

**Communicable Disease Epidemiology
and Immunization Section**

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**Health Alert: Pertussis in King County
January 10, 2012**

Action Requested:

- **Be aware of an increase in pertussis reports, particularly among infants**
- **Fully immunize all children against pertussis, and provide a single dose of Tdap as recommended by national guidelines to:**
 - **Children 7-10 years who are not fully vaccinated against pertussis**
 - **Adolescents 11-18 years who have completed the DTP/DTaP series**
 - **Pregnant and post-partum women***
 - **All adults aged 19-64 years**
 - **Adults aged 65 years and older who have or anticipate having close contact with infants less than 12 months old**
- **Prioritize vaccinating household members and other close contacts of infants**
- **Consider the diagnosis of pertussis in the following situations, even if the patient has been immunized against pertussis:**
 - **Respiratory symptoms of any duration in infants <12 months, even if there is clinical or laboratory evidence of RSV infection (because co-infection has been documented)**
 - **Cough illness > 2 weeks duration in patients of any age**
 - **Respiratory illness of any duration in patients of any age who have had contact with persons with prolonged cough illness, or a confirmed pertussis case**
- **For suspected pertussis cases, obtain a nasopharyngeal specimen for pertussis polymerase chain reaction (PCR), which is more specific and rapid than culture**
- **Report pertussis cases within 24 hours to Public Health at (206) 296-4774**

Background

Reports of confirmed pertussis cases in King County have increased dramatically in the past month. Of the 97 cases reported in 2011, nearly a quarter were reported in December. Among the infants reported in 2011, 70% were most likely infected by a household member. Since December 1st, 28 confirmed cases have been reported, with nearly 1/3 in infants. Among the infants reported in December who had parents who could be interviewed, all had more than one household member who was eligible for Tdap but was unvaccinated against pertussis.

*This year, the Advisory Committee on Immunization Practices (ACIP) recommended that pregnant women who have not already received a Tdap booster should be vaccinated during pregnancy, preferably during the third trimester or late second trimester (after 20 weeks gestation). If not vaccinated during pregnancy, unvaccinated women should be vaccinated in the immediate post-partum period before discharge. Other adult and adolescent household members and close contacts of infants should also be vaccinated before or during the pregnancy to protect them and the newborn against pertussis.

Resources: Pertussis resources for clinicians and patients including an issue brief on the prevention of pertussis in infants and a patient flyer on pertussis and pregnancy (available in Spanish, Russian, Chinese, Amharic, Ukrainian, Vietnamese, and Somali) are available at: www.kingcounty.gov/healthservices/health/communicable/diseases/whoopingcough.aspx

Issue Brief – Prevention of Pertussis in Infants, January 2012

Pertussis disease is increasing in King County and Washington State posing a serious health risk to infants. The risk of severe pertussis, including hospitalization and death, is higher for infants than any other age group, and two infant deaths occurred in Washington during 2011. King County pertussis cases increased significantly in 2011 compared to 2010 (97 and 59, respectively), with infants younger than one year comprising 16% of the 97 reported cases. In 2011, 20% of infant cases required hospitalization and infant cases continue to occur in 2012.

Infants younger than 6 months account for 90% of all pertussis-related deaths and the majority of hospitalizations.¹ Susceptible adolescents and adults, in whom the disease is under-diagnosed, serve as a reservoir for transmission to infants.

- The most likely source of infection for 69% of King County infant pertussis cases in 2011 was a household member. Other studies have shown household members are responsible for 75%–83% of pertussis transmission to infants. Parents represented more than half of the source cases; mothers were the source in more than one-third.^{2,3,4}
- Pertussis can also lead to substantial morbidity in adults and adolescents among whom it causes 13–20% of cases of cough illnesses lasting longer than 2–3 weeks.⁵

Vaccination of adults and adolescents in close contact with young infants may eliminate a substantial proportion of infant pertussis; it is estimated that 35–55% of infant cases could be prevented by vaccinating parents against pertussis.⁶

- Despite this, the Tdap coverage rate among adults 18–64 years in the U.S. for 2008 was under 6%, and it was only 15% for healthcare workers.⁷

Preventing Pertussis in Infants

- **NEW in 2011: The Advisory Committee on Immunization Practices (ACIP) recommended that *pregnant women who have not already received a Tdap booster should be vaccinated during pregnancy, preferably during the third trimester or late second trimester (after 20 weeks gestation)*⁸. If not vaccinated during pregnancy, unvaccinated women should be vaccinated in the immediate post-partum period before discharge.**
- Other adult and adolescent household members and close contacts of infants should also be vaccinated before or during the pregnancy to protect them and the newborn against pertussis.

