

West Virginia Department of Health and Human Resources Information for Physicians - Pertussis

Disease Information

Incubation Period: 7-10 days; rarely up to 21 days

Infectious Period: From prodrome (early symptom) onset to 3 weeks after paroxysm (cough) onset, or five days after starting antibiotic treatment. The disease is highly contagious and is spread by direct contact with secretions or face-to-face exposure.

Pertussis in Children: Onset is insidious, with symptoms of URI (catarrhal stage) lasting about one week. Cough begins during the catarrhal stage and progresses steadily. The patient appears well between bouts of coughing (and the diagnosis may be missed). The classic symptoms include whoop, vomiting, and apnea and may last 2-6 weeks. During convalescence, cough may persist many weeks.

Pertussis in Adults: Adults may get mild pertussis (e.g., chronic cough > 2 weeks) without severe complications. Treatment and prophylaxis of adults is important to prevent disease in infants and young children.

Diagnostic Testing of Suspect Cases

The organism is most easily recovered from nasopharyngeal mucus in the catarrhal or early paroxysmal stages, and is rarely recovered after the fourth week of illness. The standard and preferred laboratory test for diagnosis of pertussis is isolation of *Bordetella Pertussis* by bacterial culture. If PCR is performed, culture should still be done to confirm the diagnosis (CDC). False positive and false negative results may occur. A positive culture is diagnostic, whereas false-negative cultures are common in patients receiving antibiotics. Because of difficulties with laboratory testing, clinicians must often make the diagnosis on the basis of clinical findings such as inspiratory whoop, post-tussive emesis, and lymphocytosis. All symptomatic contacts to cases should be cultured prior to receiving antibiotic treatment, as well as all patients with an unexplained, sleep-disturbing cough. Special attention should be paid to infants, as well as adolescents and adults with mild illness that could represent pertussis. There is no charge for pertussis testing performed by the West Virginia Department of Health and Human Resources' Office of Laboratory Services. Pertussis culture test kits may be obtained by writing or calling:

West Virginia Bureau for Public Health
Office of Laboratory Services
167 Eleventh Avenue
Charleston, West Virginia 25303
(304) 558-3530

Consultation on laboratory diagnosis may also be obtained by calling the Office of Laboratory Services.

Close Personal Contacts

A close contact is defined as anyone who has had direct, personal contact with a person who has pertussis during the catarrhal and early paroxysmal stages of infection. This includes ALL residents of the same household; daycare and baby-sitting contacts; and close friends, regardless of immunization status. The disease is spread by direct contact with secretions or face-to-face exposure.

Recommended Action

For Treatment or Prophylaxis the recommended dosages are as follows:

Erythromycin

Children: 40-50 mg/kg/day in four divided oral doses for 14 days

Adults: 1-2 grams/day in four divided oral doses for 14 days

-OR- Trimethoprim/Sulfamethoxazole

Children: Trimethoprim - 8 mg/kg/day in two divided oral doses for 14 days

Sulfamethoxazole - 40 mg/kg/day in two divided oral doses for 14 days

Adults: (For adults the equivalent of one double strength tablet twice a day)

Trimethoprim - 320mg/day in two divided oral doses for 14 days

Sulfamethoxazole - 1,600 mg/kg/day in two divided oral doses for 14 days

The American Academy of Pediatrics Report of the Committee on Infectious Diseases ("Red Book") states that ". . . older children and adults with mild illness that may not be recognized as pertussis can transmit the disease." Erythromycin, a macrolide antibiotic, has been successful in rapidly clearing *B. pertussis* from the nasopharynx and has been the antimicrobial agent of choice for the treatment of pertussis. Although erythromycin has been shown to eliminate the organism after five days, 14 days of treatment should be given to avoid relapse. Generally, erythromycin will not change the course of the illness.

Because of the risk of kernicterus (a condition with severe neural symptoms, associated with high levels of bilirubin in the blood). TMP-SMZ should not be given to pregnant women at term, nursing mothers, or infants aged <2 months....(CDC)

Studies suggest that the newer macrolides, azithromycin (10-12 mg/kg per day, orally, in 1 dose for 5 days; maximum 600 mg/day) or clarithromycin (15-20 mg/kg per day, orally, in 2 divided doses; maximum, 1 g/day for 7 days), may be as effective as erythromycin and have fewer adverse effects and better compliance. Resistance to erythromycin (and other macrolide antimicrobial agents) by *B. pertussis* has been reported rarely. Penicillin and first- and second-generation cephalosporins are not effective against *B. pertussis* (American Academy of Pediatrics 2003 Red Book).

In addition to chemoprophylaxis, all household contacts younger than seven years of age should be considered for immediate diphtheria, tetanus, and acellular pertussis (DTaP) immunization according to the following criteria:

- a. If the child has received no vaccine, give one dose and continue the schedule.
- b. If the child has received at least four doses of vaccine, give a booster now unless the last dose was given within three years.
- c. If the child has received less than four doses and the third dose was six months or more before exposure, a fourth dose should be administered now.
- d. All children should be brought up-to-date and maintained up-to-date as appropriate for age.

Pediatric Unit Exposure in Hospitals/Physician Offices

Case isolated by droplet precautions: Surveillance only.

Case mistakenly admitted into open ward, open room, etc.:

- a. Chemoprophylaxis for staff with direct contact with respiratory secretions without wearing respiratory protection (e.g., face-to-face exposure during a paroxysmal coughing attack, performing a complete physical examination, including examination of nose and throat, suctioning the patient, intubation, bronchoscopy, or cardiopulmonary resuscitation).
- b. Similar guidelines should be followed for prophylaxis of patients. Because neonates and young infants are extremely vulnerable to severe disease and complications, a more lenient definition of contact may be used (e.g., being in an enclosed room with a documented case for one hour or longer).
- c. Case should be in droplet isolation.
- d. Surveillance of ward for URI symptoms for 14 days.

Precautions for Day Care/School

Chemoprophylaxis should be given as recommended above regardless of immunization status. Exposed children should be observed carefully for respiratory symptoms for at least 14 days. Symptomatic children should be excluded from day care/school pending a physician's evaluation. Children with pertussis, if their medical condition allows, may return after completion of five days of a 14-day course of erythromycin therapy. Children who have recovered from culture positive pertussis need not receive further pertussis immunization.

Reporting

Report suspected and confirmed cases to your local health department or the West Virginia Infectious Disease Epidemiology Program at 1-304-558-5358, or 1-800-423-1271.

Timely reporting enables your local health department to follow up on contacts and interrupt the chain of transmission.