Measles Resources for Healthcare Professionals

Overview

- Measles, sometimes called rubeola or red measles, is an illness caused by the measles virus. The virus spreads easily through the air from respiratory secretions, such as when someone who has measles coughs or sneezes. The virus can last in the air even hours after the person has left the space.
- Immunization is highly effective at preventing measles.
- Isolation of suspect and confirmed cases is important to prevent further spread of measles.
- Measles is associated with a high risk of complications.
- There is no specific antiviral treatment for measles infection.
- Measles treatment focuses on care to relieve symptoms and prevent and manage complications. This includes rehydration, pain relief and antibiotics for secondary infections. Health care providers should offer vitamin A supplements to all children with measles.

Measles Symptoms

Symptoms of measles can include:

- fever of 38.3°C or higher; **and**
- cough, runny nose, or red eyes; **and**
- a rash
    - appears 3 to 7 days after fever starts, usually beginning behind the ears and on the face and spreading down to the body and then to the arms and legs.
    - appears red and blotchy on lighter skin colours. On darker skin colours, it can appear purple or darker than the skin around it, or it might be hard to see.
    - View measles rash images:

Measles rash

Image 1: Courtesy of Dr. CW Leung, Department of Paediatrics and Adolescent Medicine, Princess Margaret Hospital, Hong Kong.

Image 2: Courtesy of the U.S. Centers for Disease Control and Prevention.

- More information at: www.ahs.ca/measles

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Alberta Health Services

Measles Complications

- People at high risk for complications include:
    - infants and children aged <5 years,
    - adults aged >20 years,
    - pregnant women,
    - people with weakened immune systems, such as from leukemia or severe HIV infection.
- Even previously healthy people can have serious illness from measles.
- One to three of every 1,000 people with measles will die.
- Complications should be appropriately tested for and treated, such as:
    - pneumonia/pneumonitis (1 in 10 cases),
    - encephalitis (1 in 1,000 cases), and
    - other infections.
- Measles may also be complicated by other infections, including viruses and secondary bacterial infections. Common complications from measles include otitis media, pneumonia, pneumonitis and diarrhea.
- Measles infection can lead to temporary immune suppression for previously acquired infections (known as immune amnesia).
- A rare, but very serious complication is Subacute sclerosing panencephalitis (SSPE), which can develop years after infection which will be fatal.

Measles Prevention and Control

Reporting Suspect Measles

- To report a suspect measles case, call the measles hotline at 1-844-343-0971

Vaccination

- Measles can be prevented with vaccination. The measles-mumps-rubella (MMR) vaccine or the measles-mumps-rubella-varicella (MMRV) vaccine are routinely given in childhood in Canada.
- For measles assessment and booking immunizations call the measles hotline at 1-844-944-3434
- For further information on routine childhood immunization, visit ahs.ca/immunization You can also learn more from MyHealthAlberta about the risks of measles here and find frequently asked questions here. For the latest information on measles in Alberta, visit ahs.ca/measles

- Please see the vaccine eligibility in Table 1

Table 1: Measles Immunization eligibility (from alberta.ca/measles)

Age cohort	Vaccine recommendations
Infants 6 months up to and including 11 months of age living in Central, North and South Zones.	1 dose of MMR vaccine (This is considered a NULL dose and these children will still require their routine immunizations of a measles containing vaccine at 12 and 18 months)
Children 12 months up to and including 17 years of age	Routine schedule is 2 doses of measles-containing vaccine at 12 and 18 months of age, though 2 doses can be offered at least 4 weeks apart at any age in this cohort
Adults born in 1970 or later	2 lifetime doses of measles-containing vaccine at least 4 weeks apart
Healthcare workers regardless of age	2 lifetime doses of measles-containing vaccine at least 4 weeks apart
Students at post-secondary educational institutions born before 1970	Generally considered immune. Vaccine not routinely recommended, but 1 lifetime dose may be considered.
Other adults born before 1970	Generally considered immune. Vaccine not routinely recommended.

