State of Alaska Epidemiology **Bulletin**

Department of Health and Social Services
Karleen Jackson, Commissioner

Division of Public Health
Richard Mandsager, MD, Director

Section of Epidemiology
Beth Funk, MD, MPH, Editor

3601 C Street, Suite 540, PO Box 240249, Anchorage, Alaska 99524-0249 (907) 269-8000
24-Hour Emergency Number 1-800-478-0084
http://www.epi.Alaska.gov

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Pertussis Identified Across Alaska
Updated Pertussis Treatment and Prophylaxis Guidelines

Since January 1, the Section of Epidemiology has identified 46 cases of pertussis, including 18 cases confirmed by polymerase chain reaction (PCR), from the following areas of the state: Kenai Peninsula (28), Anchorage (10), Wasilla (2), Delta Junction (4); Fairbanks (1), and Klawock (1). This compares with 11 cases for the same time period in 2004. Of the 46 cases, 23 (50%) were adults.

Clinical Presentation

Pertussis is a highly communicable bacterial infection characterized by initial cold-like symptoms and a cough progressing to a paroxysmal cough, often with gagging or post-tussive vomiting. Infants and young children often develop an inspiratory whoop at the end of a cough paroxysm**.** Pertussis is transmitted person-to-person by direct or droplet contact with nasopharyngeal secretions of an infected person.

Pertussis is most severe when it occurs during the first year of life. With the recent recognition of pertussis activity in several areas of Alaska, it is critical for providers to make sure that their pediatric clients are up to date on vaccinations (DTaP).

Pertussis in Adults

Although generally considered a childhood disease, persons of any age can get pertussis. Immunity following the DTaP booster at age 4-5 years steadily wanes leaving virtually all adolescents and adults susceptible to pertussis. Symptoms vary in severity from mild, atypical respiratory illness to the classic pertussis symptoms. Many cases occur in previously immunized persons. Unrecognized disease among children and adults often leads to outbreaks of pertussis. In addition, the development of PCR technology for pertussis testing has increased identification of cases.

Laboratory Testing

Information about specimen collection and submission can be found in a previous Epidemiology *Bulletin*.[1]

Specimens should be collected for:

a. Individuals who have a cough of at least 2 weeks with one of the following: paroxysms of coughing, inspiratory "whoop" or post-tussive vomiting, without other apparent cause of illness, or

b. Contacts of laboratory-confirmed cases who have symptoms consistent with pertussis and who could spread the disease into a different setting e.g., another household, childcare facility, or classroom.

When a single laboratory-confirmed case of pertussis is identified in a household, childcare facility, or a similar setting, additional laboratory testing is not needed. Additional cases may be identified by clinical symptoms alone.

Recommendations

1. Report all cases of pertussis to the Section of Epidemiology by calling 907-269-8000 or through the Rapid Telephonic Reporting system at 1-800-478-1700 (statewide) or 561-4234 (Anchorage).
2. Insure that children are age-appropriately immunized with a pertussis-containing vaccine (DTP/DTaP), starting at 2 months of age.
3. Consider the diagnosis of pertussis for all age groups, including adults, who present with a prolonged cough illness.
4. Prevent additional transmission using antibiotic prophylaxis of contacts to persons with pertussis. The macrolides listed below are now all considered first line drugs (Table 1). The Section of Epidemiology will assist in identifying contacts and arranging for prophylaxis.

References

1. Epidemiology *Bulletin*. State Public Health Lab Launches PCR Testing for Pertussis. No. 18, July 14, 2005. (http://www.epi.alaska.gov/bulletins/docs/b2005_18.pdf)
2. Centers for Disease Control and Prevention. Guidelines for the Control of Pertussis Outbreaks. Centers for Disease Control and Prevention: Atlanta, GA, 2000, updated January 2005. (http://www.cdc.gov/nip/publications/guide.htm)

Table 1. Updated oral macrolide treatment and chemoprophylaxis for pertussis by age group[2]

Age group	Erythromycin (14-day course)	Clarithromycin (7-day course)	Azithromycin (5-day course)
≥6 months	40-50 mg/kg/day in 4 divided doses (maximum 2 gm/day) X 14 days.	15 mg/kg/day in 2 divided doses (maximum 500mg/dose) X 7 days.	10 mg/kg/day (maximum 500mg) in single dose on day 1 then 5mg/kg/day on Days 2 –5.
1-5 months	As above (estolate preparation preferred if available).	As above.	10mg/kg/day in single daily dose X 5 days.
<1 month	As above (Use as alternate drug in doses above. Drug use is associated with elevated risk of IHPS).	Not recommended (Safety data unavailable).	Preferred drug. 10mg/kg/day in a single daily dose X 5 days. Limited safety information.

TMP-SMZ may be used as an alternative agent in patients who are allergic to macrolides, who cannot tolerate macrolides, or who are infected, rarely, with a macrolide-resistant strain of *Bordetella pertussis*.
The recommended dose in children is trimethoprim 8 mg/kg/day, sulfamethoxazole 40 mg/kg/day in two divided doses for 14 days. For adults, the recommended dose is trimethoprim 320 mg/day, sulfamethoxazole 1600 mg/day in two divided doses for 14 days. Because of the risk of kernicterus, TMP-SMZ should not be given to pregnant women, nursing mothers, premature neonates, or infants <2 months of age.

(Submitted by Ann Marie Bailey, RN, MS and Sue Anne Jenkerson, RNC, MSN, FNC, Section of Epidemiology.)