MMR and MMR-Var Vaccine Updates

May, 2026

Acknowledgement

The ISC Alberta Region CDC Team has created this training by using Alberta Government and Primary Care Alberta (PCA) documents.

Primary Care Alberta

Alberta Government

ISC Mandatory Immunization Certification

Reminder:

4.1.1 Routine immunizations shall be administered by an HCP who:

- Is a regulated member of a health profession's body under the Alberta Health Professions Act;
- **Practices within their scope**;
- **Adheres to the Standards of Practice outlined by their regulatory body**; and
- Adheres to ISC-AB Policies, Procedures, and Guidelines.

4.3.3 HCPs must understand their own fitness to practice when performing authorized restricted activities and limit practice activities to those:

- They are **competent in** and certified to perform;
- That are within their scope of practice;
- That adhere to the Standards of Practice outlined by their professional regulatory body;
- That involve publicly-funded vaccines within the Alberta Immunization Program.

Source: **Mandatory Immunization Certification Policy- March 18 2024 Signed SG.pdf**

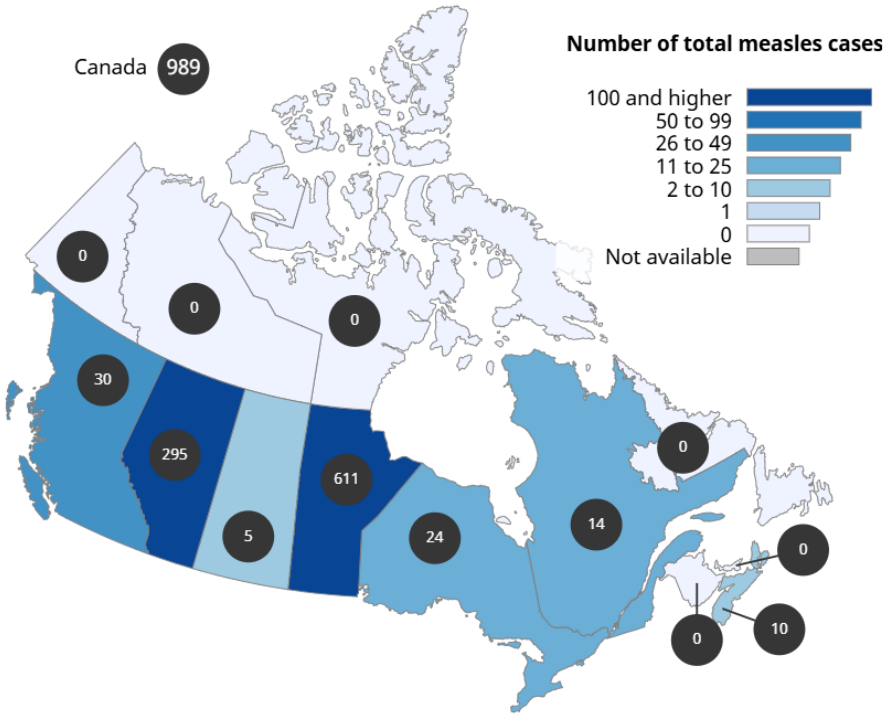
Today's Agenda

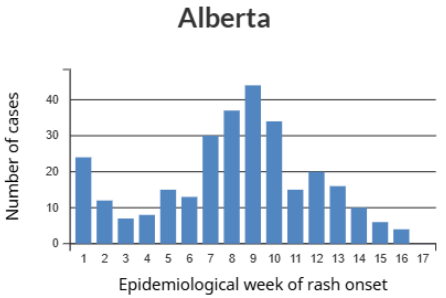
- Current measles situation
- Review changes to the AHS IPSM biological pages for MMR and MMR-Var vaccines
  - Indication- for infants and adults born prior to 1970
  - Travel recommendations
  - Review of current research
- Serology
  - Measles, Mumps, Rubella and Varicella
  - Vaccine recommendations related to serology

Measles Disease in Canada

Figure 1. Geographic distribution of total measles cases by province or territory, 2026 [3] (n=989)

Use the dropdown above, and hover over or select map regions below to see the number of total, new or recent measles cases in Canada.





