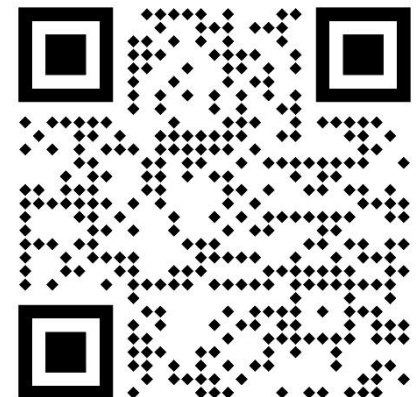
- Vaccine Efficacy:

- Single Dose given at 12 or 15 months of age: 85-95%

With a second dose, efficacy is almost 100%!



Biological Page MMR



Biological Page MMR-Var

Measles Vaccines

- **Routine Childhood Schedule**
 - 12 and 18 months old
- **Off Schedule born in or after 1970**
 - Two lifetime doses, after 1st birthday and minimum 4 weeks apart (3 month spacing recommended for MMR-Var)
- Some **contraindications** include
 - Primary or secondary immunodeficiencies
 - Pregnancy
 - Anaphylaxis or hypersensitivity to vaccine components
 - Solid Organ Transplant (SOT) recipients
 - Administration of immune globulins and/or blood products within the past 11 months

Immunization Guidance - ROUTINE

- **Infants 6 months of age up to including 11 months of age**
 - Candidates for a solid organ transplant
 - Traveling to any country outside of Canada
 - Traveling to or through areas where measles is circulating in Canada

Parts of Alberta

Refer to the vaccines biological page for updated information on areas where measles is circulating in Alberta

Southern Ontario Region

- *Norfolk County*
- *Oxford County*
- *Elgin County*
- *City of St. Thomas*

Infants receiving a dose before 12 months of age should receive TWO more doses following the routine childhood schedule, at least FOUR weeks apart!

Immunization Guidance- ROUTINE

- **Adults born BEFORE 1970:**

- Regardless of country of birth **are considered to have acquired natural immunity** to measles

❖ **EXCEPTIONS!**

1. Consider offering ONE dose of measles containing vaccine if travelling to or through areas where measles is circulating in Canada or travelling to any country outside of Canada who **DO NOT HAVE:**

- Documented history of 1 valid dose of measles-containing vaccine
- History of laboratory confirmed measles disease
- Serological evidence of measles immunity (measles IgG positive)

Immunization Guidance- ROUTINE

- **Adults born BEFORE 1970:**

- Regardless of country of birth **are considered to have acquired natural immunity** to measles

- ❖ **EXCEPTIONS!**

2. Offer TWO doses of a measles containing vaccine regardless of year of birth to **HEALTHCARE WORKERS** who DO NOT HAVE:

- Documented history of 2 valid doses of measles-containing vaccine
- History of laboratory confirmed measles disease
- Serological evidence of measles immunity (measles IgG positive).

Immunization Guidance- ROUTINE

- **Adults born BEFORE 1970:**

- Regardless of country of birth **are considered to have acquired natural immunity** to measles

❖ **EXCEPTIONS!**

3. Offer ONE doses of a measles containing vaccine regardless of year of birth to **POST-SECONDARY STUDENTS** who DO NOT HAVE:

- Documented history of 1 valid dose of measles-containing vaccine
- History of laboratory confirmed measles disease
- Serological evidence of measles immunity (measles IgG positive)

Immunization Guidance: Changes During an outbreak

Expanded use of measles-containing vaccines offered during an outbreak

If an individual does not have evidence of past immunization, measles infection, or serologic evidence of immunity, immunization can be offered as listed here

