HALTON REGION PUBLIC HEALTH • Office of the Medical Officer of Health

TEL: 905-825-6000 • TOLL FREE: 1-866-442-5866 • FAX: 905-825-1444

TO: Halton Physicians, Nurse Practitioners, Emergency Departments

FROM: Dr. Joanna Oda, Associate Medical Officer of Health

DATE: April 30, 2024

RE: Two Additional Measles cases confirmed in Halton

QUICK FACTS

- Halton Public Health is investigating two cases of confirmed measles in unimmunized children. One case is travel-related; the second is epi-linked to the first. Exposure sites include Maple Grove Public School on April 11th, 2024. Please refer to the media release for details, including additional exposure sites.
- Public Health will offer a limited number of measles vaccine clinics for staff and students of Maple Grove Public School. Details will be sent through the school.
- Take the following steps to prepare to respond to individuals with recent exposure:
    - Immediately report all suspect or confirmed cases of measles infection to Halton Region Public Health by calling 311 or 905-825-6000. Facilitate timely testing, but do not wait for laboratory confirmation before reporting.
    - Help prevent community spread by ensuring that children who may have missed dose(s) of measles-containing vaccine during the pandemic years are brought up to date as soon as possible.
    - Health care workers without documentation of proof of immunity, regardless of year of birth, will be excluded from work if deemed to be exposed to a confirmed measles case.
    - Ensure all staff in your office/clinic have documentation of either two doses of measles-containing vaccine OR laboratory evidence of immunity.
- Last week's Measles webinar for healthcare professionals contains details on diagnosing and testing for measles and can be watched online
  Public Health Updates for Halton Physicians: Focus on Measles April 24, 2024

KEY MESSAGES FOR HEALTHCARE PROVIDERS

- Include measles in your differential diagnoses particularly if patient presents with symptoms including fever, cough, coryza or conjunctivitis and generalized maculopapular rash and:
    - Is unimmunized or under-immunized, OR
    - They or their household member has recently traveled, OR
    - Had contact with a known case or exposure setting.

If you suspect measles infection in a patient:

1. Schedule and assess the patient at the end of day in a single room with the door closed if an airborne infection isolation room is not available to promptly isolate the patient.
2. Provide the patient with a medical mask if able to tolerate use.
3. Only health care workers with presumptive immunity to measles should provide care to patients with suspect/confirmed measles.
4. All health care workers should wear a fit-tested, seal-checked N95 respirator when entering the room and/or providing care for a patient with suspect/confirmed measles. Refer to PHO's Interim IPAC Recommendations for details. N95 masks are available for healthcare providers and can be ordered

from the PPE Supply Portal. More details on ordering from the PPE Supply Portal can be found in our September 23, 2023 Advisory.

5. Assess measles immunization status as recent vaccination can affect interpretation of diagnostic tests.
6. Provide specimen collection as per diagnostic testing section below.
7. Do not wait for lab confirmation.
    a. Immediately report any suspected or confirmed measles cases to Halton Region Public Health by calling **311 or 905-825- 6000**.
    b. Call Halton Region Public Health to facilitate the transport of specimens to the Public Health Ontario (PHO) laboratory in Toronto for timely testing.
8. Advise the patient to self-isolate until lab results are back.
9. After patient assessment, leave the door closed and do not use the exam room for at least two hours.
10. Thoroughly disinfect the examination room using routine cleaning practices.

Note: If you are referring a patient for further assessment or diagnostic testing, the receiving facility must be notified ahead of the patient's arrival to allow IPAC measures to be implemented.

Diagnostic testing

- PCR specimens are essential for diagnostic testing. If feasible, collect ALL of the following:
    - Nasopharyngeal swab (within 7 days of rash onset) **AND**
    - Throat swab (within seven days of rash onset) **AND**
    - Urine (within 14 days of rash onset)
- For suspect cases with a high index of suspicion, it may be warranted to test beyond the time periods noted above. Refer to PHO Measles-Diagnostic-PCR for further guidance.
- Serology testing (within 7 days of rash onset) alone is unreliable for diagnosis. Refer to PHO Measles-Serology for details.
- Clearly mark **"Suspect case of measles"** and **STAT** on each laboratory requisition for PCR or diagnostic serology. Complete all fields of the laboratory requisition form. Refer to PHO Measles-Diagnostic-PCR and PHO Temporary Priority Measles Submission Guidelines for information required for testing.
- All requisitions for testing should have checked off the "diagnosis" box and contain the following information: patient symptoms and onset date, exposure, travel, and vaccination history.
- Ensure your office has testing specimen containers/supplies available. Review expiry dates of supplies. Swabs are currently being distributed with vaccine orders. Swabs for Measles testing must be within the date of expiry, approval for extensions to expiry dates are only for COVID-19 and Influenza testing.
    - To order additional specimen collection supplies, use PHO's Requisition for Specimen Containers and Supplies . See PHO Kit and Test Ordering Instructions for more information.

Measles Immunization

- All Ontarians are eligible for **one or two publicly funded doses** of measles-containing vaccine depending on their age and risk factors. Refer to the Publicly Funded Immunization Schedule for Ontario for details on routine, high-risk and catch-up schedules.
- Ensure children who may have missed dose(s) of measles-containing vaccine are brought up to date as soon as possible.
- Request parents report their child's immunization to Halton Public Health.
- If immunization records are unavailable, immunization with measles-containing vaccine is preferred over serology. Refer to PHO Measles-Serology for details. Serology is not recommended before or after receiving MMR. If serology is inadvertently done, and the patient does not demonstrate immunity but has the required number of doses, re-immunization is not necessary.

- Travellers to destinations outside of Canada should ensure they are adequately immunized against measles prior to travel. Refer to Canadian Immunization Guide for recommendations.
- Orders for MMR vaccines, are starting to be filled with Priorix®. GSK has changed their packaging for this product. The diluent now comes in a prefilled syringe. Refer to the product monograph for instructions on how to reconstitute.
- The new package size for Priorix® is significantly larger (3.05cm x 17.78cm x 13.97 cm). Please keep this in mind when ordering to ensure your vaccine fridge can safely store quantities ordered.
- Vaccines can be ordered from Halton Region Public Health through the online Vaccine Order Form.

ADDITIONAL RESOURCES

1. Testing indications for measles, Public Health Ontario, April 10, 2024
2. Publicly Funded Immunization Schedules for Ontario June 2022, Ontario
3. Interim IPAC Recommendations and Use of PPE for Care of Individuals with Suspect or Confirmed Measles, Public Health Ontario, March 2024
4. Measles vaccine: Canadian Immunization Guide
5. Measles, Ontario College of Family Physicians, March 18, 2024,
6. Measles: Information for Health Care Providers, Public Health Ontario, 2nd Edition, March 15, 2024

Please report all suspected/confirmed cases of Diseases of Public Health Significance (only report COVID-19 cases occurring in high-risk settings) to Public Health immediately by calling 311, 905-825-6000 or toll free at 1-866-442-5866.

PLEASE PROVIDE A COPY TO ALL PHYSICIANS IN YOUR OFFICE AND/OR POST IN EMERGENCY DEPARTMENTS AND PHYSICIAN LOUNGES. IF YOU HAVE ANY ISSUES WITH THIS ATTACHMENT, PLEASE EMAIL DOCTORS@HALTON.CA.

Measles resources for healthcare professionals

General information about Measles

Measles resource for family physicians, Ontario College of Family Physicians, March 18, 2024

Measles: Information for Health Care Providers, Public Health Ontario, March 15, 2024

Infectious Disease Protocol for Measles, Ontario Ministry of Health, March 2024

Measles in Ontario surveillance report, Public Health Ontario

Testing for Measles

Measles – Diagnostic – PCR, Public Health Ontario

General test requisition, Public Health Ontario

Temporary priority measles submission guidelines, Public Health Ontario

Requisition for specimen containers and supplies, Public Health Ontario

IPAC

Interim IPAC recommendations and use of PPE for care of individuals with suspect or confirmed measles, Public Health Ontario, March 2024

Immunization

Measles vaccines: Canadian Immunization Guide, September 2020

Publicly Funded Immunization Schedules for Ontario, Ontario Ministry of Health, June 2022

Immunization of immunocompromised persons: Canadian Immunization Guide, September 2020

Summary of recommendations for primary care management after stem cell transplant, Cancer Care Ontario

Adverse Event Following Immunization (AEFI) fact sheet, Public Health Ontario

AEFI reporting form, Public Health Ontario

CARD (Comfort, Ask, Relax, Distract) Immunization resource, Immunize Canada

Patient Resources

Immunization Communication Tool, BC Centre for Disease Control

Reporting immunization to Halton Region Public Health, Halton Region

About Measles (one page tool for patients), Ontario College of Family Physicians, March 21, 2024

VaxFacts+ virtual clinic, one-to-one phone consultation with a doctor about vaccines, cancer screening and preventative health counselling

Immunize Canada, information about vaccines, vaccine-preventable diseases and more

April 24, 2024

Public Health Updates for Halton Physicians:

Focus on measles

Wednesday, April 24, 2024
7-8 p.m.

Protect your child against measles. UK: Health Education Council. circa 1970s. Source: Wellcome Collection.

The webinar will begin at 7 p.m.

Indigenous Land Acknowledgement

Boozhoo, She:kon , Tanshi, Greetings!

Halton Region acknowledges the Treaty Lands of the Mississaugas of the Credit First Nation as well as the Traditional Territory of the Haudenosaunee, Huron-Wendat and Anishinabek on which we gather.

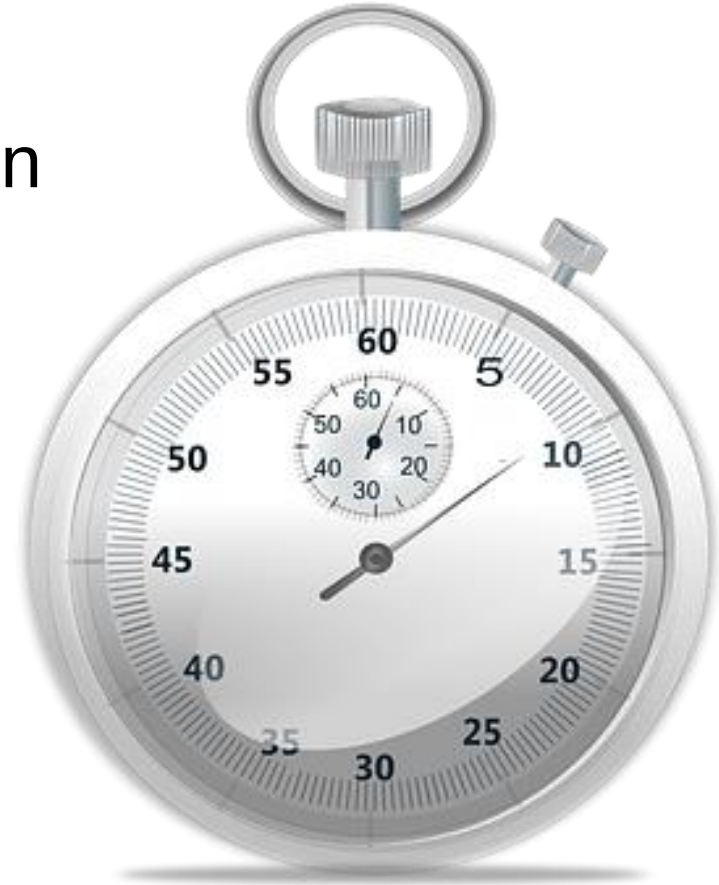
In stewardship with Mother Earth and the enduring Indigenous presence connected to these lands we acknowledge the Indigenous Nations of the past, present and future.

In the spirit of ally-ship and mutual respect, we will take the path of Truth and Reconciliation to create change, awareness and equity as we strive to elevate the collective consciousness of society.

