

# *epi*TRENDS

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## Pertussis Vaccination Update

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Since late 2011, pertussis reports have increased markedly in Washington State. If recent trends continue through the year, Washington will have the highest number of cases in decades. Infants younger than one year are most at risk for complications from pertussis and also have the highest infection rates. Sadly, four infants died in Washington during 2010-2011 due to pertussis, and dozens of infants were hospitalized.

There are likely several reasons for the current increase in cases. In the United States pertussis is endemic with periodic epidemics every 3 to 4 years. Immunity to pertussis from either natural infection or vaccination wanes with time; around adolescence even fully immunized children become susceptible to the disease again. Finally, Washington State has the highest kindergarten vaccine exemption rate in the country.

The main public health goal related to pertussis is to prevent severe disease and death in infants, the most vulnerable population. Though no vaccine offers 100% immunity, persons up to date on pertussis vaccines (e.g., DTaP, Tdap) are less likely to become infected and therefore less likely infect an infant. According to 2010 data from the National Immunization Survey, about 71% of Washington teens have received a Tdap vaccination. Adult pertussis vaccination rates are very low. Nationally Tdap vaccination rates in 2010 were only 8% for adults and 20% for health care workers. Older children, adolescents, and adults are now the biggest reservoir for disease. We need to do better.

There have been several new ACIP recommendations for pertussis vaccines in the past 2 years (see Table). All children through 6 years of age should receive their DTaP vaccinations on schedule, unless contraindicated. Five doses of DTaP are recommended by age 6 years (4 doses are acceptable if the final dose is given on or after the 4<sup>th</sup> birthday). For children ages 7-10 not fully up to date, a single Tdap should replace one tetanus-diphthera (DT) dose. Adolescents ages 11-18 who have never received Tdap should be vaccinated, ideally at age 11-12 years. When seeing any child not up to date on vaccines, providers should refer to the [ACIP catch up vaccination schedule](http://www.cdc.gov/vaccines/recs/schedules/downloads/child/catchup-schedule-pr.pdf) to identify recommended vaccines (<http://www.cdc.gov/vaccines/recs/schedules/downloads/child/catchup-schedule-pr.pdf>).

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Child with broken blood vessels in eyes and bruising on face due to pertussis coughing



Female infant with Pertussis

Source: Centers for Disease Control and Prevention

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Adults over age 18 years not previously vaccinated should receive a single dose of Tdap. Any person who cares for infants younger than 12 months should receive Tdap once, including family members, babysitters, caregivers or health care providers. Those 65 years or older, such as grandparents, should receive a single dose of Tdap if likely to have contact with infants younger than 12 months. Tdap is also acceptable for any adult 65 years or older who desires to receive the vaccine, even if not providing care for infants.

Pregnant women who have not previously received a Tdap dose should be vaccinated after 20 weeks gestation, ideally early in the third trimester, in order to maximize immunity for mother and baby near the time of delivery. If not given before or during pregnancy, Tdap can be given postpartum before discharge; however, postpartum vaccine administration leaves both mother and infant susceptible to pertussis during the most vulnerable first weeks of an infant's life. Fathers, siblings, and other household members of babies should be up to date on their pertussis vaccines too. Parents can encourage those around them to be vaccinated in order to create a "community of immunity" for the new baby. Also, anyone who is sick or coughing should stay away from infants and new parents should protect their babies from those who are sick.

All health care providers having direct patient contact should receive Tdap vaccine in order to limit possible transmission in the healthcare setting. Tdap is especially imperative for healthcare personnel having contact with infants younger than 12 months or with pregnant women.

Pertussis is a potentially severe vaccine-preventable disease. Improving community immunity to pertussis through vaccination will help prevent severe disease and deaths in infants.

**Table. Pertussis Vaccine Recommendations by Age\***

<b>Age group</b>	<b>Pertussis Vaccine Recommendation</b>
<b>Birth - 6 years</b>	<ul style="list-style-type: none"> <li>•DTaP routinely recommended at 2, 4, and 6 months, at 15 through 18 months, and at 4 through 6 years of age.</li> </ul>
<b>7 - 10 years</b>	<ul style="list-style-type: none"> <li>•For those not fully vaccinated, follow the ACIP catch-up schedule, with Tdap preferred as the first dose.</li> </ul>
<b>11 - 18 years</b>	<ul style="list-style-type: none"> <li>•If not fully vaccinated as a child, refer to the ACIP catch-up schedule for recommended vaccines.</li> <li>•Tdap routinely recommended as a single dose with preferred administration at 11- 12 years of age.</li> <li>•If no Tdap at 11 to 12 years of age, Tdap recommended at the next routine patient encounter, or sooner if close contact with infants.</li> </ul>
<b>19 - 64 years</b>	<ul style="list-style-type: none"> <li>•Tdap recommended to replace the next 10-year Td booster for any adult who has not received a dose.</li> <li>•Tdap can be administered regardless of interval since the previous Td dose, especially if adult has close contact with infants.</li> </ul>
<b>≥65 years</b>	<ul style="list-style-type: none"> <li>•Tdap recommended for those who have not previously received a dose and who have close contact with infants under age 12 months.</li> <li>•Others not in contact with an infant with no previous dose of Tdap may receive a single dose of Tdap in place of Td.</li> </ul>
<b>Pregnant women and close contacts of infants</b>	<ul style="list-style-type: none"> <li>•Tdap recommended after 20 weeks gestation for those who have not previously received a dose (or if vaccination status is unknown).</li> <li>•Tdap recommended in the immediate postpartum period before discharge if not vaccinated prior to or during pregnancy.</li> <li>•DTaP or Tdap (depending on age) recommended for all family members and caregivers if not up to date – given at least two weeks before coming into close contact with the infant.</li> </ul>
<b>Health care personnel</b>	<ul style="list-style-type: none"> <li>•Tdap recommended for those who have not previously received a dose and who have direct patient contact.</li> <li>•Tdap is essential for those who have direct contact with infants under age 12 months.</li> </ul>

\* Information in Table is based on [2012 ACIP recommendations](http://www.cdc.gov/vaccines/recs/schedules/default.htm) (<http://www.cdc.gov/vaccines/recs/schedules/default.htm>).