Age	Schedule	Vaccine
6-11 months	One Dose before 12 months of age (Two additional doses still needed after 12 months of age) Refer to the vaccines biological page for updated information on areas where measles is circulating in Alberta	MMR
12 months to 12 years	Two doses after 12 months of age. Minimum interval 4 weeks.	MMR-Var OR MMR can be used
13 years and up	Two doses after 12 months of age. Minimum interval 4 weeks.	MMR
Born before 1970	Generally, adults born before 1970 are considered immune. See the biological pages for adults born before 1970 who may be eligible for pre-exposure immunization	MMR

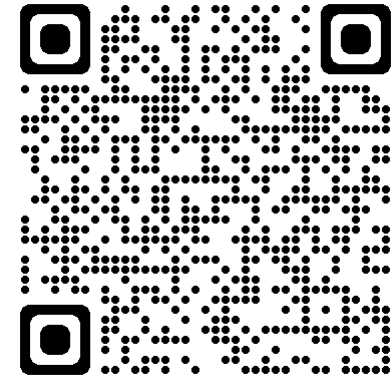
Post-Exposure Prophylaxis: Measles Containing Vaccine

- **The vaccine can be given after exposure to measles!**
 - Individuals who are exposed to measles may be protected from disease if they are given a measles containing vaccine within 72 hours of their exposure.
 - MMR-Var: For individuals 12 months to 12 years of age
 - MMR: For individuals 13 years of age and older



How Can Patients Find Their Immunization History?

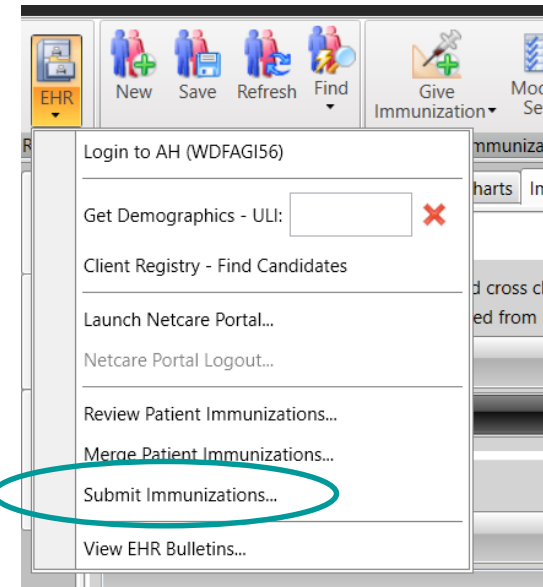
- Locating your own paper records, “yellow card”
- Ask the health centre
- MyHealth Records account
- Call 811, Health Link
- Call your local AHS public health office



MyHealth Alberta

- For immunizations in CHIP to be visible in MyHealth Records or seen by 811, they need to be submitted to ImmAri.

Remember to submit records regularly 😊



Additional Resources

- [OneHealth > Nursing > Nursing Education Immunization Resources](#)
- [Immunization Program Standards Manual | Alberta Health Services](#)
- [MyHealthAlberta | Immunization benefits and safety](#)
- [Immunize Canada | Counselling the Public](#)
- [Vaccine Hesitancy Guide](#) (has sections for pediatric vaccine hesitancy and for working with patients that have experienced trauma from the health system)
- [CPHA | Building Vaccine Confidence in a Digital Age \(course\)](#)
- [National Collaborating Centres for Indigenous Health \(NCCIH\) and Infectious Diseases \(NCCIH\): Video on vaccine confidence](#)
[Vaccine Confidence on Vimeo](#)

Case Management & Contact Tracing



Case and Contact Management: Overview

Confirmed Case:

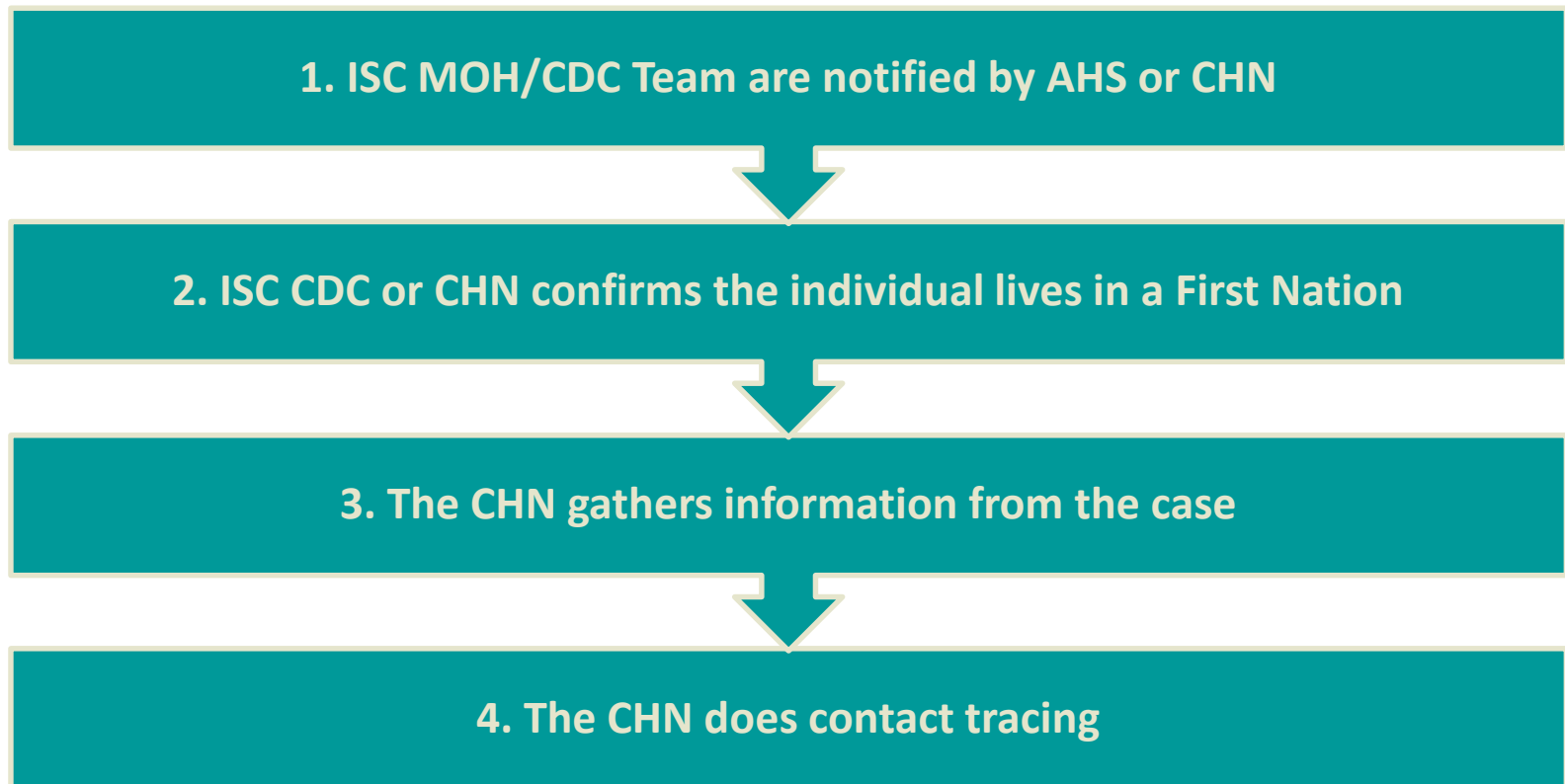
- Obtain disease and immunization history
- Determine contacts
- Provide education to prevent disease transmission
- Case may be excluded from public places by MOH until non-infectious

Contacts of Case:

- Provide education to prevent disease transmission
- Determine immunization history, health status, and symptom status
- Identify those at high risk for measles complications
- Arrange specimen collection for symptomatic contacts
- Contacts may be excluded from public spaces by MOH
- Post-Exposure Prophylaxis

Case Management

All case management and contact tracing is completed according to the *Alberta Public Health Disease Management Guidelines: Measles*