There were **295** cases of measles in **Alberta** in 2026, as of **May 2, 2026**.

The epidemiological week [5] of the last rash onset [2] in **Alberta** was **week 16** (**April 19 to 25, 2026**).

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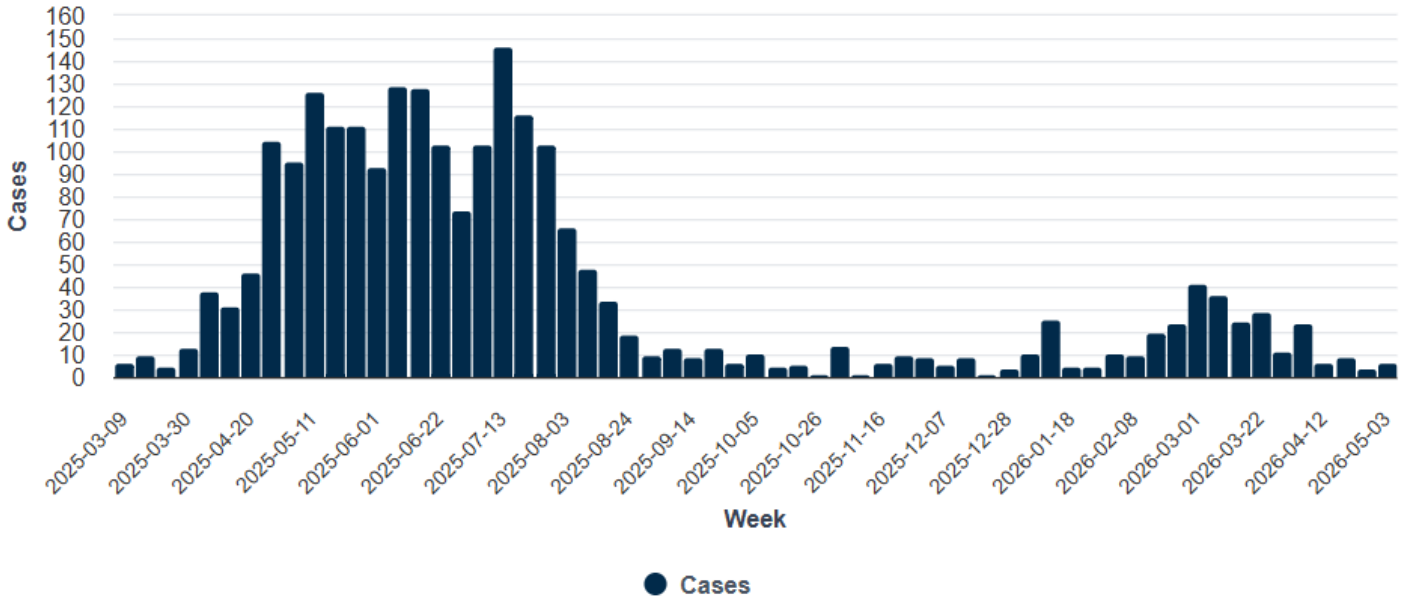
Measles Disease in Alberta

Weekly reporting

Figure 1. Number of confirmed measles cases by week of reporting March 1, 2025 to present



[Source: Measles – Data and statistics | Alberta.ca]

