BC WOMEN'S HOSPITAL+ HEALTH CENTRE
Provincial Health Services Authority

THE UNIVERSITY OF BRITISH COLUMBIA

Reproductive Infectious Diseases Service Memo: July 15, 2025

MEASLES AND PREGNANCY

SUMMARY OF BC SITUATION

As of July 2025, over 100 cases of measles infection have been reported in British Columbia this year, with evidence of community transmission. With community transmission, rates of infection can increase significantly over a short period of time. Health care workers should be familiar with measles, how to diagnose, test, and prevent its spread and sequelae.

MEASLES VIRUS DISEASE

Measles is an RNA virus that is a highly contagious respiratory virus. It can cause severe disease for pregnant women and pregnant people, adverse pregnancy outcomes and severe disease for newborns. Almost all people who are exposed to measles and are *non-immune/susceptible* will develop the disease. Susceptible pregnant patients are 10 times more likely to develop the disease, compared to those who are not pregnant and have a 10 times higher risk of death.[1]

MEASLES DURING PREGNANCY

Measles infection in pregnancy, in approximately 5% of cases, can lead to serious complications which include maternal pneumonia (interstitial pneumonitis), hepatitis, and death[2]. Maternal infection is associated with increased rates of spontaneous abortion, fetal growth restriction and preterm birth but is not associated with a congenital malformation syndrome like rubella infection. When maternal infection occurs within 14 days of delivery, neonatal infection may occur. Significant neonatal sequelae from this early infection may result in blindness, deafness, encephalitis and death.[6]
[3]

Definition of immune:

1. If born before January 1, 1970 (i.e. likely had natural measles infection and acquired immunity).
2. Have received two doses of measles-containing vaccine (e.g., either MMR or MMRV vaccines).
3. Have had measles infection.
4. Have had testing for measles and gave a positive measles IgG. In the setting of pregnancy where rubella IgG is positive, AND the pregnant person was born in Canada AND participated in routine immunization programs, they are by proxy, considered immune to measles.

Otherwise, individuals should be considered susceptible/non-immune.

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It is estimated that 90% of Canadians are immune to measles. If you have a pregnant patient who is non-immune to Rubella, they are likely non-immune to measles. Educate them on the risk of measles and to avoid large gatherings and anyone who is symptomatic or has known exposure. All household/family members should receive MMR if not received previously. Offer non-pregnant reproductive aged women MMR if unvaccinated.

Measles Immunity Testing

Ordering measles IgG to routinely test for immunity is **NOT** recommended. However, this can be requested through the local Medical Health Officer in the context of a significant exposure risk in a susceptible person when contemplating use of post exposure prophylaxis (IVIg) in pregnancy. This is typically done on convalescent sera stored at the BCCDC, from the first antenatal blood draw.

MEASLES PRESENTATION AND INVESTIGATIONS

The incubation period for measles is 7-21 days (typically 10 days). Clinically, infection often presents as:

1. Initial symptoms: Fever and malaise, followed by cough, runny nose and conjunctivitis
2. Within 2-3 days of initial symptoms, a mucosal rash on the inside of the cheek or palate may occur as grey/white elevated lesions on an erythematous base (Koplik spots).
3. Within 3-5 days of initial symptoms, a skin rash often appears. This is an erythematous, maculopapular rash that starts on the face and spreads to the neck, trunk and extremities.

Patients are infectious one day prior to the initial symptoms to 4 days after the onset of the rash.

