

PERTUSSIS CASE AND OUTBREAK ‘QUICKSHEET’
California Department of Health Services—February 2004

Infectious agent: *Bordetella pertussis* (a bacterium)

Mode of transmission: Transmission most commonly occurs by contact with respiratory secretions or large droplets from the respiratory tracts of infected persons.

Incubation period: The incubation period is commonly 7-10 days (range 4-21 days), rarely up to 42 days.

Period of communicability: Persons with pertussis are most infectious during the catarrhal stage when they have cold-like symptoms and up to 2-3 weeks after onset of paroxysmal cough. With antibiotics, communicability ends after 5 days of treatment.

CDC CASE DEFINITION AND CLASSIFICATION

Clinical case definition: A cough illness lasting at least 2 weeks with one or more of the following: paroxysms of coughing, inspiratory “whoop”, post-tussive vomiting, AND without other apparent cause.

Laboratory Criteria for Diagnosis: Isolation of *B. pertussis* from clinical specimen or positive polymerase chain reaction (PCR) test for *B. pertussis*.

Case Classification (both probable and confirmed cases should be reported using DHS 8258)

Probable: A case that meets the clinical case definition, is not laboratory confirmed, and is not epidemiologically linked to a laboratory confirmed case.

Confirmed: A case that is culture positive and in which an acute cough illness of any duration is present; OR a case that meets the clinical case definition and is confirmed by positive PCR; OR a case that meets the clinical case definition and is epidemiologically linked directly to a case confirmed by either culture or PCR.

CLINICAL FEATURES

The illness usually has three stages: catarrhal, paroxysmal, and convalescent.

Catarrhal stage: Onset of cold-like symptoms (coryza, sneezing, mild fever, occasional cough). Fever is absent or minimal. Lasts approximately 1-2 weeks with cough gradually becoming more severe.

Paroxysmal stage: Spasms of severe coughing are followed by a sudden massive inspiratory effort. A characteristic whoop may occur as air is inhaled forcefully through a narrowed glottis. Post-tussive vomiting is common. In infants < 6 mos, whoop is rare and other respiratory manifestations are commonly confused with those due to respiratory viruses. Adolescents/adults are likely to have milder illness and whoop is uncommon .

Convalescent stage: The convalescent stage is characterized by a decreasing frequency and severity of coughing episodes, whooping and vomiting. Some cases have temporary recurrence of paroxysms with respiratory infections.

RECOMMENDED TREATMENT AND CHEMOPROPHYLAXIS*

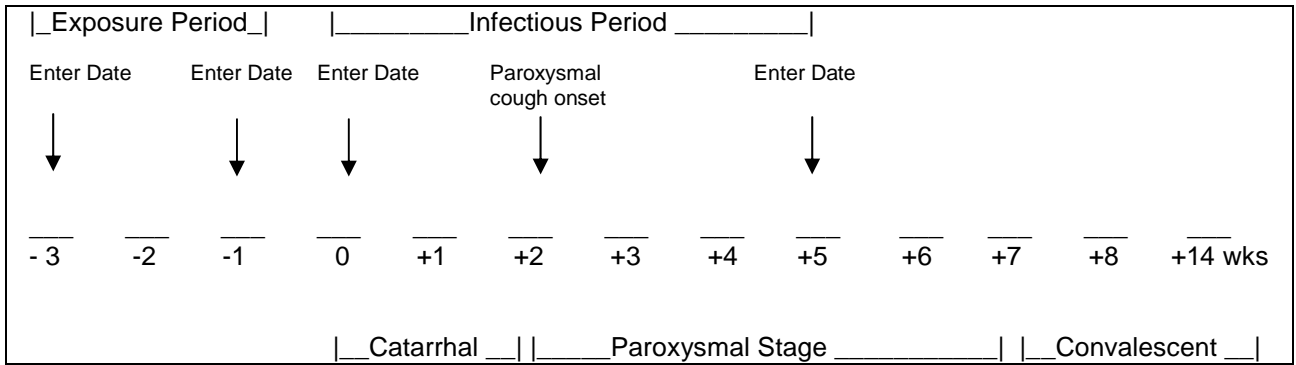
Drug	Infants and Children	Adults
Erythromycin	40-50 mg/kg/day- div.q6h po or iv (max 2 g/d) x 14 days	1-2 g/day – div.q6h po or iv (max 2 g/d) x 14 days
If person can not tolerate erythromycin or compliance is questionable:		
Trimethoprim/ Sulfamethoxazole (TMP-SMX)	trimethoprim 8 mg/kg/day, sulfamethoxazole 40 mg/kg/day - div.q12h po x 14 days	trimethoprim 320 mg, sulfamethoxazole 1600 mg – div q12h po x 14 days
Clarithromycin	15-20 mg/kg/day - div.q12h po (max 1 g/d) x 7days	15-20 mg/kg/day - div.q12h po (max 1 g/d) x 7 days
Azithromycin	10-12 mg/kg/day po (max 500 mg/d) x 5 days	500 mg/day day 1 250 mg/day days 2-5