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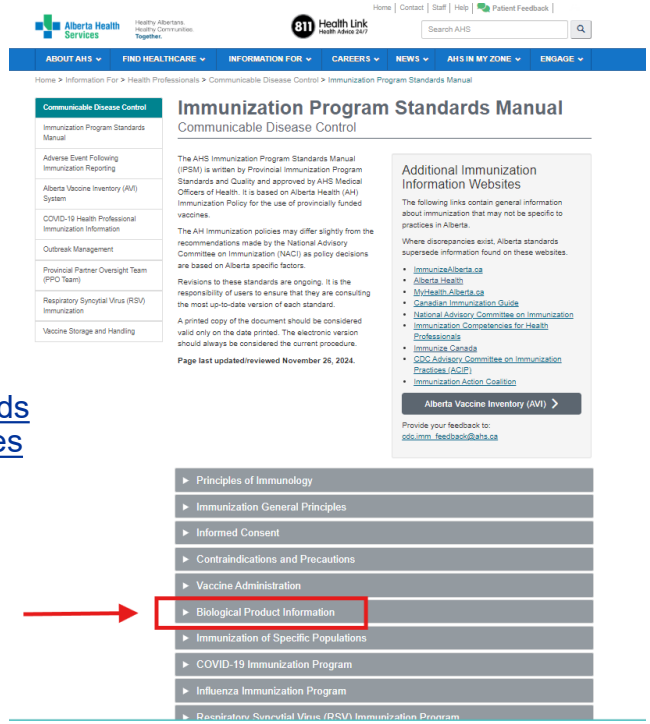
AHS Immunization Program Standards Manual

- The AHS Immunization Program Standards Manual (IPSM) Biological Product Information or 'biological pages' are posted on the AHS website for all provincially funded vaccines, including Tdap.
- These are the resource documents used when providing immunizations.
- Always use the biological pages posted on the AHS website for complete and current information.

Immunization Program Standards Manual | Alberta Health Services



- Human Papillomavirus Vaccine
  - Human Papillomavirus 9-Valent Vaccine Biological Page
  - Human Papillomavirus Vaccine Information Sheet
- Immune Globulin
  - Immune Globulin Biological Page
  - Immune Globulin Information Sheet
- Influenza
  - Standard Dose Influenza Vaccines Trivalent Inactivated Biological Page
  - High-Dose and Adjuvanted Influenza Vaccine Trivalent Inactivated Biological Page
  - Influenza Vaccine Information Sheet
- Measles Mumps Rubella
  - Measles Mumps Rubella Vaccine Biological Page
  - Measles Mumps Rubella Vaccine Information Sheet
- Measles Mumps Rubella Varicella
  - Measles Mumps Rubella and Varicella Vaccine Biological Page
  - MMR-Var Information Sheet
- Meningococcal B
  - Meningococcal B Multicomponent Recombinant Vaccine Biological Page
  - Meningococcal B Vaccine Information Sheet
- Meningococcal C Conjugate
  - Meningococcal Conjugate (Group C) Vaccine Biological Page
  - Meningococcal Conjugate (Group C) Vaccine Information Sheet
- Meningococcal Conjugate Groups A, C, Y, W-135
  - Meningococcal Conjugate (Groups A, C, Y and W-135) Vaccine Biological Page
  - Meningococcal Conjugate (Groups A, C, Y and W-135) Vaccine Information Sheet
- Mpox (Monkeypox)
  - Mpox (Monkeypox) Vaccine Biological Page
  - Mpox Monkeypox) Vaccine Information Sheet
- Pneumococcal Conjugate 15 (Pneu-C15)

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Summary of Biological Page Updates

Changes:

- Section removed: Areas where measles is circulating
- Updated travel indications
- Updated indications for individuals born before 1970
- Updated recommendations for null doses (6–11-month-old)

No changes:

- Post-exposure recommendations
- Health care worker recommendations
- Children 12 months to 17 years
- Adults born 1970 and after

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MMR and MMR-Var Biological Page Updates

Removed: ‘Areas where measles is circulating in Canada” section.

Rationale:

- Measles activity is no longer confined to specific geographic areas in Alberta
- Alberta shifting toward a more targeted, risk-based approach
- Challenges with keeping access to data up to date

MMR Biological Page Updates- Adults

Adults 18 years of age or older:

- **Measles**
  - Individuals born in 1970 or later (regardless of country of birth) 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).
  - All healthcare workers regardless of year of birth who do not have:
    - Documented history of 2 valid doses of measles-containing vaccine

Public Health, CDC & Screening
Communicable Disease Control

Standard # 07.270
Published May 13, 2026

	Priorix	M-M-R II
	▪ History of laboratory confirmed measles disease ▪ Serological evidence of measles immunity (measles IgG positive). ○ Pre-SOT clients born before 1970 with negative measles serology may receive 2 doses of MMR vaccine prior to transplant at the request of the transplant team.	
	Note: ○ From a population perspective, individuals born before 1970 (regardless of country of birth) are generally presumed to have acquired natural immunity to measles. However, some individuals may be susceptible. ○ Individuals with two documented doses of a measles-containing vaccine do not require a third dose regardless of negative or indeterminate measles serology. Consider these individuals to have presumptive evidence of immunity.	