ACIP also recommends that the following groups receive Tdap as soon as feasible, ideally at least 2 weeks before beginning close contact with the infant⁸:

- Adults >65 years who have or anticipate contact with infants age <1 year (e.g., grandparents, child care providers, healthcare providers), *regardless of the interval since the last Td.*
- Adults and adolescents 11 years and older who have not received a prior dose of Tdap or for whom pertussis vaccination history is unknown, *regardless of the interval since the last Td.*
- Children 7–10 years who are unvaccinated or have not received a complete DTaP primary series.

Pregnant women due for tetanus booster

- If a tetanus and diphtheria booster vaccination is indicated during pregnancy for a woman who has previously not received Tdap (i.e., more than 10 years since previous Td), then health care providers should administer Tdap during pregnancy, preferably during the third or late second trimester (after 20 weeks gestation).

Pregnant women with unknown or incomplete tetanus vaccination

- To ensure protection against maternal and neonatal tetanus, pregnant women who never have been vaccinated against tetanus should receive three vaccinations containing tetanus and reduced diphtheria toxoids during pregnancy. The recommended schedule is 0, 4 weeks, and 6 to 12 months. Tdap should replace 1 dose of Td, preferably during the third or late second trimester of pregnancy (after 20 weeks gestation).

Pertussis Testing and Reporting

Pertussis should be suspected in the differential diagnosis of:

- Respiratory tract symptoms of any duration in infants <12 months, even if they have been immunized against pertussis or test positive for RSV (respiratory syncytial virus) because co-infections have been documented
- Cough illness >2 weeks duration in patients of any age, even if they have been immunized against pertussis
- Respiratory illness of any duration in patients of any age who have had contact with persons with a prolonged cough illness, or a confirmed pertussis case

If you suspect pertussis, a nasopharyngeal specimen for pertussis polymerase chain reaction (PCR) is the preferred test because it is more specific and more rapid than culture. Pertussis cases are reportable to Public Health at (206) 296-4774.

- PCR testing is available through the King County Public Health Laboratory (206-744-8950) and at many commercial reference labs.

REFERENCES

1. Tanaka M. Trends in Pertussis among Infants in the United States, 1980-1999. *JAMA*. 2003;290:2968.
2. Wendelboe AM, Njamkepo E, Bourillon A, et al. Transmission of bordetella pertussis to young infants. *Pediatric Infectious Disease Journal*. 2007;26:293-299.
3. Bisgard KM, Pascual FB, Ehresmann KR, et al. Infant pertussis: who was the source? *Pediatric Infectious Disease Journal*. 2004;23:985-989.
4. Gerbie MV, Tan TQ. Pertussis disease in new mothers: effect on young infants and strategies for prevention. *Obstetrics & Gynecology*. 2009;113 (2 Pt 1):399-401.
5. Cherry JD. Epidemiological, clinical, and laboratory aspects of pertussis in adults. *Clin Infect Dis*. 1999 Jun;28 Suppl 2:S112-7.
6. CDC. Prevention of Pertussis, Tetanus, and Diphtheria Among Pregnant and Postpartum Women and Their Infants *MMWR* May 30, 2008 / 57 (04);1-47,51.
7. CDC. Tetanus and pertussis vaccination coverage among adults aged ≥18 years -- United States, 1999 and 2008. *MMWR* October 15, 2010 / 59(40);1302-1306.
8. CDC. Advisory Committee on Immunization Practices (<http://www.cdc.gov/vaccines/recs/default.htm>).

Pregnant?

