# Alaska Public Health Advisory

## Pertussis Outbreak — Washington State, 2012

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Washington State is experiencing a large outbreak of pertussis (whooping cough) this year. As of March 31, 2012, there were 640 cases of pertussis reported, compared to 94 cases reported during this time period in 2011 — an almost 600% increase. Infants have experienced the highest rate of disease. Because Washington is our closest neighboring state and so much travel occurs between our states, the Alaska Section of Epidemiology (SOE) is distributing this health advisory to alert health care providers and the general public of this situation. In order to prevent the outbreak from spreading to Alaska, all Alaskans should make sure that they and their children are up-to-date with their pertussis vaccination, as this is the best way to prevent contracting and spreading this serious disease. Children who are too young for vaccination are at the highest risk for severe disease and death, and vaccinating adults and adolescents helps to protect this vulnerable population. While the vaccine is not 100% effective, it is very safe, and no alternative therapies have proven to be effective in preventing pertussis. As of March 31, 2012, there have been 14 cases of pertussis reported in Alaska (12 cases were reported during this time period in 2011).

*Pertussis is a reportable disease in Alaska. To report by phone, please contact SOE. The main SOE phone number is (907) 269-8000, or outside of Anchorage, (800) 478-0084.*

**Vaccination recommendations**

Healthcare providers should verify their patients' immunization status and provide age-appropriate vaccination against pertussis as needed.

- Infants should be vaccinated with diphtheria, tetanus, and acellular pertussis (DTaP) vaccine at 2, 4, and 6 months (minimum age: 6 weeks). The fourth dose may be administered as early as age 12 months provided at least 6 months have elapsed since the third dose. The fifth and final dose in the childhood series should be administered at age 4–6 years.
- Children aged 7–10 years who are not fully immunized against pertussis (i.e., did not complete a series of pertussis-containing vaccine before their seventh birthday) should receive a one-time dose of Tdap (combined tetanus, diphtheria and acellular pertussis vaccines).
- Adolescents should receive a one-time dose of Tdap (instead of tetanus and diphtheria [Td] vaccine) at their 11–12 year-old visit. Adolescents who have not received a dose of Tdap, or for whom vaccine status is unknown, should be immunized as soon as possible.
- Adults <65 years who have not received a dose of Tdap, or for whom vaccine status is unknown, should be immunized as soon as possible.

- Adults aged ≥65 years who have not previously received a dose of Tdap, and who have or anticipate having close contact with children younger than age 12 months, *should* receive a one-time dose to protect infants.
- Other adults aged ≥65 years who are not in contact with an infant, and who have not previously received a dose of Tdap, *may* receive a single dose of Tdap.
- All health care workers, regardless of their age, should receive a single dose of Tdap as soon as feasible if they have not previously received Tdap and regardless of the time since the last dose of Td.

**Signs and symptoms**

Pertussis is highly contagious, with an incubation period up to 21 days. It is caused by the bacterium *Bordetella pertussis*. Initial clinical signs include nasal discharge, which progresses to a cough that can become paroxysmal. Paroxysms consist of a series of violent coughs followed by a characteristic crowing or high-pitched inspiratory whoop, often ending with the expulsion of clear, thick mucus or vomiting. Coughing can persist for weeks to months. Patients with pertussis are usually afebrile. Adults or infants <6 months often do not exhibit the characteristic whoop or cough paroxysms. In infants and young children, especially those who have not yet completed vaccination, pertussis may be very severe, resulting in hospitalization, seizures, pneumonia, and death.

**Testing**

Laboratory testing for pertussis involves bacterial culture and PCR. Collect two nasopharyngeal samples; place one swab in a plain dry tube (Copan, yellow top) and the second in Regan-Lowe Transport Media.

Alaska State Public Health Laboratory (ASPHL) performs these tests; the laboratory requisition form is available at: http://www.hss.state.ak.us/dph/labs/publications/image/AncSupplyReq.pdf. Call ASPHL at (907) 334-2100 for more information.