*Initiating treatment \geq 3 weeks after cough onset has limited benefit to patient or contacts and initiating chemoprophylaxis \geq 3 weeks after exposure has limited benefit for the contact.

PERTUSSIS CASE INVESTIGATION AND OUTBREAK MANAGEMENT

The main purpose for responding to a pertussis case or outbreak is to prevent transmission to susceptible persons at increased risk of complications of pertussis, especially very young infants.

1. Confirm report that suspected case(s) meets case definition and/or is highly suspected.
2. Collect laboratory specimen(s) for diagnosis from case.
3. Start antibiotic treatment of case.
4. Identify and notify contacts. Special emphasis should be given to identifying those at high risk for severe pertussis or those who may transmit the disease to persons at high risk for severe disease.
5. Alert clinicians and educate the public.
6. Recommend chemoprophylaxis as appropriate. If chemoprophylaxis is necessary, it should be implemented as soon as possible (and within 21 days of exposure to infectious case). Chemoprophylaxis is recommended regardless of age and vaccination status.
7. Exclude symptomatic persons.
8. Vaccinate children who are not up-to-date for pertussis.
9. Active surveillance of contacts. In childcare/school, hospital and other high risk settings, close contacts should be monitored for acute illness for at least 21 days after their last exposure to an infectious case.
10. Report both clinically confirmed and probable cases to DHS on Pertussis Case Report form, DHS 8258.



CONTROL MEASURES

- Limited data from epidemiologic studies suggest that the early initiation of chemoprophylaxis of close contacts (within 2-3 weeks of cough onset of index case) may limit transmission of pertussis in households and in high risk settings (e.g., residential institutions for developmentally handicapped persons, hospitals).
- **Close contacts** include those who have had: Direct contact with respiratory, oral or nasal secretions from a symptomatic case (e.g., an explosive cough or sneeze in the face, sharing food/ eating utensils during a meal, kissing); Face-to-face contact, regardless of duration, with a case who is symptomatic (e.g., in the catarrhal or paroxysmal period of illness); Shared confined space in close proximity for a prolonged period of time; such as ≥ 1 hour with a symptomatic case.
- **High-risk contacts** are contacts of a pertussis case who may transmit disease to persons at high risk for severe illness and adverse outcomes (e.g., infants < 1 year; unimmunized children; immunocompromised persons; persons who have underlying severe disease such as chronic lung disease or cystic fibrosis).
- Persons at highest priority for chemoprophylaxis include: Close contacts in household and child care settings; Close contacts in a hospital setting; Close contacts at risk for severe disease and adverse outcomes; Close contacts who may transmit disease to persons at high risk for severe disease; Close contacts in group settings where close interactions occur (e.g. after-school care groups, playgroups, group of close friends, teammates).
- In general, chemoprophylaxis is not indicated for non-household, non-high risk contacts of a case during a school or community outbreak.
- If chemoprophylaxis is necessary, it should be recommended regardless of age and vaccination status.
- Initiating chemoprophylaxis ≥ 3 weeks after exposure to an infectious case is probably of no benefit to the contact.