3. The CHN gathers information from the case

- ***Measles Case History:***
 - Demographics
 - Symptoms
 - Symptoms onset date
 - Rash onset date
 - Sick contacts
 - Travel history
 - Who they may have had contact with since they acquired it
 - Living arrangements
 - Their susceptibility to measles and measles vaccine history
 - The outcome (hospitalized, recovered, etc.)
 - Determine infectious period

4. The CHN does contact tracing

- **Document:**

- Contact's demographics
- Vulnerable group? (<1 year of age, pregnant, immunocompromised)

- Type of exposure to the individual with measles
 - Household contact?
 - Face-to-face contact with the case?
 - Shared confined air space with the case or in the same air space as the case within 2 hours?
 - Attend the same school or facility as the case?

- When they were in contact with the case?
- Any symptoms?
- Whether they are immune to measles or had measles vaccine?

4. The CHN does contact tracing

- **Determine who is susceptible to measles**
- Individuals are susceptible if they **do not have** evidence of immunity to measles, which includes:
 - Two doses of measles-containing vaccine; or
 - Laboratory evidence of immunity (i.e. positive IgG antibody); or
 - Laboratory confirmation of disease or
 - Not a HCW and is born before 1970

Contact Management

- Depending on the timelapse from exposure, age, and health status, **susceptible contacts of a measles case may:**
 - **Receive MMR or MMR-Var vaccine within 72 hours of exposure**
- **OR**
- **Immune Globulin (Ig)** if the contact has been identified within 3 to 6 days after the exposure
- **Be excluded from public places for up to 21 days** or until they can demonstrate an acceptably low risk for infecting others through serology and/or prophylaxis.

Contact Management

MMR or MMR-Var Vaccine for Susceptible Contacts

- Susceptible immunocompetent contacts (without contraindications) 6 months of age and older should receive MMR vaccine OR MMR-Var vaccine (if 12 months to 12 years of age)
- This includes children between 12-18 months of age who have received one dose of vaccine and are considered up-to-date, ensuring the minimum interval since the previous dose.
- **The vaccine should be administered within 72 hours of exposure** and should not be delayed pending serology results.
- If the measles containing vaccine is administered **more than 72 hours** after exposure, it may not provide protection against the current exposure but **would offer protection against subsequent exposures.**

Contact Management

Immune Globulin for Susceptible Contacts

- Immune Globulin is only considered to the following susceptible contacts if recommended by the MOH
 - immunocompromised people
 - pregnant individuals
 - infants 6–12 months of age who cannot receive MMR vaccine within 72 hours of exposure
 - All infants < 6 months of age
 - HIV Infected Persons
 - Others may be considered, on a case-by-case basis in consultation with the MOH
- Immune globulin comes in two forms **IMIG** (ideally weigh <30 kg) and **IVIG** (weigh > 30 kg)
- Ideally immune globulin is given **within 72 hours of exposure** to measles and is usually only offered **up to 6 days following exposure**

Summary of Post-Exposure Prophylaxis

Appendix 3: Immunoprophylaxis of Susceptible Contacts Exposed to Measles Virus

Time Since First Exposure	< 6 months of age ^(A)	≥ 6 months to < 12 months of age	≥ 12 months of age for whom MMR vaccine is safely indicated		High risk contacts ≥ 6 months of age with a contraindication to MMR vaccine (e.g., pregnant, some immunocompromised individuals ^(G))
			Unimmunized	History of one dose of measles vaccine ≥4 weeks ago	
≤ 72 hours	Ig ^(A)	MMR vaccine ^(B)	MMR vaccine	MMR vaccine ^(E)	Ig
4 – 6 days	Ig ^(A)	Ig ^(C)	Ig may be considered on a case-by-case basis ^(C,D)	MMR vaccine ^(F)	Ig ^(C)
≥7 days	N/A	N/A	MMR vaccine ^(F)		N/A

Contact Management

Exclusion:

- Typically, exclusion is the period of five days after first exposure, up to 21 days after the last exposure, or until the individual:
 - Provides written documentation of two valid doses of vaccine given before their first exposure.
 - Confirms through IgG blood tests that they are immune to measles.
 - Receives post-exposure immunization in the appropriate timeframe after exposure.