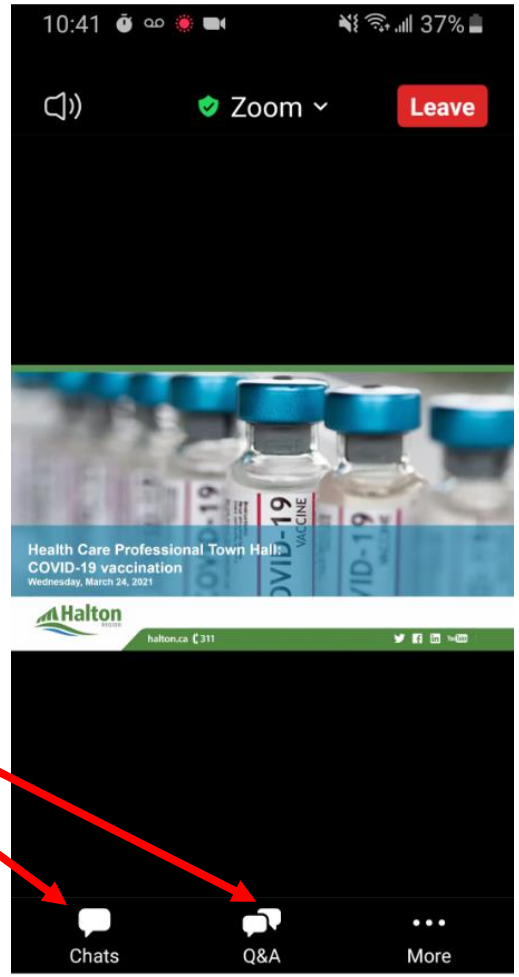
Miigwetch, Nia:wen, Marsi, Thank you

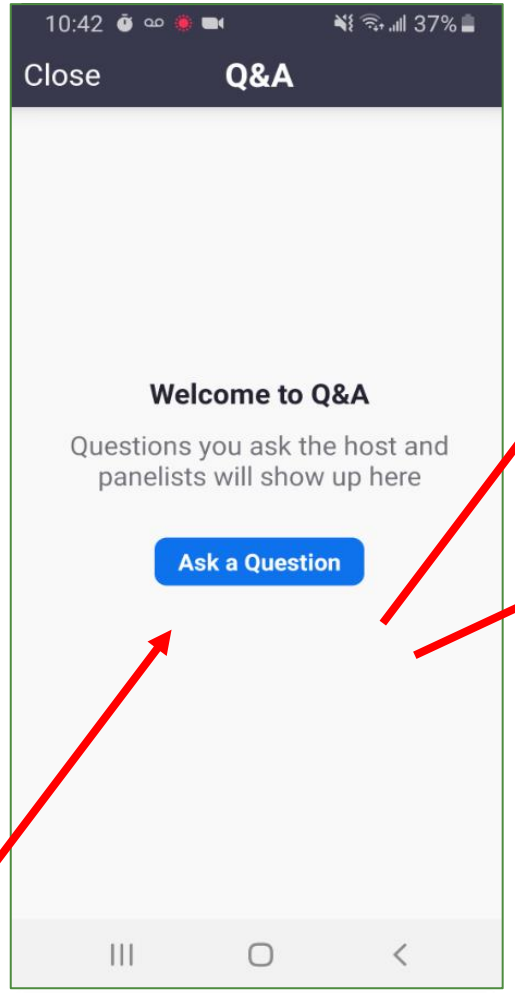
Agenda

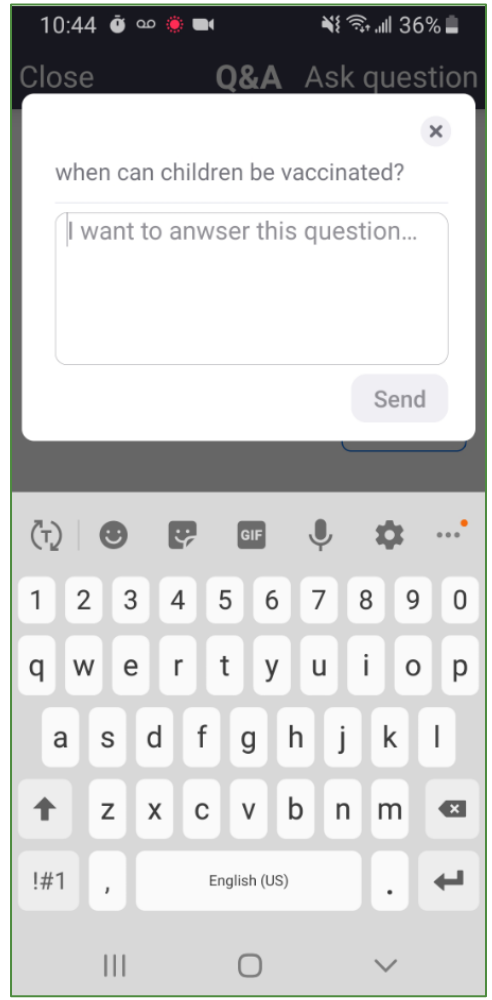
- Housekeeping
- Brief message from Halton Physician Association
- Dr. Joanna Oda, Associate Medical Officer of Health, Halton Region Public Health
  - Measles in Halton and Ontario
  - Symptoms, diagnosing and reporting
  - Risk and immunization eligibility
  - Local support and resources
- Question and answer session



Housekeeping







Use the Q&A function to ask, vote or comment on a question

Physicians supporting physicians

Dr. Joanna Oda

Associate Medical Officer of Health

Halton Region Public Health

Learning Objectives

Overall series learning objective:

- By attending the Public Health Updates for Halton Physicians series, participants will be able to identify and discuss relevant and recent information about approaches to the prevention, diagnosis and management of key public health issues impacting their family medicine practice in both rural and urban settings.

By the end of this session, participants will be able to:

1. Understand what the data tells us about measles in Halton and Ontario
2. Identify who is at greatest risk for contracting measles
3. Describe measles symptoms and steps to take if measles is suspected
4. Explain routine and high risk measles immunization recommendations
5. Know where to access resources and tools to support clinical practice

Disclosure of Financial Support

- This program is hosted and organized by Halton Region Public Health.
- I am a paid employee with Halton Region Public Health.

- **Potential for conflict(s) of interest:**
  - Halton Region Public Health receives funding from the Province of Ontario who also provides funding for public health research, programs and resources that may be discussed today.

Mitigating Potential Bias

All data, resources and recommendations presented are based on current scientific literature and data.

While some treatments may be referred to by their pharmaceutical name, there is no relationship between us and the pharmaceutical companies referenced in this presentation.

Measles in Ontario and around the World

The comeback no one wanted

Measles cases in Canada are increasing, Canada's chief public health officer warns

MARCH 27, 2024

Toronto reports two more measles cases. Use our tool to check the spread in Canada

The Star has tracked 61 measles cases in Canada, drawing on reports and media releases from provinc
nd local public health agencies. The tracker is updated on Fridays.

It's 'critical' to catch up on measles vaccinations to stem outbreaks, senior WHO official says

MARCH 19, 2024

CNN Health | Life, But Better | Fitness | Food | Sleep | Mindfulness | Relationships

Recent increase in measles cases threatens elimination status in the US, CDC says

By Deidre McPhillips, CNN
4 minute read · Updated 1:44 PM EDT, Thu April 11, 2024

World Health Organization | Health topics | Our work | Newsroom | Data

A 30-fold rise of measles cases in 2023 in the WHO European Region warrants urgent action

14 December 2023 | News release | Reading time: 2 min (675 words)

West Virginia confirms first measles case since 2009

CHARLESTON, W.Va. (AP) — A West Virginia hospital has confirmed the first known case of measles in the state since 2009, health officials said Monday.

April 22, 2024 | 1 min read

Measles has exploded in Europe. Clinicians say it's only a matter of time before outbreaks hit Canada

Global travel, slumping vaccination rates have led to post-pandemic infections surge

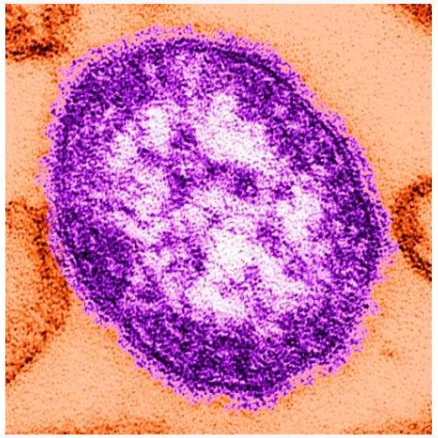
Lauren Pelley, Amina Zafar · CBC News · Posted: Feb 03, 2024 4:00 AM EST | Last Updated: February 3

Quebec successfully pushes back against rise in measles cases

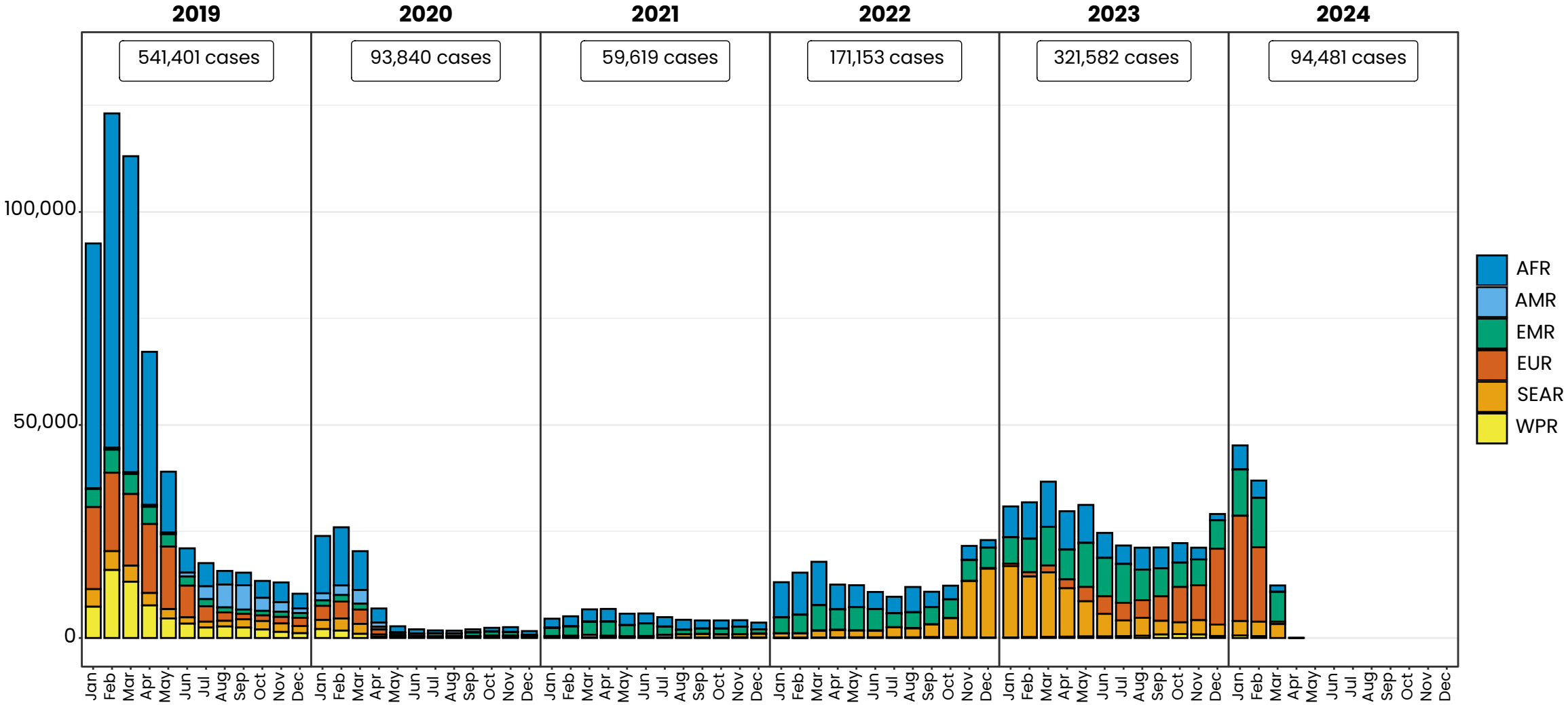
Some schools with low vaccination rate were brc

