

August 27, 2009

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We continue to get frequent questions about and reports of PERTUSSIS in the community; many with delayed diagnosis. Although infants have the greatest morbidity and mortality from pertussis, it is often the older children, adolescents and adults who have an atypical presentation and go unrecognized.

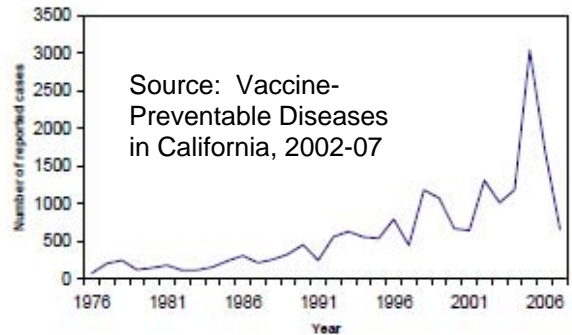
Pertussis

- **Description:** Pertussis, or whooping cough, is a very contagious, vaccine-preventable disease that has three stages:
 - **Catarrhal stage:** similar to common cold with mild upper respiratory tract symptoms and progresses to cough.
 - **Paroxysmal stage:** paroxysms of cough with inspiratory whoop (in some) and often followed by vomiting. *Cough can be mild in immunized children and adults.*
 - **Convalescent stage:** symptoms resolve gradually over weeks to months.

Infants younger than 6 months of age may have gagging or apnea as presenting symptoms and may not have a whoop. Patients generally appear well between coughing paroxysms, and there is often a household member with a cough. Presentation with fever, rash, wheezing, lymphadenopathy or atypical (“reactive”) lymphocytes is less likely pertussis.

- **Cause:** *Bordetella pertussis*, a Gram-negative bacteria. The incubation period is usually 7-10 days (range, 5-21 days). Pertussis is spread through respiratory secretions.
- **Complications:** Pertussis is most severe in infants younger than 6 months of age, especially in those who are preterm or unimmunized. Complications among infants include pneumonia (22%), seizures (2%), encephalopathy (<0.5%), malnutrition, and death (1% in infants < 2 months of age and <0.5% in infants 2-11 months of age). In adolescents and adults, complications include syncope, sleep disturbance, incontinence, rib fractures and pneumonia.
- **Differential diagnosis:** *Bordetella parapertussis*, *Mycoplasma pneumoniae*, *Chlamydia trachomatis*, *Chlamydophila pneumoniae*, and viruses such as adenovirus, and respiratory syncytial virus can also cause similar cough illnesses.
- **Diagnosis:** *Pertussis is often a clinical diagnosis based on the symptoms noted above.* Nonspecific findings that may be seen in pertussis include an increased absolute white blood cell count with lymphocytosis (normal lymphocytes), especially in infants and young children. Culture and polymerase chain reaction (PCR) testing are recommended for confirming the diagnosis.
 - **Culture:** Culture is 100% specific, but a negative culture does not exclude pertussis. A nasopharyngeal (NP) specimen should be obtained by aspiration or use of Dacron or calcium alginate swabs and placed in special transport media. Cultures may be falsely negative if antimicrobial therapy has been started, the person has been previously immunized, or it is more than 3 weeks since cough onset.
 - **PCR:** PCR has improved sensitivity and more rapid results when compared to culture, but false-positive results have been reported and there is no FDA-licensed test or standardized protocols for PCR testing available. PCR testing requires collection of a NP specimen by nasal wash or use of Dacron swab.
 - **Direct fluorescent antibody (DFA):** DFA testing is no longer recommended.
 - **Serology:** There are no FDA-licensed serology tests or standardized cutoff points available.
- **Treatment:** Macrolides (azithromycin, erythromycin, and clarithromycin) are the drugs of choice for pertussis. Both suspect and confirmed cases should be treated if within 21 days of onset. Treatment, unless given in the catarrhal stage, does not usually affect the course of the illness but is still recommended to limit transmission to others. For dosages, see: <http://ochealthinfo.com/epi/pertussis.htm>. Trimethoprim-sulfamethoxazole is an alternative for some patients.
- **Prevention:** Universal vaccination against pertussis is recommended using DTaP in children <7 years of age and Tdap for adolescents and adults. Tdap is especially important for adolescents and adults who have contact with young infants. See <http://www.cdc.gov/vaccines/>. Household and close contacts of a suspect or a confirmed case of pertussis should receive preventive treatment if within 21 days of the last exposure. See <http://ochealthinfo.com/epi/pertussis.htm>.
- **Reporting:** Pertussis, including clinical and laboratory confirmed pertussis, is reportable to Orange County Epidemiology (phone 714-834-8180 or fax 714-834-8196) within one working day.
- **For more information:** AAP Red Book and http://www.cdc.gov/ncidod/dbmd/diseaseinfo/pertussis_t.htm.

Number of reported pertussis cases, by year, California, 1878-2007



For comments or suggestions on this newsletter, please contact Dr. Michele Cheung at (714) 834-8180. To receive this newsletter by email, please contact us at epi@ochca.com.