IPC & Masking Guidance



Updated Masking Guidance

- Where possible, only **immune staff should provide care** for known or suspected cases of measles.
- All healthcare workers (HCW) managing/assessing/entering a room with clients known or suspected to have measles are recommended to wear a fit-tested, seal checked N95 respirator as part of Airborne Precautions **regardless of immune status.**
- Patients (& visitors) with respiratory symptoms are recommended to wear a medical mask while in the facility.

Infection Protocol & Control

- After the client has left:
 - Keep the room door closed for a minimum of 2 hours to allow the air to be cleared of airborne particles.
 - If entry is required before minimum settle time has been reached, staff must wear a fit-tested N95 respirator (regardless of immune status), and door must remain closed.
 - The room may be entered after the air clearance time has lapsed.
- Measles can remain active on surfaces or objects for up to two hours
 - Room surfaces and equipment cleaning/disinfection is required using approved products and procedures.
 - Commercial disinfectant that has a Drug Identification Number (DIN) and a virucidal claim
 - E.g. Caviwipes, Super Sani Cloths, and Oxivir TB (as long as the indicated contact time is followed - this can be found on the product label).

Questions and Conversations with the Medical Officers of Health



MOH Questions & Scenarios: Health Centre Guidance

What should you do if you think a patient has measles, or was exposed to measles?

If a patient calls with

exposure to suspected or known measles OR

Fever $>38.3^{\circ}\text{C}$ and generalized rash and associated symptoms (cough, kolpik spots)

1. Advise them to isolate and avoid contact with others, except to access medical care.
2. Help arrange for clinical assessment, if possible
E.g. family physician, calling 811, or EMS if they need urgent care.
3. Advise them to call ahead before visiting any healthcare facility

If you have a strong suspicion of measles, you can call CDC or the ISC MOH-on-call for direction

MOH Questions & Scenarios: Health Centre Guidance

What are the infection prevention/control precautions for Health Centres for possible measles cases?

1. Immediately have the client put on a procedure mask.
 2. Do not have the client to stay in the waiting room.
 3. Quickly place the client in private clinic room and close the door
 - If a private room with a door is not available find a non-traditional care space that can be enclosed to care for client (i.e. office with a door)
 4. Place an airborne precautions sign on door of room ensuring it is visible on entry
- Visitors and staff should not enter unless they have immunity to measles
- ***Immediately notify the-MOH on call of all suspect cases 780-218-9929***

MOH Questions & Scenarios: Health Centre Guidance

- **For all assessing a suspect or confirmed measles case, airborne precautions with routine practices must be used:**
 - Fit-tested, seal checked N95 respirator; and
 - Face shield or eye protection; and
 - Gown; and
 - Gloves.
 - Dedicate any medical equipment to the isolated client, clean and disinfect shared equipment after use.

MOH Questions & Scenarios: Rash Presentation

You receive a phone call from a parent/guardian who just returned from local travel in Alberta.

They describe that their child has been unwell and recently developed a rash.

What are important questions to ask the parent/guardian about the clinical presentation?

MOH Questions & Scenarios: Rash Presentation

You receive a phone call from a parent/guardian who just returned from local travel in Alberta. They describe that their child has been unwell and recently developed a rash.

What are important questions to ask the parent/guardian about the clinical presentation?

- a) What does the rash look like? (maculopapular vs. other)
- b) How has the rash location changed over time ?
- c) Does the child have a fever? If so, when did it start.
- d) Any other symptoms? (conjunctivitis, respiratory, gastrointestinal, etc.)