CBC News · Posted: Apr 18, 2024 4:00 AM EDT | Last Updated:

Case of measles confirmed in Halton Region with possible health clinic exposure

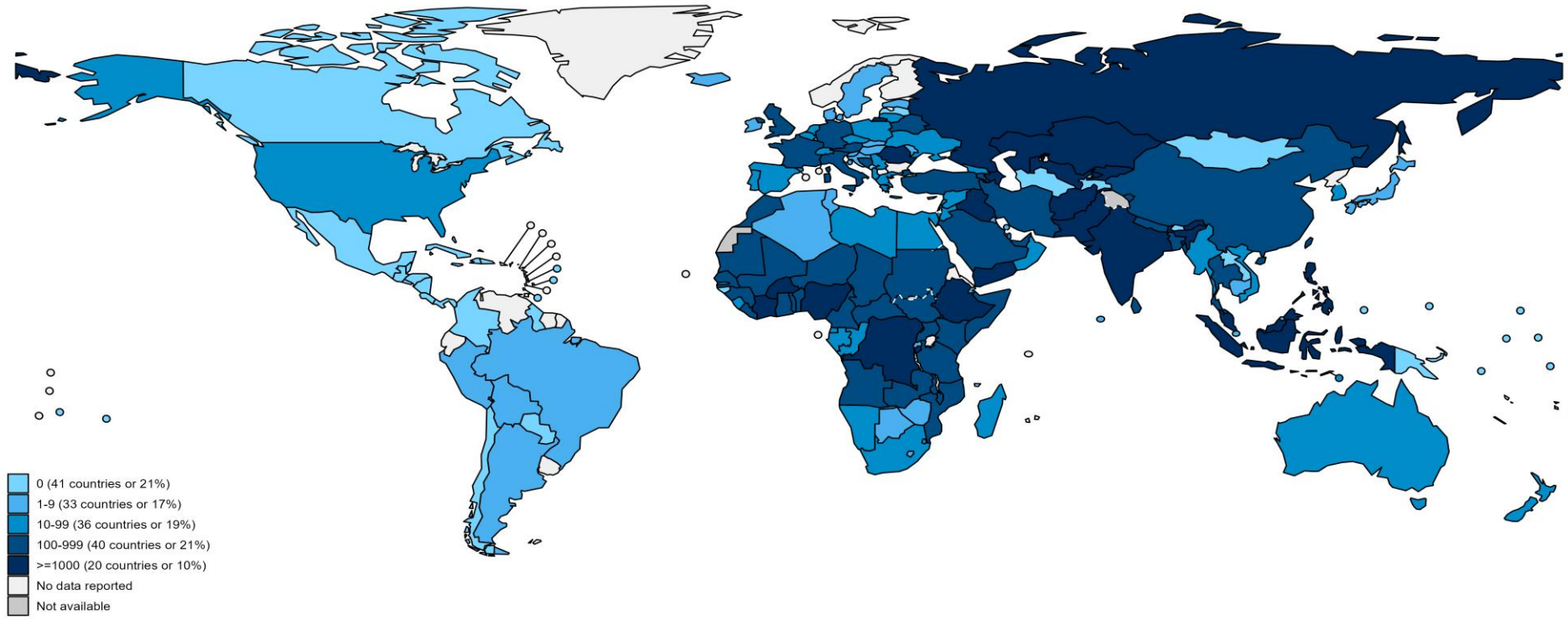


Measles case distribution by month and WHO Region (2019-2024)



Notes: Based on data received 2024-04 - Data Source: IVB Database - This is surveillance data, hence for the last month(s), the data may be incomplete.
World Health Organization. Immunization Analysis and Insights – Provisional monthly measles and rubella data. 2024.

Number of Reported Measles Cases (Last 6 months)



Country	Cases*
Kazakhstan	27,280
Azerbaijan	26,744
Iraq	20,469
India**	13,523
Yemen	12,785
Kyrgyzstan	10,024
Pakistan	9,575
Russian Federation	9,373
Ethiopia	6,724
Indonesia	4,380

World Health Organization

Data source: IVB Database

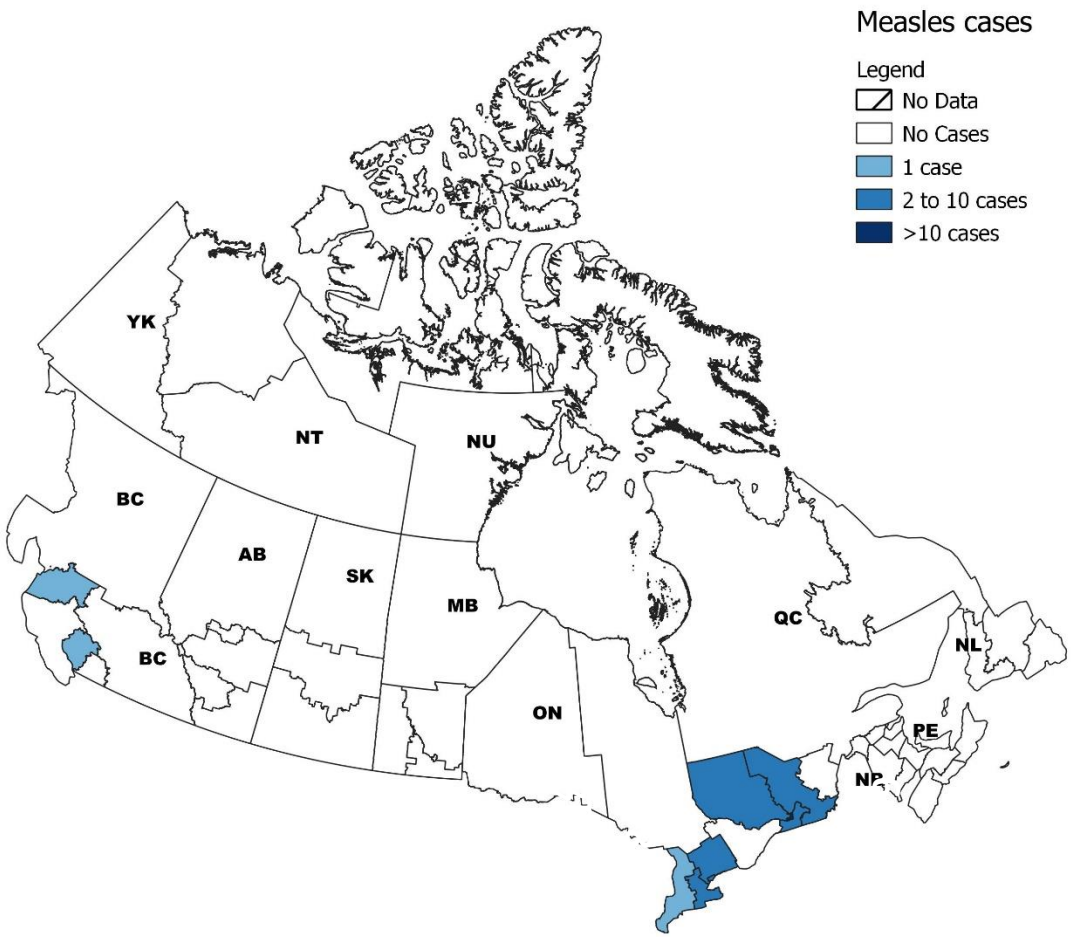
Disclaimer: The boundaries and names shown and the designations used on this map do notimply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

0 875 1750 3500 Kilometers

Notes: Based on data received 2024-04 - Surveillance data from 2023-09 to 2024-02 - * Countries with highest number of cases for the period - **WHO classifies all suspected measles cases reported from India as measles clinically compatible if a specimen was not collected as per the algorithm for classification of suspected measles in the WHO VPD Surveillance Standards. Thus numbers might be different between what WHO reports and what India reports.

World Health Organization. Immunization Analysis and Insights – Provisional monthly measles and rubella data. **2024.**

Measles in Canada

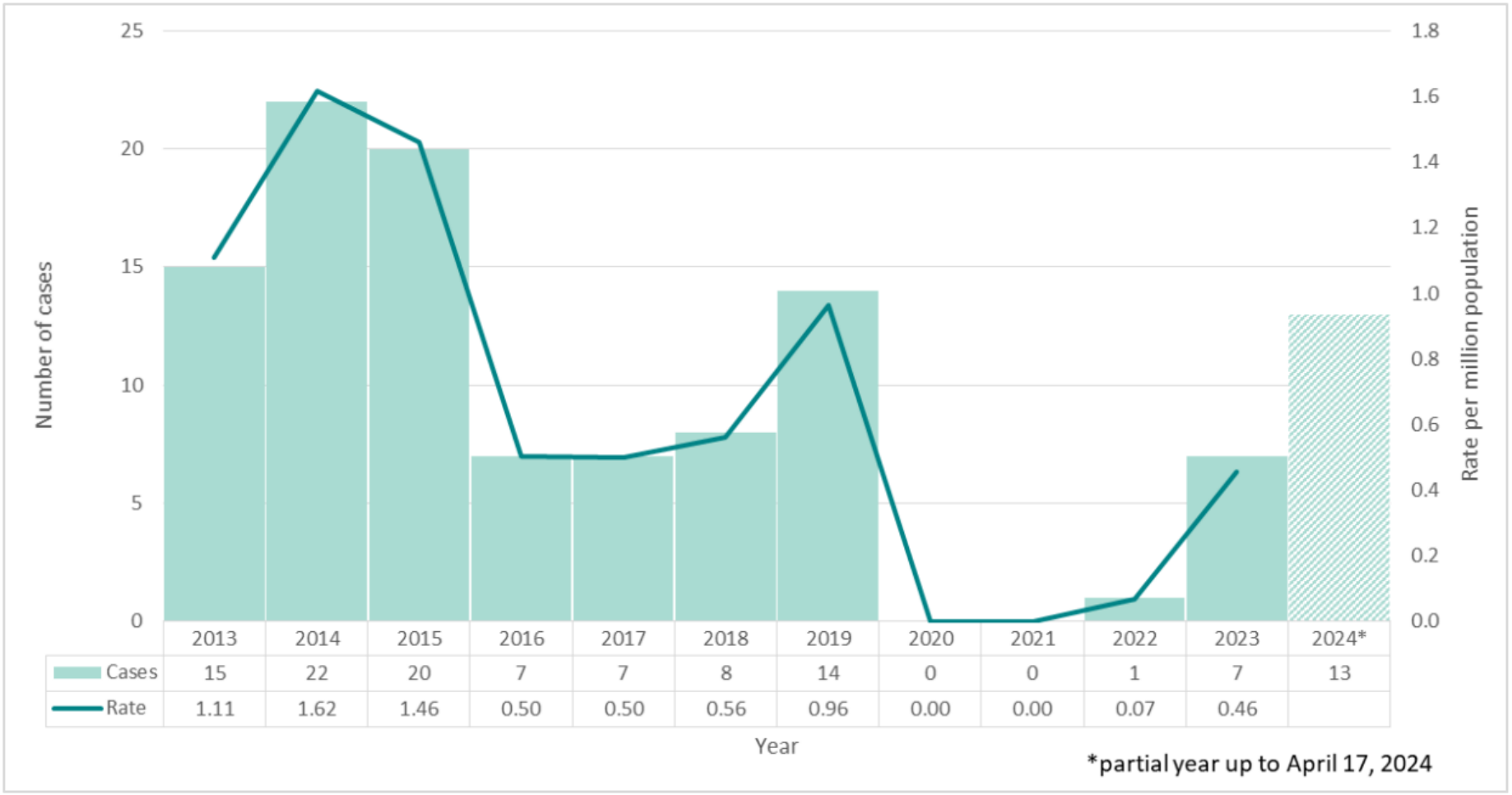


[Measles & Rubella Weekly Monitoring Report, PHAC. April 6, 2024]

- In Canada, as of April 6, 2024, here have been 56 cases of measles.
- Most have been in Quebec (41) and Ontario (7).
- In 2023 there were 12 cases of measles across Canada