**Treatment and prophylaxis**

The table below details treatment recommendations from the U.S. Centers for Disease Control and Prevention (CDC). Azithromycin and clarithromycin are as effective as erythromycin for treatment of pertussis, and are associated with fewer side effects. CDC recommends trimethoprim-sulfamethoxazole (TMP-SMZ) as an alternative antibiotic; however, TMP-SMZ is not recommended for children aged <2 months and should not be given to pregnant women at term, or nursing mothers.

Confer with SOE to provide chemoprophylaxis to infants and persons with contact to infants who were exposed to confirmed or suspected cases of pertussis. Close contacts aged <7 years who have not received four DTaP doses or have not received a DTaP dose within 3 years should be given a dose as soon after exposure as possible.

**Table. The U.S. Centers for Disease Control and Prevention Recommended Antimicrobial Treatment and Postexposure Prophylaxis for Pertussis, by Age Group**

| | Primary agents | | | Alternate agent* |
|---|---|---|---|---|
| Age group | Azithromycin | Erythromycin | Clarithromycin | TMP-SMZ |
| <1 month | Recommended agent. 10 mg/kg per day in a single dose for 5 days (only limited safety data available.) | Not preferred. Erythromycin is associated with infantile hypertrophic pyloric stenosis. Use if azithromycin is unavailable; 40–50 mg/kg per day in 4 divided doses for 14 days | Not recommended (safety data unavailable) | Contraindicated for infants aged <2 months (risk for kernicterus) |
| 1–5 months | 10 mg/kg per day in a single dose for 5 days | 40–50 mg/kg per day in 4 divided doses for 14 days | 15 mg/kg per day in 2 divided doses for 7 days | Contraindicated at age <2 months. For infants aged ≥2 months, TMP 8 mg/kg per day, SMZ 40 mg/kg per day in 2 divided doses for 14 days |
| Infants (aged ≥6 months) and children | 10 mg/kg in a single dose on day 1 then 5 mg/kg per day (maximum: 500 mg) on days 2–5 | 40–50 mg/kg per day (maximum: 2 g per day) in 4 divided doses for 14 days | 15 mg/kg per day in 2 divided doses (maximum: 1 g per day) for 7 days | TMP 8 mg/kg per day, SMZ 40 mg/kg per day in 2 divided doses for 14 days |
| Adults | 500 mg in a single dose on day 1 then 250 mg per day on days 2–5 | 2 g per day in 4 divided doses for 14 days | 1 g per day in 2 divided doses for 7 days | TMP 320 mg per day, SMZ 1,600 mg per day in 2 divided doses for 14 days |

* Trimethoprim sulfamethoxazole (TMP–SMZ) can be used as an alternative agent to macrolides in patients aged ≥2 months who are allergic to macrolides, who cannot tolerate macrolides, or who are infected with a rare macrolide-resistant strain of *Bordetella pertussis*.

***Please share this advisory with others you know who have questions about how to protect themselves and their families against pertussis.***

**Additional resources**

Weekly pertussis update for Washington State 2012 year to date (YTD), cases reported through the week ending 3/31/2012:
http://www.doh.wa.gov/cfh/Immunize/documents/pertupdate.pdf:
Alaska Division of Public Health Laboratory Services Manual
http://www.hss.state.ak.us/dph/labs/publications/image/Lab_Svcs_Manual.pdf
Alaska Epidemiology Bulletin: New Pertussis Chemoprophylaxis Recommendations for Alaska: http://www.epi.alaska.gov/bulletins/docs/b2010_29.pdf
Alaska Epidemiology Bulletin: Recommended Immunization Schedule for Children Aged 0–6 Years — Alaska, 2011: http://www.epi.alaska.gov/bulletins/docs/b2011_13.pdf
Alaska Epidemiology Bulletin: Expanded Use of State-Supplied Tetanus/Diphtheria/acellular Pertussis (Tdap) and Meningococcal Conjugate (MCV4) Vaccines: http://www.epi.alaska.gov/bulletins/docs/b2011_12.pdf
Centers for Disease Control and Prevention Pertussis information: http://www.cdc.gov/vaccines/vpd-vac/pertussis/default.htm