



Clinical Update

For Telephone Triage Nurses

July - August 2012

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Pertussis (Whooping Cough)

Trends and Outbreaks

Pertussis, also known as whooping cough, is a highly contagious respiratory infection caused by the bacterium *Bordetella pertussis*. Pertussis cases are reported by state health departments to the Centers for Disease Control and Prevention (CDC) through the National Notifiable Diseases Surveillance System (NNDSS).

- In 2010, 27,550 cases of pertussis in the U.S. were reported to the CDC. However, the true incidence of pertussis is unknown. The CDC believes that much of the disease goes unrecognized.
- The overall incidence of reported pertussis in the U.S. has been increasing steadily since 2007.
- Localized outbreaks of pertussis commonly occur throughout the year and periodic epidemics occur every 3 to 5 years. Pertussis has no distinct seasonal pattern.
- Outbreaks can also occur in day care settings, schools, work places, and health care facilities.



Two of the largest outbreaks in the U.S. today are occurring in the state of Wisconsin and Washington. As of June 2, 2012, each of these states reported approximately 2000 provisional pertussis cases (CDC, MMWR).



Approximately 17,000 cases of pertussis have been reported nation-wide during the first 6 months of 2012 (CDC, MMWR).

Hello Triage Nurse Colleagues:

For those of you who work in or take calls from the states of Wisconsin or Washington, you know that there are Whooping Cough epidemics going on in these areas. Many other states have also seen an upsurge of cases. This issue of *Clinical Update* provides information on this topic.

Regards,
David and Bart

According to the CDC, several factors have likely contributed to the increase in reported cases in recent years. Factors include:

- Increased awareness and recognition of pertussis among health care providers
- Increased access to and use of laboratory tests
- Improved surveillance and reporting of pertussis
- Waning immunity from vaccines over time

Complications

- The most important goal of pertussis prevention and outbreak control efforts is to decrease morbidity (amount of disease) and mortality (death) among infants.
- More than 50% of infants younger than 12 months who get pertussis are hospitalized.
- The risk of life-threatening complications is highest in infants less than 3 months old.



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- Approximately 1 in 100 infants who require hospitalization die from complications of pertussis infection.
- Serious complications include pneumonia, seizures, pulmonary hypertension, encephalopathy, and dehydration.

Whooping Cough - Symptoms - Three Phases (or Periods)

- **Catarrhal period (1-2 weeks):** Symptoms include runny nose, and a dry cough. Symptoms during this period are identical to a viral upper respiratory infection (cold). Fever is absent or minimal.
- **Paroxysmal period (2-6 weeks):** During this period the cough worsens. Coughing spells occur that may end in a high-pitched, deep inspiration that sounds like a "whoop". This whooping sound is more common in children than adults. Vomiting sometimes occurs because of the severe cough. Some infants can develop apnea (stop breathing) or breathing difficulty.
- **Convalescent period (more than 2 weeks):** The symptoms gradually decrease and resolve.

Whooping Cough - Antibiotic Treatment

Treatment with antibiotics eradicates the organism from respiratory secretions, and if started early (within 1-2 weeks), may reduce the symptoms. However, if started late in the course, antibiotics will not help. The following antibiotics have been recommended for the treatment of whooping cough:

- Azithromycin (Zithromax)
- Clarithromycin (Biaxin)
- Erythromycin
- Trimethoprim-sulfamethoxazole (Bactrim)

Whooping Cough - Prevention

- **DTaP Vaccination of Children:** Immunization to prevent pertussis begins in infancy. The DTaP vaccine (diphtheria, tetanus, pertussis) is given at intervals during childhood according to an immunization schedule recommended by the Centers for Disease Control and Prevention.
- **Tdap Vaccination of Adolescents:** Tdap should be routinely given as a single dose for those 11 through 18 years of age. Ideally, it should be given between 11 and 12 years of age.
- **Tdap Vaccination of Adults:** Adults 19 years and older should get a Tdap if they have never received this immunization. It can replace one of the Td (tetanus, diphtheria) booster immunizations that are recommended every 10 years.
- **Postexposure Prophylaxis with Antibiotics:** Postexposure prophylaxis with antibiotics can help prevent whooping cough. The general indication is: provide antibiotics to close contacts of patients with known whooping cough, when exposure has occurred within the past 21 days. The same antibiotics for prevention are the same as the ones used for treating the disease.

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