Source: AHS Immunization Program Standards Manual (IPSM): 07.270 Measles Mumps Rubella Vaccine Biological Page

MMR Biological Page Updates- 6-11 months old

	Priorix	M-M-R II
Manufacturer	GlaxoSmithKline Inc.	Merck Canada Inc.
Classification	Live; attenuated	
Indications for Provincially Funded Vaccine	**Pre-exposure:** **Infants 6 months of age up to and including 11 months of age:** • Who are candidates for a solid organ transplant. See Standard for Immunization of Transplant Candidates and Recipients. • When there is concern about significant exposure risk (including parent request) within or outside of Canada. • Measles | Alberta.ca • Measles – Data and statistics | Alberta.ca **Note:** • Infants younger than 12 months of age may not respond sufficiently to the measles component of the vaccine in part due to the persistence of maternal measles antibody; therefore, any MMR-containing vaccine dose administered before 12 months of age should be repeated at 12 months of age or older with appropriate intervals between doses. • There is some evidence that infants receiving an early dose may not have full protection if they are exposed to measles in later childhood or adulthood, even if 2 more doses are received after 1 year of age. See section below "Use in infants younger than 12 months of age".	

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Source: AHS Immunization Program Standards Manual (IPSM): 07.270 Measles Mumps Rubella Vaccine Biological Page

MMR Biological Page Updates- Post- Exposure

Post-exposure:

- **Measles**
  - Susceptible contacts of a measles case should receive either MMR, MMR-Var (12 months to 12 years of age only) or immunoglobulin (IG) depending upon the time-lapse from exposure, age and health status.
  - Susceptible immunocompetent contacts (without contraindications) 6 months of age and older should receive measles-containing vaccine. Administer the vaccine within 72 hours of exposure and do not delay pending serology results. This includes children between 12 and 18 months of age who have received 1 dose of vaccine and are considered up-to-date for age, ensuring the minimum interval since the previous dose.
    - If MMR vaccine is contraindicated or if more than 72 hours since exposure has elapsed, IG may be indicated. See Immune Globulin Biological Page.
    - If MMR 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.

Note:

- As an outbreak control strategy during a measles outbreak, the Medical Officer of Health may recommend MMR vaccine for children 6 months up to and including 11 months of age.
- Not all HCW require measles serology post-exposure. Most HCW have robust measles immunity assessments upon hire, and if those records meet current criteria for measles immunity, there is no need to request serology following an exposure.
- For disease investigation, contact assessment and reporting requirements, refer to Alberta public health disease management guidelines: measles.

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Source: AHS Immunization Program Standards Manual (IPSM): 07.270 Measles Mumps Rubella Vaccine Biological Page

MMR and MMR-Var Biological Page Updates- Travel Indications

Specific Travel Indications and Recommendations	**Individuals travelling:** • Within or outside of Canada where there is concern about significant exposure risk. **Infants: 6 months up to and including 11 months of age (including parent request):** • One dose of MMR vaccine. **Note:** ○ Infants younger than 12 months of age may not respond sufficiently to the measles component of the vaccine in part due to the persistence of maternal measles antibody; therefore, any MMR-containing vaccine dose administered before 12 months of age should be repeated at 12 months of age or older with appropriate intervals between doses. ○ There is some evidence that infants receiving an early dose may not have full protection if they are exposed to measles in later childhood or adulthood, even if 2 more doses are received after 1 year of age. See section below "Use in infants younger than 12 months of age". ○ Questions about the measles virus or immunization can be directed to a healthcare provider. **Children: 12 months up to and including 17 years of age (if not previously immunized with two doses):** • Dose 1: Day 0 • Dose 2: 4 weeks after dose 1 **Note:** ○ When both MMR vaccine and varicella vaccine are indicated for children 12 months up to and including 12 years of age, MMR-Varicella combined vaccine should be considered. **Adults (18 years of age and older):** • **Adults born in 1970 or later:** ○ 2 life-time doses with at least 4 weeks between doses. • **Adults born before 1970:** ○ Adults born prior to 1970 are generally presumed to have acquired natural immunity to measles.