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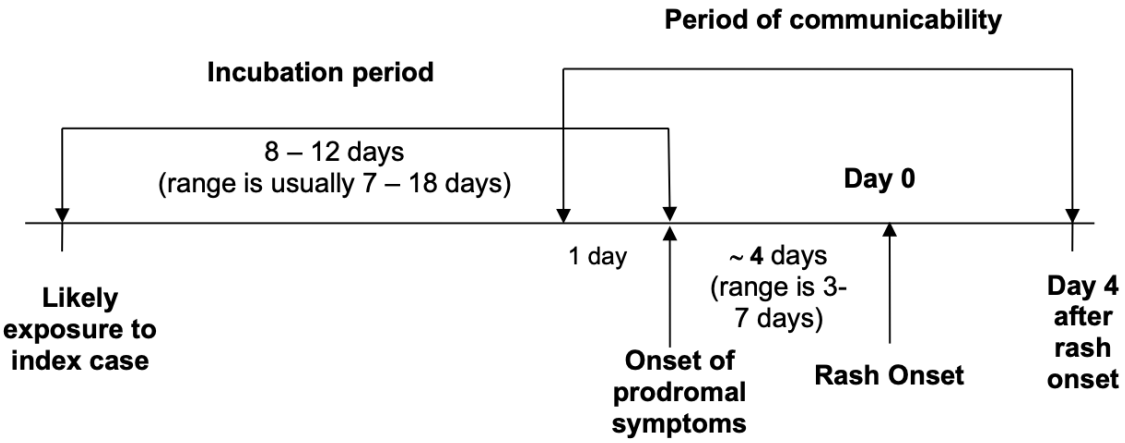

The diagnosis of measles should be considered in anyone who presents with a compatible febrile rash illness with the above associated symptoms, with potential exposure to a known case or travel to an area where measles is circulating.

Steps to follow if the above criteria are met:

1. **Initiate airborne and droplet precautions** as per local infection prevention policy and inform your local IPAC team

For any mother-baby cases (post-partum) involving suspected or confirmed measles, contact Infection Prevention and Control (IPAC) in the relevant hospital for further additional precautions guidance.

2. **Testing recommendations for diagnosis of measles**:

Preferred method:
- Nasopharyngeal swab for measles nucleic amplification test (NAT)
- Throat swab for NAT in universal media

Urine for measles NAT if >7 days after rash onset

Turnaround time for measles NAT is ~24 hours once the sample reaches the BCCDC.

Measles serology for IgM and IgG can be considered as complimentary testing to NAT, especially if >14 days after rash onset. IgM is positive in 80% of cases at 3 days after rash onset and IgG is positive at 7 days after rash onset. For many acute

cases, serology is not typically indicated as NAT is the preferred diagnostic test for measles.

Turnaround time for measles IgM and IgG is ~2-3 days.

For latest testing advice, see: BCCDC Public Health Laboratory Memos & Communications

Inform your local Medical Health Officer if a patient is strongly suspected (based on susceptibility, exposure history, and symptoms) to have measles or has been diagnosed with measles. This reporting helps facilitate timely public health and infection prevention and control interventions, including patient isolation, contact identification, exposure risk assessment, and post-exposure prophylaxis and exposure notifications, where indicated.

3. **Maternal treatment** is supportive and aimed at symptom control and management of complications. No antiviral therapy is available. Vitamin A supplementation in pregnancy for measles treatment or prevention is not recommended.
   If a pregnant person is diagnosed with measles, but is well enough to recover at home, they should seek medical care if they develop:

- breathing difficulties
- severe dehydration
- severe drowsiness
- persistent high fever (>39.5 °C) despite acetaminophen use
- decreased fetal movements or
- signs of preterm labour

4. **Who to call:** For pregnant patients diagnosed with measles, call your **local Medical Health Officer (see numbers below).** In addition, you may call Maternal Fetal Medicine at BC Women's Hospital for acute management advice 24h a day at 604- 875-2161 and ask for the Maternal Fetal Medicine physician on call. The Reproductive Infectious Diseases on call MD is available for advice M-F 9am-5pm (604-875-2161) or you may refer to the Reproductive Infectious Disease Clinic at The Oak Tree Clinic at BCWH for recommendations on surveillance of pregnancy with intra-partum and post-partum considerations, depending on the gestational age at time of diagnosis. These services are available in person or by tele-health and serve the entire province.

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WHAT IF A SUSCEPTIBLE PREGNANT PERSON IS EXPOSED TO MEASLES?

As a first step, please review your patient's immunization status and history to assess susceptibility. Depending upon the medical indications, patient age and weight, and time from exposure, different Post-exposure Prophylaxis (PEP) options are available against measles.

For pregnant patients, the PEP option is Intravenous immune globulin (IVIg). IVIg reduces the risk of infection and lessen the severity of measles among exposed susceptible/non-immune pregnant women and pregnant people. It is estimated that IVIG is 75% (95% CI 0 to 94%) to 100% (95% CI 56.2% to 99.8%), effective if administered within 6 days of exposure[4].

