B. parapertussis Infection: Public Health Recommendations

Pathogen
Bordetella parapertussis is a bacterium that is similar to B. pertussis and causes a pertussis-like illness, but does not produce pertussis toxin.

Clinical symptoms
The symptoms of B. parapertussis infection are similar to those of pertussis (whooping cough) but are typically milder and infection may be asymptomatic. Studies have shown that 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 (e.g., <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 (persons may be infected with B. pertussis and B. parapertussis at the same time).

Incidence of disease
It is estimated that 1% to 35% of known Bordetella infections are caused by B. parapertussis. Outbreaks are known to occur and have been reported recently in California.

Modes of 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 to be similar to that of pertussis: 7-10 days (range 5-21 days).

Period of 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. holmsei can also infect humans. B. bronchiseptica primarily affects immunocompromised people and B. holmsei 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 specific case definition for B. parapertussis infection because it is not a nationally notifiable disease and is not reportable in California. However, outbreaks of B. parapertussis infection should be reported to CDPH.

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.

Limited data suggest that B. parapertussis is susceptible to macrolides and trimethoprim-sulfamethoxazole and can be treated similarly to B. pertussis. Current treatment recommendations are available at: http://www.cdph.ca.gov/HealthInfo/discond/Documents/CDHPertussisQuicksheet(3)201010.pdf

Persons with B. parapertussis infection should avoid contact with young infants until they have received five days of treatment.

Postexposure prophylaxis (PEP)
Chemoprophylaxis of contacts within 2-3 weeks of cough onset of the index case should be considered for contacts at high risk for severe parapertussis disease. These contacts include: infants <6 months of age (particularly premature infants) and persons in contact with infants <6 months of age, including healthcare personnel. Starting PEP ≥3 weeks after exposure to an infectious case is probably of no benefit to the contact.

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