(General symptom history: Description, duration, changes over time, other symptoms)

MOH Questions & Scenarios: Rash Presentation

You receive a phone call from a parent/guardian who just returned from local travel in Alberta.

They describe that their child has been unwell and recently developed a fever and cough, then a rash.

What are other questions that are helpful to ask?

MOH Questions & Scenarios: Rash Presentation

You receive a phone call from a parent/guardian who just returned from local travel in Alberta.

They describe that their child has been unwell and recently developed a fever and cough, then a rash.

What's are other questions that are helpful to ask?

- a) Any recent antibiotic usage?
- b) Any infectious contacts recently?
- c) Travel history?
- d) Vaccine history?

MOH Questions & Scenarios: Rash Presentation

You receive a phone call from a parent/guardian who just returned from local travel in Alberta.

They describe that their child has been unwell and recently developed a fever and cough, then a rash.

You determine the child needs to be seen in the Health Centre. What would you tell the parent/guardian to prepare for the visit?

MOH Questions & Scenarios: Rash Presentation

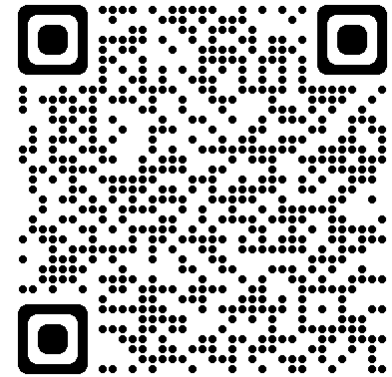
You receive a phone call from a parent/guardian who just returned from local travel in Alberta. They describe that their child has been unwell and recently developed fever and cough, then a rash.

You determine the child should be seen in the Health Centre (or another health facility). What would you tell the parent/guardian to prepare for the visit?

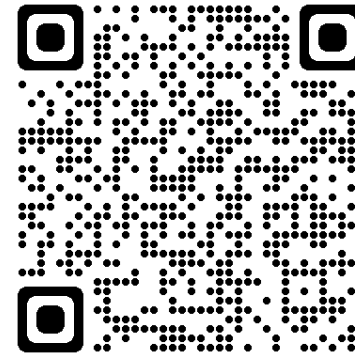
- a) The parent/guardian should call before they arrive
- b) If possible, have other children stay at home.
- c) The child, and anyone with respiratory symptoms, will be asked to wear a procedure mask, if able.
- d) The child, and those with them, will be placed in a closed room (if possible). They should not be stay wait in a waiting area.

Additional Measles Resources

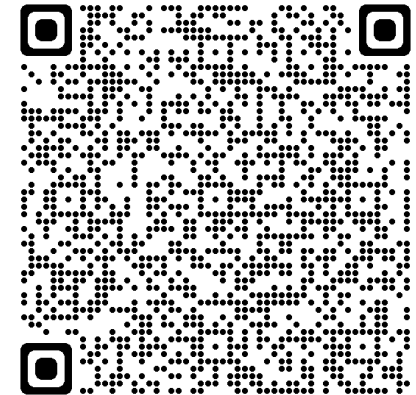
Indigenous Services Canada:
Don't Wait, Vaccinate! Measles Fact Sheet



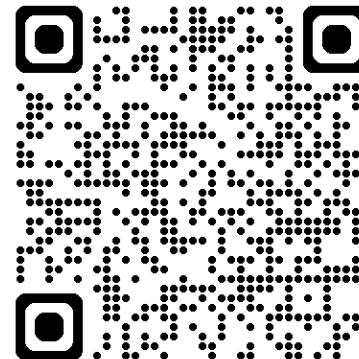
Dr. Chris Sarin's Video on Measles



Immunize Canada's Guide for Immunizers



One Health | Health Emergencies
(Public-facing resources)



Additional Questions?

- ***VCHELP@FNTN.CA***



Acknowledgements

Dr. Chris Sarin (he/him), Senior Medical Officer of Health – ISC-AB

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