Measles in Ontario

Figure 2: Number of Measles Cases and Incidence Rate Per Million Population: Ontario, January 1, 2013 – April 17, 2024



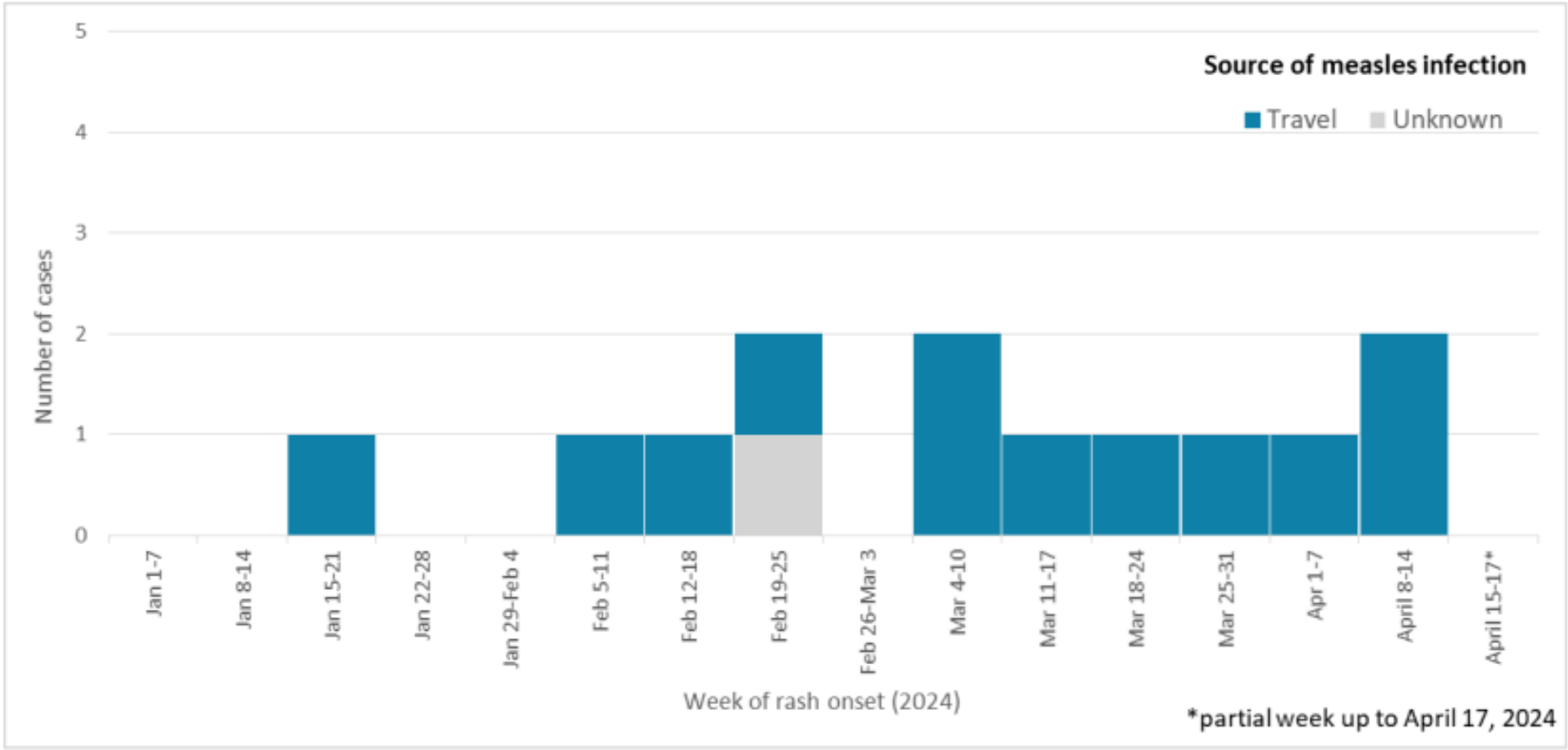
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024*
Cases	15	22	20	7	7	8	14	0	0	1	7	13
Rate	1.11	1.62	1.46	0.50	0.50	0.56	0.96	0.00	0.00	0.07	0.46	

Year

*partial year up to April 17, 2024

[Measles in Ontario (publichealthontario.ca)]

Figure 1: Number of Measles Cases by Week of Rash Onset and Source of Infection: Ontario, January 1, 2024 – April 17, 2024



Notes:

Cases in 2024 (to date), n=13

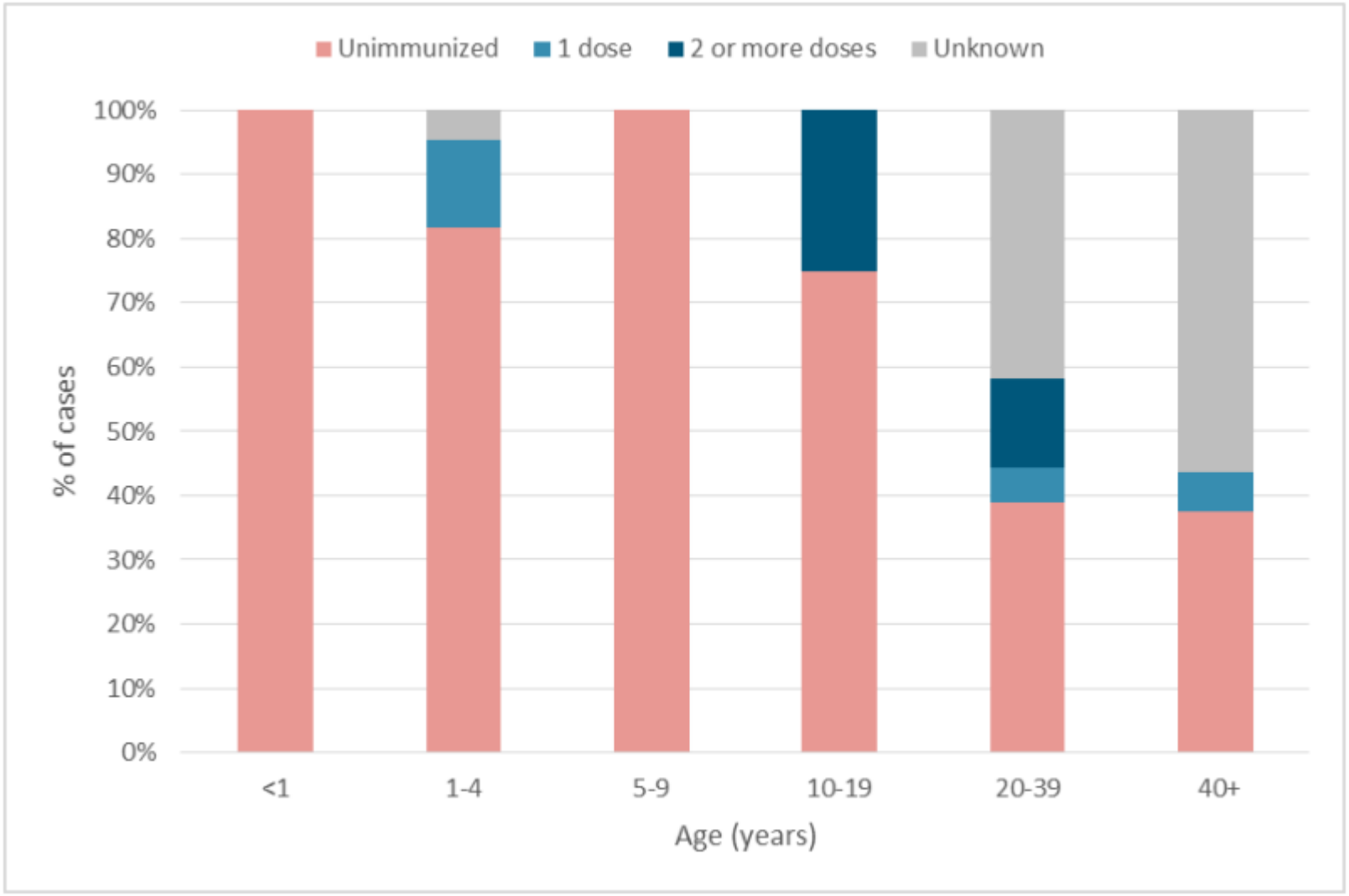
- All cases were born after 1970
- 3 (23.1%) hospitalized
- 10 unimmunized or unknown immunization history

[Measles in Ontario (publichealthontario.ca)]

Case characteristics of measles in Ontario 2013-23

- 101 cases
- 94 born after 1970
- 28 hospitalized
- 88 unimmunized or unknown immunization history

Figure 3: Immunization Status of Measles Cases by Age Group: Ontario, January 1, 2013 – December 31, 2023



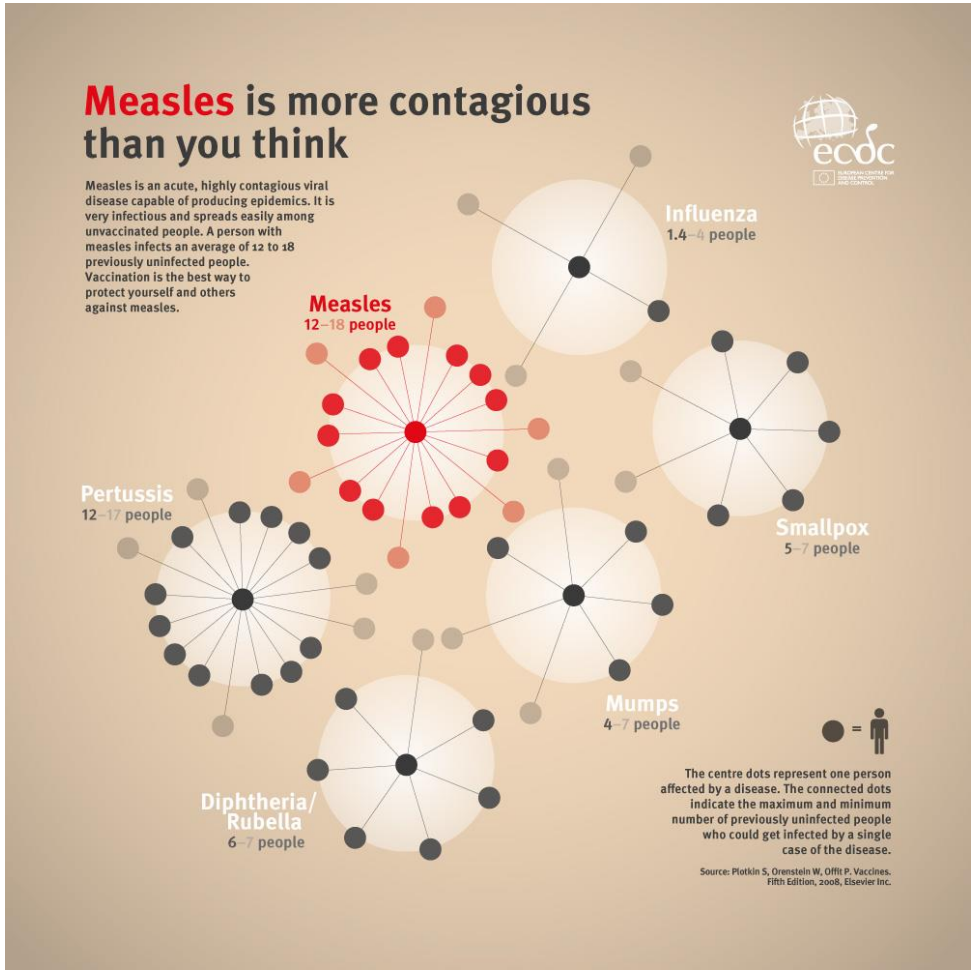
[Measles in Ontario (publichealthontario.ca)]

Why do we worry about measles?

