Pertussis

**Pertussis Symptoms and Clinical Case Definition**

Pertussis, or whooping cough, is a highly contagious respiratory infection caused by the bacterium *Bordetella pertussis*. Although adults usually have less severe symptoms, pertussis can cause severe coughing spells in infants and young children. Infants <6 months of age, and infants who have not received three doses of diphtheria and tetanus toxoid and acellular pertussis vaccine are particularly vulnerable; most hospitalizations occur among these individuals.

**Clinical case definition:** A cough illness lasting at least 2 weeks with one of the following: paroxysms of coughing, inspiratory “whoop”, or post-tussive vomiting, and without other apparent cause (as reported by a health care professional).

**Epidemiology**

In 2004, the number of confirmed and probable pertussis cases increased dramatically in the United States and Chicago. A total of 132 cases were reported in 2004, which represented a greater than four-fold increase from the annual average number of reported cases in Chicago during recent years (28.4 during 1995-2003). The Centers of Disease Control and Prevention attribute this increase to increased circulation of *Bordetella pertussis*, waning vaccine-induced immunity among adults and adolescents, heightened awareness of pertussis among health care providers, increased public health reporting, and increased use of polymerase chain reaction (PCR) testing for diagnosis.

In Chicago, the proportion of adolescent and adult cases rose from 8% of total cases during 1995-2003 to 44% in 2004. This shift, which was also seen nationally, along with the increase in circulation of *Bordetella pertussis*, prompted the development of a tetanus toxoid, reduced diphtheria toxoid and acellular pertussis vaccine (Tdap) for adolescents and adults.

**Tdap Vaccine Recommendations**

In 2005, Tdap was approved for use in adults and adolescents aged 11-64 years.

**Tdap Recommendations for Health Care Workers**

The Advisory Committee on Immunization Practices, supported by the Healthcare Infection Control Practices Advisory Committee, made the following recommendation for health care personnel:

Health care personnel who work in hospitals or ambulatory care settings and have direct patient contact should receive a single dose of Tdap as soon as feasible if they have not previously received Tdap. An interval as short as 2 years from the last dose ofTd is recommended; shorter intervals may be used.
Routine Tdap Recommendations for Adolescents and Adults

1. Adolescents aged 11-18 years should receive a single dose of Tdap instead of Td for booster immunization against tetanus, diphtheria, and pertussis if they have not received Td or Tdap. For those adolescents who have received a Td, a 5 year interval between Td and Tdap is encouraged. However, intervals <5 years can be used.

2. Adults 19-64 years of age should receive a single dose of Tdap to replace a single dose of Td if they received their last dose of Td >10 years earlier. Shorter intervals can be used in settings with increased risk for pertussis or its complications.

Laboratory Testing for Pertussis

Whenever possible, a nasopharyngeal swab or aspirate should be obtained to perform the following tests on individuals suspected of having pertussis:

1. **Culture.** Isolation of the organism by culture is most successful when specimens are taken during the first 1-2 weeks of cough, and prior to antimicrobial therapy.

2. **PCR.** PCR testing can provide rapid results; however, data from recent outbreaks suggest that false positives do occur. Therefore, it is helpful, whenever possible, to confirm PCR results with culture, and to also take clinical symptoms into account.

***Free pertussis test kits can be acquired by calling the IDPH Immunization Surveillance staff at (217) 785-1455. Specimens being sent to the IDPH laboratory for analysis should be sent overnight on dry ice.

Treatment for Pertussis

The following regimens are recommended for antibiotic therapy:

- Erythromycin 1 to 2 g per day for adults in 4 divided doses for 14 days **OR**
- Azithromycin 500 mg for the first dose and 250 mg for 4 additional days **OR**
- Clarithromycin 1 g per day divided in 2 doses for 7 days

For persons who are unable to take the medications listed above, the following can be used:

- Trimethoprim-sulfamethoxazole 320 mg/day trimethoprim and 1600 mg/day sulfamethoxazole in two divided doses for 14 days

Reporting Cases to CDPH

All suspect cases of pertussis should be reported to the Immunization Program. Report cases by calling Alicia Siston at (312) 746-5901, or by faxing reports to (312) 746-6388.

References and Additional Information