400mg/kg of IVIg as a single dose is recommended for non-immune/susceptible pregnant people within 6 days of exposure. IVIg dosing is based on current maternal weight. Vital signs including fetal heart rate are recommended before, during, and after IVIg administration.

To facilitate decision making in a timely fashion around susceptibility and need for IVIg, immediate contact with your local Medical Health Officer/ Public Health Physician on call as well as Maternal Fetal Medicine, is recommended. They are available 24 hours a day.

MEDICAL HEALTH OFFICER / PUBLIC HEALTH PHYSICIANS available 24/7

- **Fraser Health:** 604-507-5471
- **Interior Health:** 1-855-549-6364
- **Island Health:**
  - South Island: 1-866-665-6626
  - Central Island: 1-866-770-7798
  - North Island: 1-877-887-8835
- **Northern Health:**
  - Business hours: 1-855-565-2990
  - After business hours: 1-833-214-3274
- **Vancouver Coastal Health:**
  - Business hours: 1-855-675-3900
  - After business hours: 604-527-4893

MATERNAL FETAL MEDICINE PHYSICIAN 24/7
604-875-2161. Ask for Maternal Fetal Medicine on call

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PEP Post Measles Exposure Recommendations BCCDC 2025[5]

Immune/susceptible status by age, pregnancy, and immunocompetency	Time since exposure to measles	
	≤ 72 hours (3 days)	>72 hours – 6 days
Individuals with measles immunity	No post-exposure prophylaxis required. If only a single dose of measles-containing vaccine has been received on or after the 1st birthday, and born in/after 1970 (1957 for healthcare workers), administer a 2nd dose of measles regardless of the time elapsed since the measles exposure.	
Susceptible infants 0-6 months old[1]	IMIg (0.5 mL/kg)[2,3,4]	
Susceptible immunocompetent infants aged between 6 and <12 months	MMR vaccine[5,6]	IMIg (0.5 mL/kg)[2,3,4]
Susceptible immunocompetent individuals 12 months of age and older[7]	MMR vaccine[5] (To protect against current exposure)	MMR vaccine[5] (To protect against future exposures)
Immunocompromised individuals 6 months of age and older[8,9] Susceptible pregnant women and pregnant people[1,8]	IVIg (400 mg/kg) or IMIg (0.5 mL/kg)[4], limited protection for those weighing 30 kg or more	

LEGEND:
IMIg: Intramuscular immunoglobulin, GamaSTAN®
IVIg: Intravenous immunoglobulin. There are four IVIg products available in Canada through Canadian Blood Services. One or more of these will be available at the hospital blood bank. These are: Gammagard®, Gamunex, IGIVnex and Privigen®.

The IVIg order set can be found on Cerner under 'IVIG Inpatient'.

If you are aware of an exposed and susceptible patient, or a patient with suspect active measles, call ahead to your local health care facility before directing them to present for assessment. Upon arrival, place the patient on Airborne or Airborne, Droplet and contact Precautions as per the local Measles Precautions Algorithm. The Medical Health Officer for your region and your local IPAC team will assist in determining if the exposed and

susceptible individual is within the infectious window and make recommendations on best type of precautions and need for post-exposure prophylaxis.

References:

1. Rasmussen SA, et al. What obstetric health care providers need to know about measles and pregnancy. Obstet Gynecol 2015;126:163–70
2. Congera P, et al., Measles in pregnant women: A systematic review of clinical outcomes and a meta-analysis of antibodies seroprevalence. J Infect. 2020 Feb;80(2):152-160
3. Osman et al., Population immunity to measles in Canada using Canadian Health Measures survey data – A Canadian Immunization Research Network (CIRN) study. Vaccine. 2022 May 20;40(23):3228-3255.
4. Summary of NACI statement of February 13, 2025: Updated recommendations on measles post-exposure prophylaxis and Updated recommendations on measles post-exposure prophylaxis June 4, 2025. www.Canada.ca
5. http://www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Guidelines%20and%20Manuals/Epid/CD%20Manual/Chapter%201%20-%20CDC/Measles.pdf
6. Do, L and Mulholland, K. Measles 2025. NEJM. June 2025. DOI:10.1056/NEJMra2504516