- Complications are common, can be severe and permanent, even with access to adequate healthcare.
  - otitis media (1 in 10)
  - Pneumonia (1 in 10)
  - Diarrhea (1 in 10)
- Severe
  - Hospitalization (1 in 10)
  - Encephalitis (1 in 1000)
  - Death (1 in 1000)
- Subacute sclerosing panencephalitis (SSPE)
  - 1 per 10,000 cases
  - Degenerative central nervous system disease
  - Onset 5-10 years after measles infection.
  - Behaviour change, seizure and progressive cognitive decline leading to death
  - Increased risk among children infected under 2 y.o.

CDC. Measles for Healthcare Providers. 2020.

Measles is highly contagious



1991 World Games opening ceremony, torch lighting. Special Olympics

Measles in Halton 2024

Case's health unit of residence	Exposure involving Halton contacts	Exposure Date	Number of Halton Contacts
Hamilton	Hamilton Exposure Site #3	April 16, 2024	6
Hamilton	Hamilton Exposure Site #2	April 15, 2024	5
Halton	Halton Exposure Site #5	Apr 5, 2024	22
Halton	Halton Exposure Site #4	Apr 4, 2024	134
Halton	Halton Exposure Site #3	Apr 2, 2024	23
Halton	Halton Exposure Site #2	Mar 31, 2024	3
Toronto	Toronto Exposure Site #1	Mar 16, 2024	4
Hamilton	Halton Exposure Site #1	Mar 11, 2024	22
Brant	Hamilton Exposure Site #1	Feb 24, 2024	25
Peel	Peel Exposure Site #1	Feb 7, 2024	4

Data Notes: "Number of Halton contacts" represents a unique count per exposure (i.e. if a person was at multiple exposure sites, they are counted for each exposure), whereas the total count of 245 is a distinct count of all contacts managed by Halton.

Measles 101

- When to suspect measles?
- How to test for measles?
- How to get ready for a case of measles?

Reporting to Public Health

Reporting

- Measles is a **reportable disease** under the *Health Protection and Promotion Act.*
- Report suspected cases of measles immediately to Halton Region Public Health by calling 311.
- Do not wait for laboratory confirmation.

Measles – Relevant history

Unimmunized or under-immunized

History of travel or household member who travelled within 21 days of symptom onset

Exposure to a known case of measles or exposure setting.

Measles conjunctivitis

Measles rash

Measles rash

https://www.cdc.gov/measles/symptoms/photos.html

WHO supports Government to mitigate measles, rubella outbreaks nationwide | WHO | Regional Office for Africa

Signs and symptoms

Symptoms usually start 10 days after exposure (range 7-21 days)

Prodrome: lasts 2-4 days

Fever (can be very high, up to 40.6 degrees)

Cough

Red, watery eyes that are sensitive to light

Runny nose

+/- Koplik Spots (small white spots inside mouth)

Rash: begins 3-7 days after prodrome

Fever persists

Red blotchy rash – starts on face then moves down the body, arms and legs

+/- Koplik spots

*In vaccinated people, measles may have variable rashes and milder clinical course

https://www.nhs.uk/conditions/measles/

https://www.cdc.gov/measles/symptoms/photos.html

Testing & ordering swabs

Specimen	Test	Notes
Nasopharyngeal swab	PCR	Within 7 days of rash onset*
Throat swab	PCR	Within 7 days of rash onset*
Urine (50 mL)	PCR	Within 14 days of rash onset*
Blood (whole or serum)	Diagnostic Serology (IgG & IgM)	Acute: collect the acute sample within 7 days of rash onset Convalescent: collect the convalescent sample minimum 7-10 days after the acute; preferably 10-30 days after acute

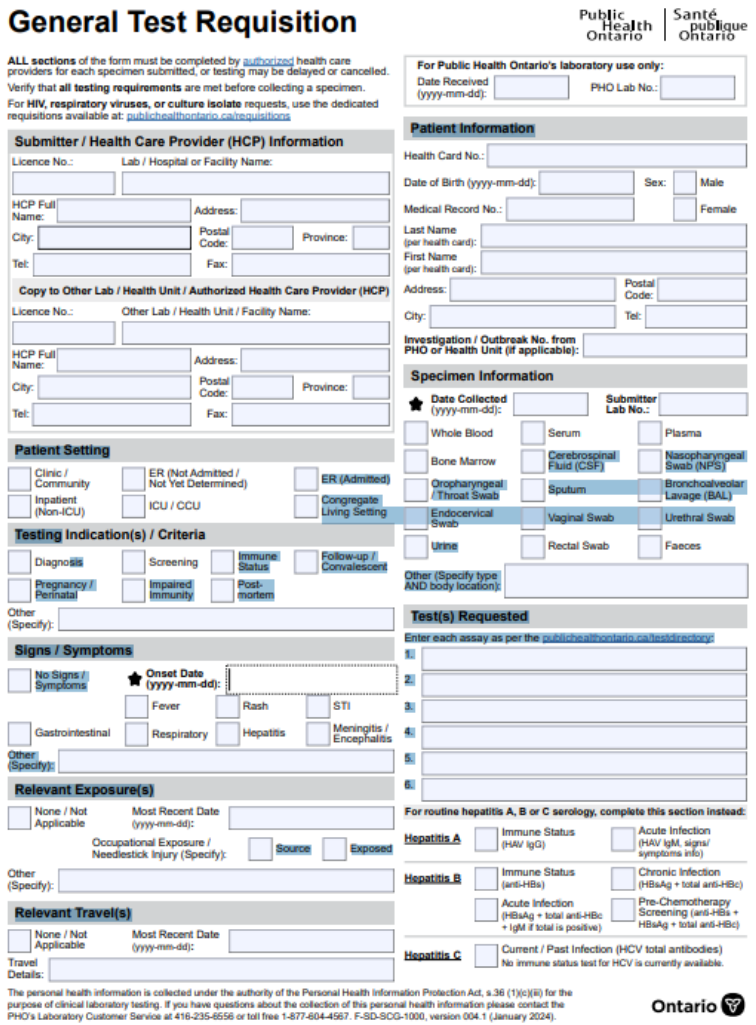
Requisition for Specimen Containers and Supplies

- NPS –"virus respiratory/influenza" item #390082
- Throat swab – "virus culture-herpes/STI) item #390081

* In certain situations, it may be warranted to test beyond these time periods in consultation with PHOL (e.g. high index of suspicion of measles)

Test requisition

- Include on the requisition:
  - symptom onset
  - vaccination history
  - travel history (including date of return)
  - Mark STAT on outside of package
- Vaccine derived measles virus can return a positive PCR result, but can be distinguished through genotypying.



General Test Requisition

Public Health Ontario | Santé publique Ontario

ALL sections of the form must be completed by authorized health care providers for each specimen submitted, or testing may be delayed or cancelled.
Verify that all testing requirements are met before collecting a specimen.
For HIV, respiratory viruses, or culture isolate requests, use the dedicated requisitions available at: publichealthontario.ca/requisitions

For Public Health Ontario's laboratory use only:
Date Received (yyyy-mm-dd): PHO Lab No.:

Submitter / Health Care Provider (HCP) Information
Licence No.: Lab / Hospital or Facility Name:
HCP Full Name: Address:
City: Postal Code: Province:
Tel: Fax:

Copy to Other Lab / Health Unit / Authorized Health Care Provider (HCP)
Licence No.: Other Lab / Health Unit / Facility Name:
HCP Full Name: Address:
City: Postal Code: Province:
Tel: Fax:

Patient Setting
Clinic / Community; ER (Not Admitted / Not Yet Determined); ER (Admitted); Inpatient (Non-ICU); ICU / CCU; Congregate Living Setting

Testing Indication(s) / Criteria
Diagnosis; Screening; Immune Status; Follow-up / Convalescent; Pregnancy / Perinatal; Impaired Immunity; Post-mortem
Other (Specify):

Signs / Symptoms
No Signs / Symptoms; Onset Date (yyyy-mm-dd):
Fever; Rash; STI; Gastrointestinal; Respiratory; Hepatitis; Meningitis / Encephalitis
Other (Specify):

Relevant Exposure(s)
None / Not Applicable; Most Recent Date (yyyy-mm-dd):
Occupational Exposure / Needlestick Injury (Specify): Source; Exposed
Other (Specify):

Relevant Travel(s)
None / Not Applicable; Most Recent Date (yyyy-mm-dd):
Travel Details:

Patient Information
Health Card No.:
Date of Birth (yyyy-mm-dd): Sex: Male; Female
Medical Record No.:
Last Name (per health card):
First Name (per health card):
Address: Postal Code:
City: Tel:
Investigation / Outbreak No. from PHO or Health Unit (if applicable):

Specimen Information
Date Collected (yyyy-mm-dd): Submitter Lab No.:
Whole Blood; Serum; Plasma; Bone Marrow; Cerebrospinal Fluid (CSF); Nasopharyngeal Swab (NPS); Oropharyngeal / Throat Swab; Sputum; Bronchoalveolar Lavage (BAL); Endocervical Swab; Vaginal Swab; Urethral Swab; Urine; Rectal Swab; Faeces
Other (Specify type AND body location):

Test(s) Requested
Enter each assay as per the publichealthontario.ca/testdirectory:
1. 2. 3. 4. 5. 6.

For routine hepatitis A, B or C serology, complete this section instead:
Hepatitis A: Immune Status (HAV IgG); Acute Infection (HAV IgM, signs/symptoms info)
Hepatitis B: Immune Status (anti-HBs); Chronic Infection (HBsAg + total anti-HBc); Acute Infection (HBsAg + total anti-HBc + IgM if total is positive); Pre-Chemotherapy Screening (anti-HBs + HBsAg + total anti-HBc)
Hepatitis C: Current / Past Infection (HCV total antibodies) No immune status test for HCV is currently available.

The personal health information is collected under the authority of the Personal Health Information Protection Act, s.36 (1)(c)(iii) for the purpose of clinical laboratory testing. If you have questions about the collection of this personal health information please contact the PHO's Laboratory Customer Service at 416-235-6556 or toll free 1-877-604-4567. F-SD-SCG-1000, version 004.1 (January 2024).

Ontario

[Temporary Priority Measles Submission Guidelines]

Patient counselling

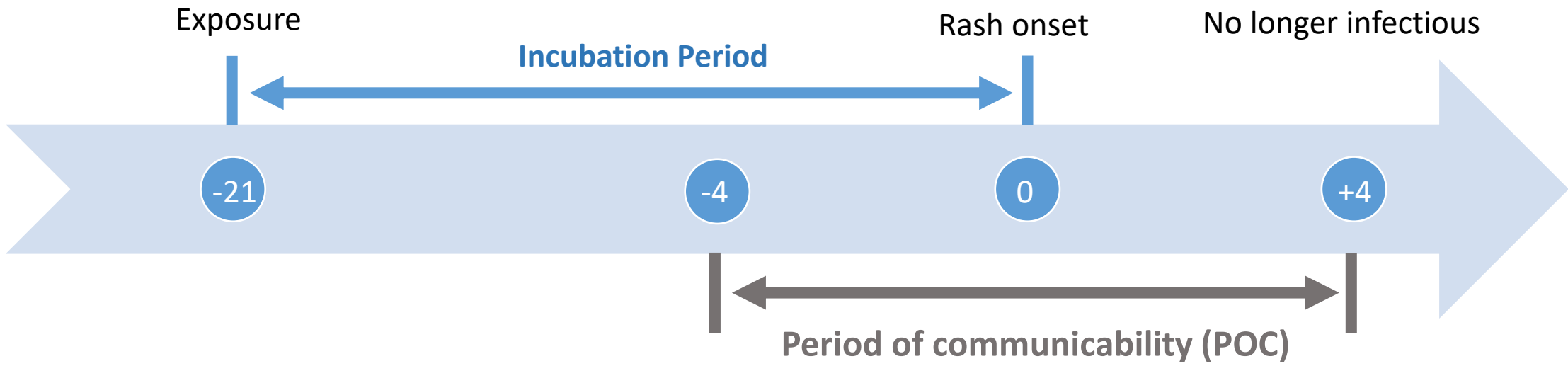
- Isolate: Stay at home until lab results are back.
  - Do not attend child care, school, workplace, group settings
  - If you need to seek medical care, call before you go and wear a medical mask.
- Public Health will call to advise further

Protect yourself and others – IPAC

- Patient should be seen at the end of the day, if possible.
- Offer a medical mask upon arrival bring immediately to an examination room with the door closed.
- Have only staff who are known to be immune provide care.
- HCP/staff should wear fit-tested N95 mask (regardless of immune status)
- After the patient leaves, leave the door closed and do not use the room for 2 hours.
- Thoroughly disinfect the examination room using routine cleaning practices.
- Interim IPAC Recommendations and Use of PPE for Care of Individuals with Suspect or Confirmed Measles (publichealthontario.ca)

Public Health Management of Contacts

Contact: any **susceptible** person who shared the same room or air space for any length of time with the case during the case's period of communicability, including two hours after the case left the room or airspace.



