

Pertussis Cases in Alberta

Date: March 13, 2023

To: Central Zone Physicians and Emergency Department Staff

CC: Provincial: Lab, Communicable Disease Control (Notifiable Diseases), U of A Rural Program Coordinator, Medical Officers of Health, Office of the Chief Medical Officer of Health, Health Link Emerging Events

Central Zone: Lab Director, Public Health Director and Area Managers, Workplace Health and Safety, Infection Prevention Control, Medical Affairs, Chief Zone Officer and Medical Director, Emergency Medical Services, Communications, Nurse Practitioners, Midwives, Environmental Public Health, Emergency/Disaster Management Director

From: Central Zone Medical Officers of Health

Since December 2022, 62 cases of pertussis have been identified in Alberta, including four children who have been hospitalized; 95% of cases are linked to an outbreak in South Zone.

- the median age is 5 years
- 87% of cases are less than 19 years
- 75% are unimmunized
- 23% are partially immunized
- fewer than 2% are up to date on immunizations

Recently, two cases were identified in Central Zone. Outbreaks of pertussis in Central Zone in the past highlight the need for awareness, testing, reporting, treatment, contact tracing, prophylaxis, infection control, and immunization described below.

Clinical Presentation: Typically, there are three stages.

1. Catarrhal – insidious onset of coryza, sneezing, low-grade fever, and mild cough.
2. Paroxysmal – cough becomes more severe over one to two weeks with repetitive spells, followed by an inspiratory whoop or post tussive vomiting or both.
3. Convalescent – symptoms gradually wane over weeks to months.

Older children and adults can have atypical manifestations with prolonged cough, with or without paroxysms and no whoop. Babies may not cough at all or may have apnea.

Transmission: Pertussis is a highly contagious bacterial infection that is spread through respiratory droplets, or direct contact with respiratory secretions. Contacts are defined as persons:

- o living in the same household
- o sharing a confined space with a case for one hour
- o in direct contact with nasal/respiratory secretions

Vulnerable contacts are defined as:

- o pregnant women in the third trimester
- o infants

Incubation period: 7-10 days with range of 5-21 days.

Period of communicability:

- from onset of catarrhal symptoms until two weeks after cough onset (approximately day 21 of illness) in untreated patients
- five days following antibiotic treatment

Diagnosis: Collect a nasopharyngeal swab (nylon flocked with plastic shaft) for PCR testing. Place in Regan-Lowe transport medium (black and stored in refrigerator; check expiry date) or universal transport medium if Regan-Lowe isn't available.

Management of Cases: Antibiotic treatment eradicates *B. pertussis* from the nasopharynx and reduces infectivity but has minimal effect on clinical symptoms or course of illness unless given in early stages (incubation period, catarrhal, or early paroxysmal); however, there is no time limit for treatment of symptomatic cases. Cases should remain home for five days after start of antibiotic therapy.

Management of Contacts: Provincial Communicable Disease Control (Notifiable Diseases) will follow up all contacts of a confirmed pertussis case.

- Household and Vulnerable contacts will be advised to contact their physician for antibiotic prophylaxis or treatment (see Appendix 1 below). Prophylaxis later than three weeks from the last exposure is not warranted.
- Contacts who reside/attend/work at a setting where infants or pregnant women in the third trimester are present on a regular basis may be advised to receive prophylaxis to avoid secondary transmission.
- Potential contacts at schools, churches, social events, and sports teams will be alerted to monitor for signs and symptoms and contact 811 if they are Vulnerable contacts or may expose Vulnerable contacts.
- Asymptomatic contacts **do not** require testing.

Reporting: Suspected cases of pertussis should be reported to Provincial Communicable Disease Control (Notifiable Diseases) to allow timely contact follow-up:

- 08:30 to 16:00 hrs. weekdays, call: 1-855-444-2324 or email: provincialcdcintake@ahs.ca

Infection Control: Health Care Workers should use a surgical mask and eye protection (droplet precautions), with consideration of gloves and gown if patient is coughing (routine practices). Coughing patients should be provided a mask; a separate room is ideal; otherwise space them 2m apart from others.

Immunization: Children, pregnant women in the 27th week or later during each pregnancy, health care workers (eligible at 18 yrs.), and general population adults (co-administered as part of dTap vaccine given as booster doses for diphtheria and tetanus every 10 years) are recommended to be immunized. Public can be directed to visit immunizealberta.ca to learn more about routine immunizations or call 811 to book an appointment at an AHS immunization clinic.

Thank you for your attention and assistance.

Enclosure Appendix 1

Appendix 1: Recommended Antibiotics for Treatment and PEP

Antibiotic	Dosage	Comments
Azithromycin	<p>Infants < 6 months: 10 mg/kg/day as a single dose orally daily for 5 days</p> <p>Infants ≥ 6 months to Children < 12 years: Day 1: 10 mg/kg/day as a single dose orally (maximum 500 mg/day) Day 2–5: 5 mg/kg/day as a single dose orally (maximum 250 mg/day)</p> <p>Children ≥ 12 years and adults: Day 1: 500 mg/day as a single dose orally Day 2-5: 250 mg/day as a single dose orally</p>	First Line
Clarithromycin	<p>Infant ≥ 1 month to Children < 12 years: 15 mg/kg/day in 2 divided doses orally for 7 days (maximum 1g/day)</p> <p>Children ≥ 12 years and adults: 500 mg BID orally/day for 7 days</p>	Second Line Not recommended for infants aged <1 month and in pregnancy
Erythromycin	<p>Adults: 2000 mg/day divided into 4 doses orally for 7 days</p>	Third Line For adult use ONLY. * <i>Erythromycin estolate (liquid/oral suspension) for pediatric population is not available in Canada as of spring 2017</i>
Trimethoprim-Sulfamethoxazole (TMP-SMX)	<p>Infants ≥ 2 months to Children <12 years: 8 mg/kg/day (TMP) and 40 mg/kg/day (SMX) divided into 2 doses orally for 14 days</p> <p>Children ≥ 12 years and adults: 320 mg/day (TMP) and 1600 mg/day (SMX) divided into 2 doses orally for 14 days</p>	Alternate – used only if above drugs are contraindicated. Cannot be used for children under the age of 2 months, in pregnancy or during lactation

Reference: Alberta Notifiable Disease Guidelines

<https://open.alberta.ca/dataset/28b7c03a-f2e1-4b61-b1cc-e2cad282522a/resource/5c3ba9ad-c039-489d-b9d7-8b270a22cde1/download/health-phdmg-pertussis-2021-09.pdf>.

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