Measles Post-Exposure Prophylaxis (PEP)

- Susceptible contacts of a measles exposure may be offered post-exposure prophylaxis MMR vaccine (within 72 hours) or Immunoglobulin (within 6 days) if eligible.
- Immunoglobulin orders and resources are standardized across the province using Transfusion Medicine protocols:

    - Immunoglobulin is ordered within the EPIC/Connect Care system by a privileged MRP at an AHS or Covenant site.
    - IVIG will be given at a transfusion appointment if the patient is not already an inpatient or ED patient.
    - Administration must follow the IVIG protocol available on Immune Globulin (IVIG and SCIG) | Alberta Health Services.
- Additional information regarding Immunoglobulin is available on the AHS Measles Information for Healthcare Professionals page Measles Information for Health Professionals | Alberta Health Services

Exposed Individuals who are Pregnant

- For additional information and guidance regarding supporting exposed individuals who may be pregnant, please see the ACOG guideline Measles, Mumps, Rubella (MMR) Vaccination and Management of Obstetric–Gynecologic Patients During a Measles Outbreak | ACOG and CMAJ Measles in pregnancy | CMAJ.
- Physicians can request add-on Measles serology to prenatal blood work via fax to APL; please use this form.

Isolation

- All suspect and confirmed measles cases should be isolated from onset of symptoms until 4 days after they develop a rash; airborne precautions should be followed in healthcare settings. See IPC Measles Emerging Issues Resources.
- All healthcare providers should observe airborne precautions in caring for patients with measles. See IPC Measles Emerging Issues Resources.

Measles Treatment

Presently, measles treatment focuses on supportive care to relieve symptoms and prevent and manage complications. This could include rehydration, symptom relief and antibiotics for the management of secondary infections. There is likely value to providing Vitamin A to specific patients with measles.

Antibiotics

- Measles may be complicated by secondary bacterial infections. Pneumonia and pneumonitis are the most common complications of measles for which antibiotic treatment is indicated.
- Treatment decisions for infections should be based on the clinical assessment of a healthcare provider, taking into account type of infection, illness severity, and other patient factors.

- Patients admitted for pneumonitis or pneumonia, especially when severe, should receive appropriate empiric antimicrobial treatment.

Inhaled steroids

- Inhaled steroids may be indicated for patients with a history of reactive airway disease (asthma), and their use should be based on individual clinical decision making by a healthcare provider.
- There is no evidence that systemic steroids have impact on the progression or resolution of measles.

Intravenous Immune Globulin (IVIG)

- There has been no demonstrated benefit of IVIG in the treatment of measles
- Post Exposure Prophylaxis use of IVIG and IMIG may be considered in specific circumstances.

Vitamin A Supplementation

- Vitamin A deficiency is linked to delayed recovery and greater complications from measles. Measles can also deplete vitamin A in the body.
- Several health organizations, including Health Canada, the World Health Organization (WHO), and the Centres for Disease Control and Prevention (CDC) recommend that children diagnosed with severe measles, specifically those who require hospitalization, receive vitamin A supplements to help prevent and reduce complications due to measles. The value of supplemental Vitamin A in high-income countries is uncertain.[1]

  Healthcare providers should offer vitamin A supplements to ***children requiring admission to hospital***, particularly if there are any concerns regarding nutritional status. Vitamin A can also be considered for ***children and adults in the community where there is concern about food insecurity and nutritional status***.

- Importantly, measles vaccination is the only preventive therapy for measles. Vitamin A will not prevent measles infection and should not be given prophylactically.

[1] Lo Vecchio, A. et al. Pediatric Infectious Diseases Journal. 2021;40:723-729.

Current Vitamin A dosing recommendations for children with severe measles and in hospital:

Under the supervision of a healthcare provider, the WHO recommends Vitamin A to be dosed once daily for two days, for a total of two doses. The recommended age-specific treatment dose for measles is:

- Infants younger than 6 months of age – 50,000 IU
- Infants 6 to 11 months of age – 100,000 IU
- Children 12 months of age and older – 200,000 IU
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For children with clinical signs and symptoms of vitamin A deficiency, administer an additional (third) age-specific dose of vitamin A 2 to 4 weeks following the first round of dosing.

Support for Healthcare Providers:

Alberta Health and Alberta Health Services (AHS) are actively monitoring the current situation in Alberta and encourage healthcare providers to be aware of this increased frequency of disease, including measles signs and symptoms, testing, clinical pathways and information regarding immunization.

Additional resources include:

- Alberta Health: Disease Prevention and Surveillance for Measles
- alberta.ca/measles
- AHS: Measles Information for Health Professionals
- Health Canada: Measles for health professionals