Who is a susceptible contact?

- People born on or after January 1, 1970 who do NOT have:
  - Documentation of two valid doses of measles-containing vaccine OR
  - Laboratory evidence of prior measles infection OR
  - Laboratory evidence of immunity (i.e., “reactive” or “positive” anti-measles IgG)
- People born in 1969 or earlier are presumed to be immune due to infection, HOWEVER:
  - **Healthcare workers must have documentation of immunity regardless of year of birth**

Post-exposure prophylaxis

https://www.ontario.ca/files/2024-03/moh-measles-appendix-en-2024-03-19.pdf

Table 1: Summary of updated measles post-exposure prophylaxis recommendations for susceptible contacts

Population	Time since exposure to measles	
	≤ 72 hours	73 hours-6 days
Susceptible infants 0-6 months of age	IMIg (0.5 ml/kg)[a,b]	
Susceptible immunocompetent infants 6-12 months of age	MMR vaccine[a]	IMIg (0.5 ml/kg)[b]
Susceptible immunocompromised[c] individuals 6 months of age and older	IVIg (400 mg/kg) or IMIg (0.5 ml/kg), limited protection if body weight ≥ 30 kg[d]	
Susceptible immunocompetent individuals 12 months of age and older	MMR vaccine	MMR vaccine[e]
Susceptible pregnant individuals[f]	IVIg (400 mg/kg) or IMIg (0.5 ml/kg), limited protection if body weight ≥ 30 kg[d]	

Exclusion

Susceptible (non-immune) contacts may be excluded from high-risk settings (childcare, school, health care, etc.) to prevent further spread of infection

Exclusion: may be required from 5 days after the first exposure to 21 days after the last exposure or until the individual is shown to be immune.

Non-healthcare workers who have received only one dose of measles-containing vaccine can be released from exclusion following receipt of the 2nd dose regardless of its timing

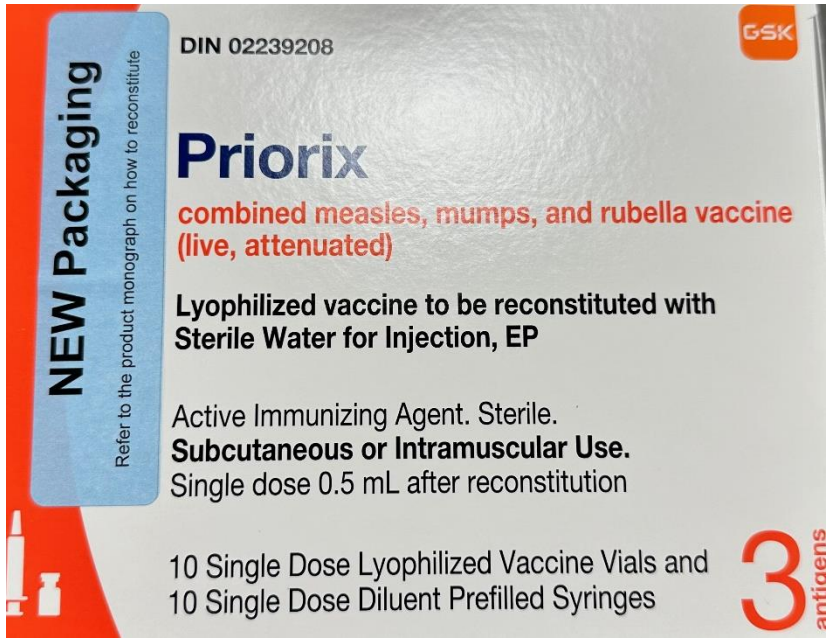
To avoid exclusion of any staff in your practice, we recommend ensuring documentation of immunity for all staff at your practice.

Immunization

Immunization stops the spark from becoming a blaze

About the measles-containing vaccines

- In Canada, only available as a combined MMR or MMRV vaccine
- Live vaccine: contains an attenuated virus that must replicate in the host to generate an immune response
- Replication can be affected by:
  - Exogenous antibodies (maternal, blood products)
  - Maturity of the host immune system
  - Other live vaccines
- 90-95% of people generate an adequate response to dose #1; 95% of non-responders will respond to dose #2.
- Protection develops in 2-3 weeks



-Canadian Immunization Guide

Ontario publicly funded schedule

Table 2: Eligibility Criteria for Publicly Funded Measles Vaccine in Ontario

Age	Recommended doses	Eligibility criteria
6 to 11 months	1 dose	• Travelling to areas with increased measles transmission. • Two additional doses are required on or after the first birthday, see row below.
1 to 17 years	2 doses	• Routinely given at: o 1 year of age (1st dose as MMR) and o 4 to 6 years of age (2nd dose as MMRV)
18 years+	1 or 2 doses	• A 2nd dose can be given: o based on the health care provider's clinical judgement o to health care workers o to post-secondary students o to individuals travelling to areas with increased measles transmission

Offer immunization to those who are considered susceptible:
People born in or after 1970 who do NOT have:

- Documentation of two valid doses of measles-containing vaccine OR
- Laboratory evidence of prior measles infection OR
- Laboratory evidence of immunity (i.e. “reactive” or “positive” anti-measles IgG)

Publicly Funded Immunization Schedules for Ontario

Summary of who to vaccinate

Routine childhood vaccination schedule

- 12 months (as MMR)
- 4-6 y.o. (as MMRV); ideally closer to 4 y.o.

Unimmunized children & adolescents

- 6-11 m.o. may receive 1 dose of MMR if travelling
- 2 doses of MMR, 4 weeks apart (given on or **after** first birthday)
- MMRV if varicella needed AND aged 4-12

Adults born in or after 1970 (not healthcare workers)

- 2 doses of MMR, 4 weeks apart
- Prioritize travellers, people who work with children, people with no doses

Summary of who to vaccinate

Adults born before 1970 (not healthcare workers)

- Probably immune through infection. May offer 1 dose
- Consider second dose for travellers, military, post-secondary

Healthcare workers

- Two doses of MMR, 4 weeks apart

Contraindications

- History of anaphylaxis to the vaccine or components
- Known congenital or hereditary immunodeficiency
  - Defer in first degree relatives until immune status is confirmed
- Primary or secondary immunodeficiency
- Pregnancy
- Active, untreated tuberculosis
- Severe, acute illness

Measles vaccine: Canadian Immunization Guide

Immunosuppressive conditions and therapies

- Includes:
  - Primary B and/or T cell disorders
  - Malignant hematologic disorders
  - People receiving treatment for solid malignant tumors
  - Immunosuppressive therapies
- HSCT recipients are considered “never immunized”
  - See Cancer Care Ontario recommendations
- Ideally, individuals are immunized at least four weeks prior to starting immunosuppressive therapy
- Immunization can be considered if therapy can be paused or stopped; typically, in consultation with the treating specialist

Immunization of immunocompromised persons: Canadian Immunization Guide

Summary of recommendations for primary care management after stem cell transplant: Cancer Care Ontario

NOT a contraindication (an incomplete list)

Not a contraindication

- Allergy to eggs
- Minor illness, with or without fever
- Personal or family history of febrile seizures
- Topical, inhaled, or locally injected steroid therapies
- Short-term (less than 14 days) corticosteroid therapy
- Adequately treated HIV (see Canadian Immunization Guide for criteria)
- Breastfeeding
- Household member of an immunocompromised or pregnant person

- *"Pregnancy should be used as an opportunity to update immunization of susceptible household contacts, including live vaccines…"*
- *"Susceptible close contacts of immunocompromised people should receive MMR, MMRV, varicella or herpes zoster vaccine as appropriate for age. If the varicella vaccine recipient develops a varicella-like rash, the rash should be covered and the vaccinee should avoid direct contact with the immunocompromised person for the duration of the rash."*

Canadian Immunization Guide

Side Effects

- Common
  - Malaise and fever, +/- rash
    - 5% of children.
    - Occurs 7-10 days after immunization. Lasts up to 3 days.
  - Can look very similar to actual disease, but can be distinguished by genotyping on PCR specimens
  - Does not transmit!

Post MMRV rash, 12 month old
AAFP 2010;81(3):327-328

Canadian Immunization Guide

Adverse events

- Uncommon (0.1-1%)
  - Parotitis, lymphadenopathy, joint pain
- Rare <0.1%
  - Febrile seizures, with in 7 to 10 days of immunization
    - 1 per 1700 to 1 per 1150 administered doses
    - Risk higher if first dose is given as MMRV at less than 4 y.o. compared to administering as MMR + V
  - Idiopathic Thrombocytopenic Purpura: 2-4 per 100,000 administered doses
    - Generally mild and resolves within 3 months without serious complications
    - Lower than the risk associated with infection
  - Anaphylaxis

Orenstein WA, Plotkin SA, Offit PA, Edwards KM. Plotkin's vaccines. 8th edition. Philadelphia, PA: Elsevier Inc; 2023.

Reporting Adverse Reactions

- An adverse event following immunization (AEFI):
  - an unwanted or unexpected health effect that happens after someone receives a vaccine
  - may or may not be caused by the vaccine
- AEFI fact sheet, (Public Health Ontario) lists types of adverse events that should be reported, including estimated timelines between vaccination and onset of symptoms
- How to report:
  1. Complete Ontario AEFI reporting form (Ministry of Health)
  2. Fax to 905-465-3403 or Email to AEFI@halton.ca or submit via OCEAN

When to use serology?

- Rarely. Documentation of vaccination is preferred.
- May be required due to occupation
- May use for people who experienced a severe adverse reaction after dose #1 to determine if dose #2 is needed.
- May be recommended following vaccine-associated ITP

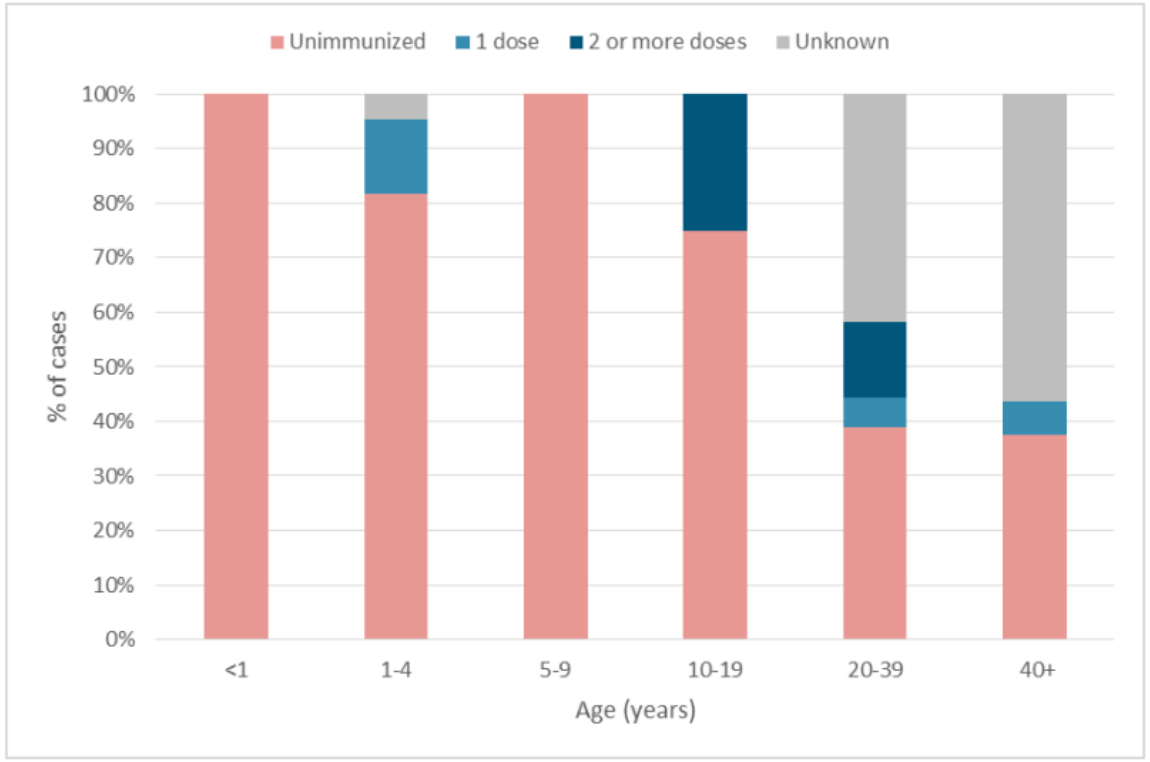
"Serologic testing is not recommended before or after receiving measles-containing vaccine. If serology is inadvertently done subsequent to appropriate measles immunization and does not demonstrate immunity, measles re-immunization is not necessary."