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Source: AHS Immunization Program Standards Manual (IPSM): 07.270 Measles Mumps Rubella Vaccine Biological Page

Resources related to Null Doses

- MMR Vaccination for Infants 6 Months to Less Than 12 Months of Age - Children's Mercy
- Effect of measles vaccination in infants younger than 9 months on the immune response to subsequent measles vaccine doses: a systematic review and meta-analysis - The Lancet Infectious Diseases
- Effect of early measles vaccination on long-term protection: A systematic review - ScienceDirect
- Long-term Dynamics of Measles Virus–Specific Neutralizing Antibodies in Children Vaccinated Before 12 Months of Age | Clinical Infectious Diseases | Oxford Academic
- Measles vaccines: WHO position paper – April 2017
- Early MMR Vaccination in Infants Reduces Protection, Accelerates Antibody Decay
- Immunogenicity, effectiveness, and safety of measles vaccination in infants younger than 9 months: a systematic review and meta-analysis - The Lancet Infectious Diseases

Research Summary

Source: Basilio P. (2025). Early MMR Vaccination in Infants Reduces Protection, Accelerates Antibody Decay

- With few exceptions, infants who received an additional early MMR vaccine dose before 8.5 months of age showed antibody levels below the protective threshold 5-6 years after revaccination at 14 months of age.
- During the 1 to 6 year period following vaccination, infants who received their first MMR dose before 8.5 months of age exhibited the greatest reduction in measles specific antibody levels.

Source: Staak M (2024). Long-term Dynamics of Measles Virus–Specific Neutralizing Antibodies in Children Vaccinated Before 12 Months of Age | Clinical Infectious Diseases | Oxford Academic

- Over 70% of children vaccinated before 8.5 months lose their protective antibody levels within 6 years despite having received a repeat MMR dose at 14 months of age.

Research Summary

Source: Lochlainn L (2019). Effect of measles vaccination in infants younger than 9 months on the immune response to subsequent measles vaccine doses: a systematic review and meta-analysis - The Lancet Infectious Diseases

- Some evidence that measles containing vaccine administered to infants younger than 9 months resulted in lower antibody titres after one or two subsequent doses of measles containing vaccine than when measles vaccination is started at age 9 months or older.
- The clinical and public-health relevance of this immunity blunting effect are uncertain.

Source: Xu J. (2021). Effect of early measles vaccination on long-term protection: A systematic review – ScienceDirect

- Further studies are needed to investigate for immune blunting effect of an early dose on additional doses of measles vaccine, including assessment of long-term vaccine effectiveness after a second or third dose and long-term immunogenicity in measles-eliminated areas.

Key Messages

- The Alberta Immunization Policy (AIP) has been updated to refine the approach to early measles immunization in Alberta
- Generally, infants less than 12 months of age, will not be recommended a MMR vaccine
- An early dose of MMR may be offered based on parental request, following discussion on the exposure risk and the risks vs benefits
- Adults born before 1970 (excluding health care workers) are not routinely recommended to receive a measle-containing vaccine, even if travelling outside of Canada or to a ‘high-risk area’ in Alberta.
- This revised approach supports targeted, risk-based decision-making rather than broad, zone-based triggers.

