

Date: Friday, January 27, 2023
To: South Zone Physicians
From: Medical Officers of Health – South Zone
Subject: PERTUSSIS Cases in South Zone

Since December 2022, 16 cases of pertussis have been identified, including 3 children hospitalized in January. Due to recent increase in cases, all locally acquired, an outbreak has been declared for the County of Lethbridge, Taber Municipal District, and Bow Island. DTaP immunization rates for children in these areas are low, ranging from 30-45% of 2-year-olds having 4 doses of DTaP immunization. Of identified cases in this outbreak, 63% are unimmunized, 31% are partially immunized, and 6% are up-to-date on immunizations. There is concern that there is more pertussis circulating in the community, as many people with the disease may not seek medical attention. Therefore, we are requesting physician awareness, identification of cases and early treatment to prevent further transmission.

Disease Transmission:

- Pertussis is a highly contagious bacterial infection that is spread through respiratory droplets, or direct contact with respiratory secretions.
- Due to low herd immunity rates in southern Alberta, and the fact that the acellular Pertussis vaccine has 80–85% efficacy and some waning immunity, it is not uncommon to see clusters of illness and disease spreading to immunized children/adults in the setting of community spread.

Clinical Presentation: Typically, 3 stages:

- *Catarrhal Stage* –insidious onset of coryza, sneezing, low-grade fever and mild cough.
 - *Paroxysmal Stage* – cough becomes more severe over 1 – 2 weeks with repetitive coughing spells followed by an inspiratory whoop or post tussive vomiting, or both.
 - *Convalescent Stage* – 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. They may struggle to breathe or have apnea.

Diagnosis:

- PCR testing of a nasopharyngeal specimen (**NP swab**) obtained during the **first 3 weeks** of disease. Use the Regan-Lowe Transport media which is black and is stored in the refrigerator. Tests may be negative if taken beyond the 3 weeks window.

Management of Case:

- Antibiotics for confirmed cases (see page 3)
 - Treatment eradicates *B. pertussis* from the nasopharynx but has minimal effect on clinical symptoms or course of pertussis illness unless given in the early stages of infection (incubation period, catarrhal or early paroxysmal stages).

- All cases are required to stay home and not expose new people **for 5 days** after start of antibiotic therapy.
- If there is no treatment or treatment is incomplete, the case should be excluded from places where there are vulnerable persons:
 - for 21 days from onset of paroxysmal, or
 - until the end of the cough, whichever comes first, and
 - negative results from culture or PCR have been received.

Management of Contacts:

- Public Health will follow up all contacts of a confirmed Pertussis case to offer post exposure prophylaxis) to protect “vulnerable persons” (women in third trimester of pregnancy and infants <1 year of age).
- Postexposure prophylaxis should be offered to all vulnerable persons with significant exposure to a pertussis case and household contacts, regardless if vulnerable persons are in the household.

Active Surveillance:

- In order to help with active surveillance, please obtain an **NP swab within 21 days** of symptom onset for patients where you have a high clinical suspicion of a Pertussis diagnosis. There is no need to swab multiple cases within a single-family unit, as they all likely have the same infection.

Infection Prevention and Control for Hospitalized Patients:

- Please ensure droplet precautions are in place until 5 days after appropriate antibiotic treatment.

Prevention:

- Immunization as per Alberta immunization schedule for children and adults.
- Take the opportunity to review dTap eligibility when tetanus immunization indicated.
- One dose of pertussis containing vaccine for pregnant women in third trimester.
- Early diagnosis and treatment to prevent spread to others.

References:

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

Recommended Antibiotics		
Antibiotic	Dosage	Comments
Azithromycin	<p>Infants < 6months: 10 mg/kg/day as a single dose orally daily for 5 days</p> <p>Infants > 6mo to Children < 12years: Day 1: 10 mg/kg/day once daily po to a maximum of 500 mg/day. Day 2-5: 5mg/kg/day one daily po to a maximum of 250 mg/day. Total: 5 days</p> <p>Children > 12years and Adults: Day 1: 500 mg once daily po Day 2-5: 250 mg once daily po Total: 5 days</p>	First line
Clarithromycin	<p>Infants > 6mo to Children < 12years: 15 mg/kg/day divided in 2 doses po x 7 days (maximum of 1000 mg/day)</p> <p>Children > 12years and Adults: 500 mg bid po x 7 days</p>	Second Line Not recommended for infants aged < 1 month and in pregnancy
Erythromycin	<p>Adults: 500 mg po QID x 7 days</p>	Third Line for adults ONLY
Trimethoprim-Sulfamethoxazole (TMP-SMX)	<p>Infants > 2mo to Children < 12years: 8 mg/kg/day (TMP) and 40 mg/kg/day (SMX) divided into 2 doses po x 14 days</p> <p>Children > 12years and Adults: 320 mg/day (TMP) and 1600 mg/day (SMX) divided into 2 doses x 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

If you have any questions, or require further information, please contact the Medical Officer of Health on call at 403-388-6111.