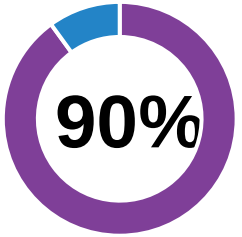
-Canadian Immunization Guide

MEASLES BY THE NUMBERS

ASSUMING…

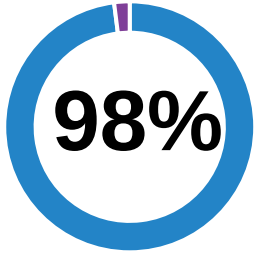
Figure 3: Immunization Status of Measles Cases by Age Group: Ontario, January 1, 2013 – December 31, 2023



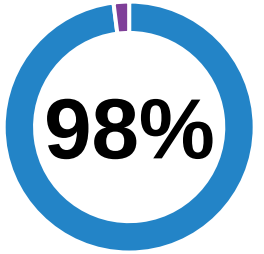


Attack Rate

among the unvaccinated



Vaccine Coverage



Protection

among the vaccinated

MEASLES BY THE NUMBERS

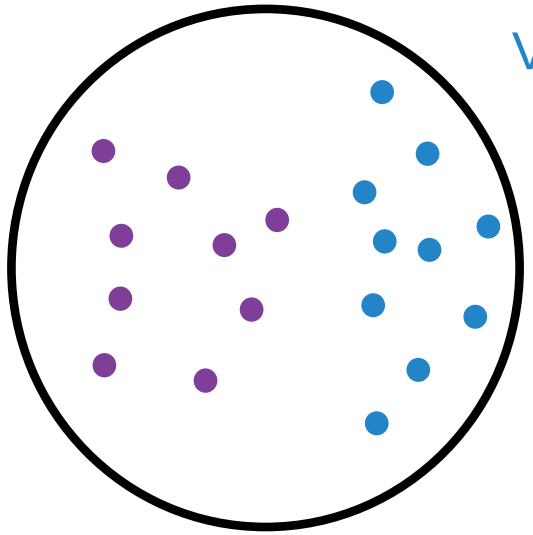
ASSUMING…

90% **Attack Rate**
among the unvaccinated

98% **Vaccine Coverage**

98% **Protection**
among the vaccinated

Infected



Vaccinated

Unvaccinated

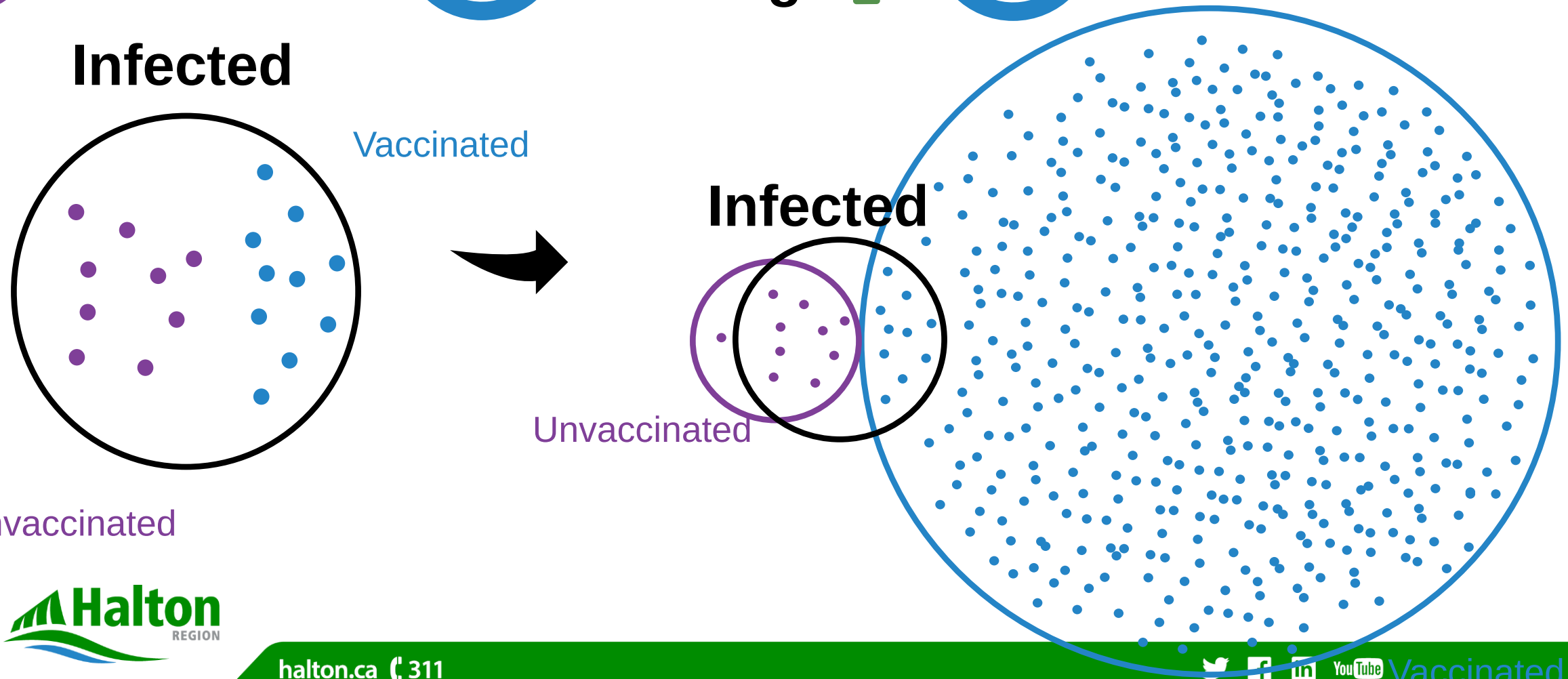
MEASLES BY THE NUMBERS

ASSUMING…

90% **Attack Rate**
among the unvaccinated

98% **Vaccine Coverage**

98% **Protection**
among the vaccinated



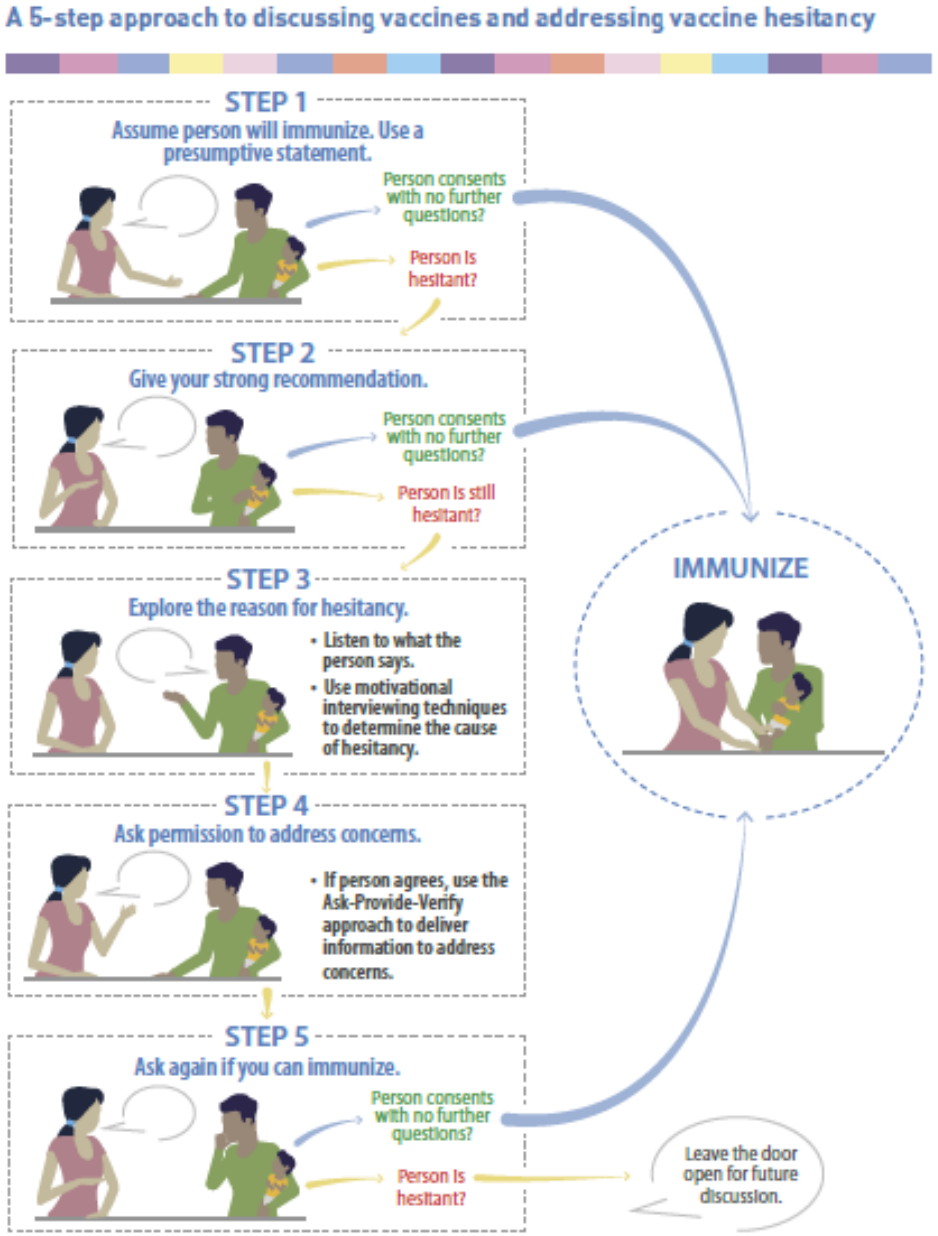
Halton Region

Vaccine Hesitancy Strategies

- Understand that health care providers play a key role in a person's decision to vaccinate
- Build trust
- Use a presumptive statement
- Use motivational interviewing techniques to understand a person's vaccine concerns
- Keep messages short and simple
- Present both the risks and benefits of vaccines fairly and accurately
- Share stories
- Address pain head-on

Vaccine Hesitancy

1. Assume the person will immunize
   - “Your son is due for his 12-month vaccines. We will give him these vaccines before you leave today.”
2. Give your strong recommendation
   - “I strongly recommend your child gets these vaccines today. These vaccines are very important to protect your child against serious diseases.”
3. Explore the reason for hesitancy
4. Ask permission to address concerns
5. Ask again to immunize, leave the door open for future conversations
   - “I know you have your child’s best interests at heart. If you ever want to discuss this further, please call me.”



