

Bordetella parapertussis Information Sheet

AS OF OCTOBER 2022

Pathogen

Bordetella parapertussis is a bacterium that is similar to *B. pertussis* and causes a pertussis-like illness, but does not produce pertussis toxin because it lacks the expression of the gene coding for this toxin.

Clinical Symptoms

The symptoms of *B. parapertussis* infection are similar to pertussis (whooping cough) but are less severe and infection may be asymptomatic, likely due to *B. parapertussis* not producing the pertussis toxin. Studies have shown persons with *B. parapertussis* infection may have prolonged cough, paroxysmal cough, whoop, and vomiting, however these symptoms occur less frequently and for shorter duration than is typically seen with pertussis. Young infants (i.e. <6 months of age) may have a more severe course of parapertussis than older persons. Rarely, death can occur in infants with underlying health problems or in infants with *B. pertussis* coinfections.

Transmission

Transmission typically occurs when a susceptible person inhales aerosolized droplets from the respiratory tract of an infected person. Transmission via contact with fomites is thought to occur rarely, if ever.

Incubation Period

The incubation period is likely similar to pertussis: 7-10 days (range 5-21 days).

Communicability

Persons with parapertussis are likely to be most infectious shortly after disease onset and for up to three weeks if no treatment is given. Communicability ends after 5 days of treatment.

Other *Bordetella* Species

B. bronchiseptica and *B. holmseii* can also infect humans. *B. bronchiseptica* primarily affects immunocompromised people and *B. holmseii* can cause chronic cough in healthy people. Infected people should be referred to an infectious disease specialist.

Laboratory Diagnosis

B. parapertussis can be distinguished from *B. pertussis* via culture or PCR if a multi-target PCR assay is used that can detect insertion sequence elements (IS1001) specific to parapertussis.

Case Definition

There is no case definition for *B. parapertussis* infection because it is not a nationally notifiable disease nor reportable in Nebraska. However, outbreaks of *B. parapertussis* infection should be reported to your local health department or Nebraska DHHS.

Case Management

There are no national guidelines for the treatment or public health management of *B. parapertussis* infection. However, because young infants may be at risk for severe *B. parapertussis* disease, it is recommended that infants <6 months of age and people in contact with young infants who have confirmed *B. parapertussis* infection be treated in an attempt to reduce disease severity and shorten the infectious period.

This illness can be treated with the same antibiotics as pertussis. Persons, especially infants, infected with *B. parapertussis* should receive treatment promptly. Limited available data suggest *B. parapertussis* is susceptible to both macrolides and trimethoprim-sulfamethoxazole (TMP-SMX). The dosing and dosing schedule is the same as for *B. pertussis* infection. [Click here for more information on treatment recommendations.](#)

Persons with *B. parapertussis* infection should avoid contact with young infants until they have received five days of appropriate treatment. Furthermore, infected persons do not need to isolate nor stay home from school, work, or other activities because the illness is relatively mild. It is still important to use safe hygiene practices to reduce risk of spreading illness to others (see Preventative Measures section below).

Preventative Measures

Avoid close contact with others who are coughing or are ill, frequently wash your hands, and practice proper cough etiquette (cough/sneeze with a tissue or into your sleeve). Preventative treatment is not generally recommended for people who were in contact with persons with *B. parapertussis* infection, however it may be considered for close contacts who are at risk of severe disease (i.e. infants and immunocompromised individuals).

Post-Exposure Prophylaxis (PEP)

Prophylaxis for people exposed to *B. parapertussis* is not recommended.

Vaccination

There is no vaccine for *B. parapertussis*; *B. pertussis* vaccines are thought to offer little or no protection against *B. parapertussis* infection.

References

CDC Manual for the Surveillance of Vaccine-Preventable Disease, Chapter 10: Pertussis. <https://www.cdc.gov/vaccines/pubs/surv-manual/chpt10-pertussis.html>

Parapertussis Fact Sheets from other State Health Departments:

<https://www.health.state.mn.us/diseases/pertussis/parapertussis.html>

<https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/Immunization/ParapertussisQuicksheet.pdf>

<https://www.dhs.wisconsin.gov/publications/p01108.pdf>