Case Study 1

Scenario 1

A family attends clinic with their 9-month-old baby. They have 2 older children- age 3 and 5 who are both up to date with their immunizations. They are driving to see their Grandfather in High Level next month and will be staying in his home for a week. They are planning to attend a wedding for a cousin and many larger family social events are also planned. They ask you if their baby should get a measles vaccine.

Would you recommend a MMR vaccine?

Case Study 2

Scenario 2

The EMS driver at the health centre is planning a trip to Mexico next month and he is asking if his vaccines are up to date. He is born in 1968 and has no measles containing vaccines documented.

Would you recommend MMR vaccine?

Case Study 3

Scenario 3

An 11-month-old and her parents arrive at the clinic. The parents are first time parents and are nervous about their daughter getting sick. She has already been hospitalized once for RSV. They aren't planning to travel anywhere- but they do live close to Lethbridge and like to do their grocery shopping in Calgary.

Would you recommend an early MMR vaccine?

Serology recommendations

Serology recommendations

- **Serology for measles, mumps, rubella is not routinely recommended pre and post- immunization.**
  - Measles: Individuals with 2 documented doses of a measles-containing vaccine do not require a third dose **regardless of negative or indeterminate measles serology**. Consider these individuals to have presumptive evidence of immunity.
  - Mumps: Documented history of 2 valid lifetime doses of mumps-containing vaccine **regardless of negative or indeterminate mumps serology.** In Alberta, mumps IgG is not accepted as evidence of immunity.
  - Rubella: Individuals with 2 documented doses of a rubella-containing vaccine do not require a third dose **regardless of negative or indeterminate rubella serology**. Consider these individuals to have presumptive evidence of immunity except for pregnant individuals.

Source: AHS Immunization Program Standards Manual (IPSM): 07.270 Measles Mumps Rubella Vaccine Biological Page; 07.271 Measles, Mumps, Rubella and Varicella Vaccine Biological Page

Serology Recommendations – cont'd

- Varicella: Pre-immunization serology is indicated for all susceptible individuals 18 years of age and older. Serology not recommended post-immunization.

Note: Special considerations in pregnancy, SOT/HSCT candidates and other specific chronic medical conditions, and healthcare workers.

Source: AHS Immunization Program Standards Manual (IPSM): 07.270 Measles Mumps Rubella Vaccine Biological Page; 07.271 Measles, Mumps, Rubella and Varicella Vaccine Biological Page

Serology Scenario

Scenario 4

You receive prenatal serology results for a 22 year old. The rubella result is 7.2IU/mL- low. On review of her immunization history, she has a dose of MMR-Var vaccine at 13 months and a second dose at 5 years.

Would you recommend a MMR vaccine post-partum?

CHIP Slice update

- Several updates have been made to the Infant and Childhood Immunization Report in CHIP SLICE to give you better visibility into your clients' immunization status and make it easier to identify and act on gaps in coverage.
- These updates are designed to help quickly see which children are due, overdue, or not yet due; prioritize outreach; schedule children who are ready for their next dose; and find additional ways to contact families when needed.
- Colour coding has been added

See SLICE or contact the OKAKI Helpdesk team at **helpdesk@okaki.com or 1-877-696-5254**.

References and Resources

AHS Immunization Program Standards Manual

Alberta immunization policy | Alberta.ca

Notifiable disease guidelines | Alberta.ca

MyHealth.Alberta.ca: Tetanus, diphtheria, acellular pertussis (Tdap) vaccine

One Health Immunization and Notifiable Disease

Canadian Immunization Guide - Canada.ca

National Advisory Committee on Immunization (NACI): Statements and publications - Canada.ca

BC Centre for Disease Control Immunization Clinical Resources

References and Resources

- MMR Vaccination for Infants 6 Months to Less Than 12 Months of Age - Children's Mercy
- Effect of measles vaccination in infants younger than 9 months on the immune response to subsequent measles vaccine doses: a systematic review and meta-analysis - The Lancet Infectious Diseases
- Effect of early measles vaccination on long-term protection: A systematic review - ScienceDirect
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- Measles vaccines: WHO position paper – April 2017

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Questions?

Contact information for future questions:

CDC Immunization Team

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