Resources – vaccine hesitancy

- Vaccine Hesitancy, Immunize Canada – immunize.ca
- Immunization Communication Tool - BCCDC
- One-to-one vaccine consults – Shn.ca/VaxFacts

Use

C COMFORT
A ASK
R RELAX
D DISTRACT

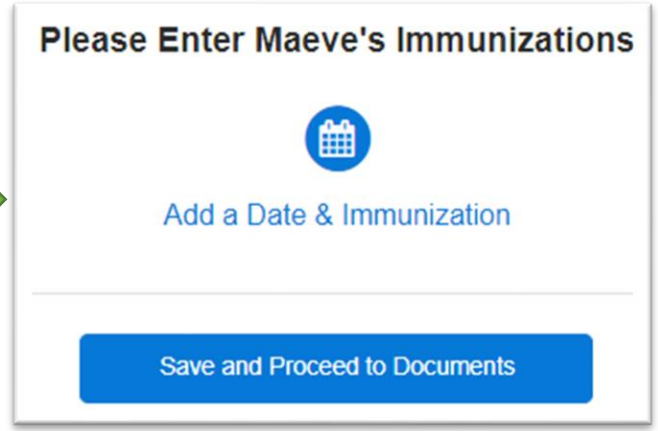
to improve your vaccination experience

Reporting immunizations

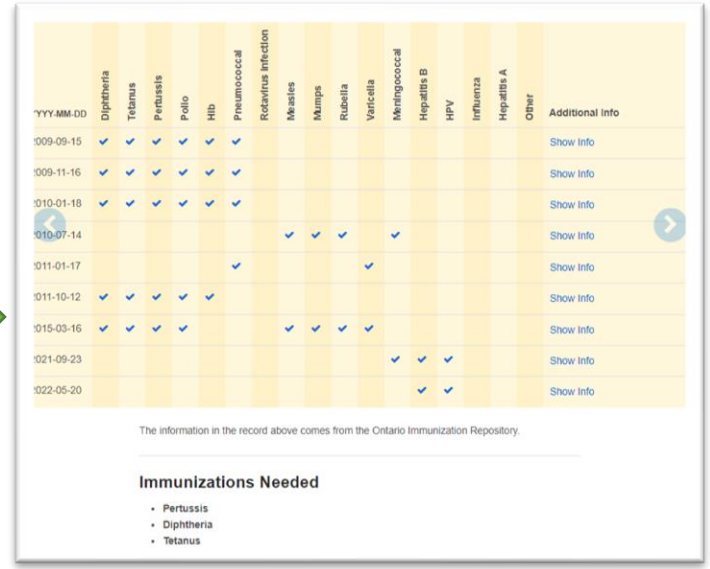
Halton.ca/immunize

Immunization Connect Ontario (ICON)

Report record

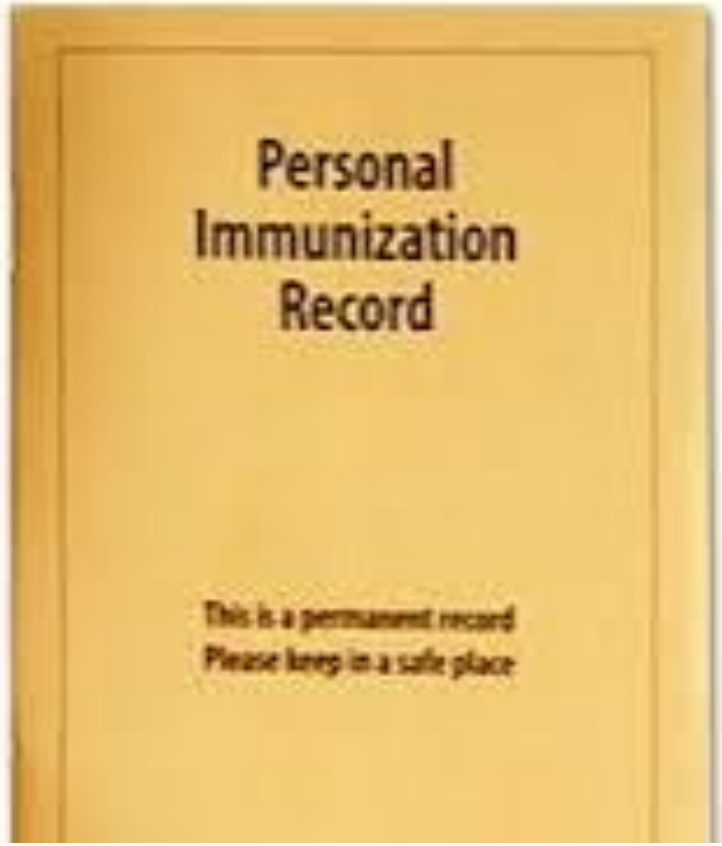


View record



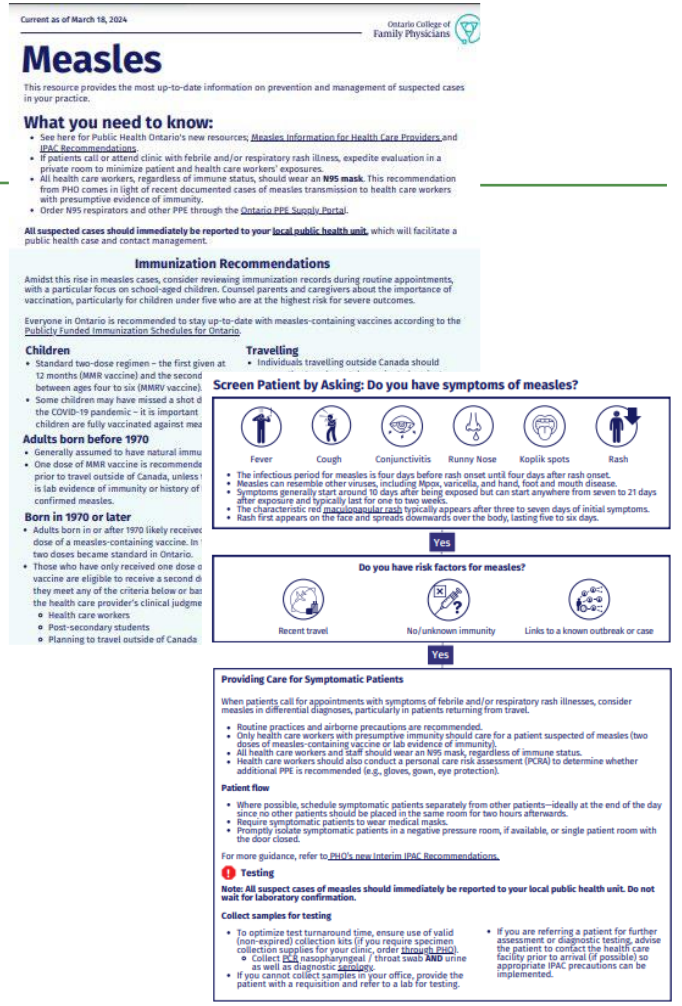
Where to find immunization records

- Look up immunization records at Immunization Connect Ontario (ICON) using address when attending school in Halton
- Email ImmunizationNurses@halton.ca
- If born before 1980 –unlikely to be reported in provincial database



Resources – measles

- Testing indications for measles, Public Health Ontario
- Publicly Funded Immunization Schedules for Ontario, June 2022, Ontario
- Measles vaccine: Canadian Immunization Guide, Canada
- Measles, Ontario College of Family Physicians, March 18, 2024
- Measles: Information for Health Care Providers, Public Health Ontario, 2nd Edition, March 15, 2024


Current as of March 18, 2024

Ontario College of Family Physicians

Measles

This resource provides the most up-to-date information on prevention and management of suspected cases in your practice.

What you need to know:

- See here for Public Health Ontario's new resources: Measles Information for Health Care Providers and IPAC Recommendations
- If patients call or attend clinic with febrile and/or respiratory rash illness, expedite evaluation in a private room to minimize patient and health care workers' exposures.
- All health care workers, regardless of immune status, should wear an N95 mask. This recommendation from PHO comes in light of recent documented cases of measles transmission to health care workers with presumptive evidence of immunity.
- Order N95 respirators and other PPE through the Ontario PPE Supply Portal.

All suspected cases should immediately be reported to your local public health unit, which will facilitate a public health case and contact management.

Immunization Recommendations

Amidst this rise in measles cases, consider reviewing immunization records during routine appointments, with a particular focus on school-aged children. Counsel parents and caregivers about the importance of vaccination, particularly for children under five who are at the highest risk for severe outcomes.

Everyone in Ontario is recommended to stay up-to-date with measles-containing vaccines according to the Publicly Funded Immunization Schedules for Ontario.

Children

- Standard two-dose regimen – the first given at 12 months (MMR vaccine) and the second between ages four to six (MMRV vaccine).
- Some children may have missed a shot d the COVID-19 pandemic – it is important children are fully vaccinated against mea

Adults born before 1970

- Generally assumed to have natural immu
- One dose of MMR vaccine is recommende prior to travel outside of Canada, unless is lab evidence of immunity or history of confirmed measles.

Born in 1970 or later

- Adults born in or after 1970 likely receive dose of a measles-containing vaccine. In two doses became standard in Ontario.
- Those who have only received one dose o vaccine are eligible to receive a second d they meet any of the criteria below or bas the health care provider's clinical judgme
  - Health care workers
  - Post-secondary students
  - Planning to travel outside of Canada

Travelling

- Individuals travelling outside Canada should

Screen Patient by Asking: Do you have symptoms of measles?

Fever | Cough | Conjunctivitis | Runny Nose | Koplik spots | Rash

- The infectious period for measles is four days before rash onset until four days after rash onset.
- Measles can resemble other viruses, including Mpox, varicella, and hand, foot and mouth disease.
- Symptoms generally start around 10 days after being exposed but can start anywhere from seven to 21 days after exposure and typically last for one to two weeks.
- The characteristic red maculopapular rash typically appears after three to seven days of initial symptoms.
- Rash first appears on the face and spreads downwards over the body, lasting five to six days.

Yes

Do you have risk factors for measles?

Recent travel | No/unknown immunity | Links to a known outbreak or case

Yes

Providing Care for Symptomatic Patients

When patients call for appointments with symptoms of febrile and/or respiratory rash illnesses, consider measles in differential diagnoses, particularly in patients returning from travel.

- Routine practices and airborne precautions are recommended.
- Only health care workers with presumptive immunity should care for a patient suspected of measles (two doses of measles-containing vaccine or lab evidence of immunity).
- All health care workers and staff should wear an N95 mask, regardless of immune status.
- Health care workers should also conduct a personal care risk assessment (PCRA) to determine whether additional PPE is recommended (e.g., gloves, gown, eye protection).

Patient flow

- Where possible, schedule symptomatic patients separately from other patients—ideally at the end of the day since no other patients should be placed in the same room for two hours afterwards.
- Require symptomatic patients to wear medical masks.
- Promptly isolate symptomatic patients in a negative pressure room, if available, or single patient room with the door closed.

For more guidance, refer to PHO's new Interim IPAC Recommendations.

Testing

Note: All suspect cases of measles should immediately be reported to your local public health unit. Do not wait for laboratory confirmation.

Collect samples for testing

- To optimize test turnaround time, ensure use of valid (non-expired) collection kits (if you require specimen collection supplies for your clinic, order through PHO):
  - Collect PCR nasopharyngeal / throat swab AND urine as well as diagnostic serology.
- If you cannot collect samples in your office, provide the patient with a requisition and refer to a lab for testing.
- If you are referring a patient for further assessment or diagnostic testing, advise the patient to contact the health care facility prior to arrival (if possible) so appropriate IPAC precautions can be implemented.

QUESTIONS?

See you May 8-10 at Pri-Med

The International Centre
6900 Airport Rd, Mississauga

Booth 228
Halton Region Public Health

Pri-med.ca

Halton Public Health
halton.ca/physicians
doctors@halton.ca

Milton, Oakville, Halton Hills
Haltonphysicianassociation.ca
generalinquiries@haltonphysicianassociation.ca

Connectedcarehalton.ca
ahobbs@haltonhealthcare.com

Burlington
www.burlingtonoht.ca
ohtsupport@burlingtonoht.ca

doctors@halton.ca

halton.ca/physicians