Protect Yourself and Your Baby from Pertussis

Pertussis (“whooping cough”): A serious disease for babies

- Recent outbreaks of pertussis in Washington and nationally have caused hospitalizations and deaths in young infants.
- Infants younger than one year are at high risk for hospitalizations and deaths from pertussis; infants 2 months and younger are at the highest risk.
- Pertussis is a disease that spreads easily by coughing and sneezing.
- In infants, pertussis can cause pneumonia, seizures, brain damage, and death. It can cause coughing spells in older children and adults, but *babies* with pertussis often cannot cough, have problems feeding, and may stop breathing and turn blue.



Get the pertussis (Tdap) booster during pregnancy to protect yourself and your newborn

- **The Centers for Disease Control and Prevention and the American College of Obstetrics and Gynecology recommend that pregnant women who have not already received a Tdap booster be vaccinated during their third trimester (or after 20 weeks).**
- Tdap vaccine is safe during pregnancy. If you receive Tdap during pregnancy, you and your newborn are more likely to be protected from pertussis at the time you deliver.
- Infection fighting antibodies that you get from the vaccine are passed on to your baby for additional protection.
- If you did not get the Tdap booster before or during your pregnancy, it is also safe to get the vaccine right after you deliver your baby and if you are breastfeeding.

You, your family, and your baby’s caregivers need a pertussis booster

- Three out of four babies with pertussis get it from their parents, other family members, or caregivers who have the disease but might not know it.
- Infants cannot get their first dose of pertussis vaccine (DTaP) until they are at least six weeks old. Until your baby has had at least three doses of DTaP by age 6 months, (s)he will have little protection.
- The best way to protect your newborn against pertussis before (s)he has gotten at least three doses of DTaP is to make sure that you and everyone else who will have close contact with your baby is up-to-date on their pertussis vaccinations, including the adolescent/adult pertussis booster (**Tdap**).

Talk with your doctor, nurse, or clinic

- Ask your doctor or nurse to give you the pertussis booster during your pregnancy, if you haven’t already received it. If your doctor, nurse, or clinic does not offer the vaccine, check local pharmacies.
- For added protection, ask your doctor or nurse to vaccinate your family members before the baby is born.



For more information about pertussis:

- <http://www.kingcounty.gov/healthservices/health/communicable/diseases/whoopingcough.aspx>
- <http://doh.wa.gov/cfh/immunize/diseases/pertussis/default.htm>
- <http://www.cdc.gov/features/pertussis/>
- **Public Health – Seattle & King County, 206-296-4774**

Alternate formats available
TTY Relay: 711
206-296-4774 (Voice)

Public Health
Seattle & King County 

Pertussis (Whooping Cough)

WHAT IS IT?

- ✓ Pertussis (also called “whooping cough”) is a highly contagious bacterial infection that causes a severe cough.

SYMPTOMS

- ✓ Symptoms appear 6 to 21 (average 7-10) days after exposure to an infected person.
- ✓ Pertussis may start with cold symptoms or a dry cough followed by episodes of severe coughing. Gagging or vomiting may occur after severe coughing spells. Cough may be worse at night. The person may look and feel healthy between coughing episodes. Fever is absent or mild.
- ✓ Immunized school children, adolescents, and adults often have milder illness than young children.
- ✓ Infants with pertussis may not develop a severe cough. They may only have a mild cough, decreased feeding, and may have difficulty breathing or turn bluish.

HOW IS IT SPREAD?

- ✓ Pertussis is spread through droplets from the mouth and nose when a person with pertussis coughs, sneezes, or talks.
- ✓ Untreated, persons with pertussis can spread the infection for several weeks.
- ✓ Adults, older children, and healthcare workers with unrecognized pertussis can spread the infection to others, including young children and pregnant women.

WHO GETS IT?

- ✓ Anyone who is exposed to the bacteria can get pertussis.
- ✓ Pertussis vaccine prevents severe disease in young infants, but even a vaccinated person can get pertussis.
- ✓ Pertussis occurs in older children and adults because protection from the vaccine (DTP or DTaP) is not 100% and decreases over time.

WHO IS AT GREATEST RISK?

- ✓ Infants less than one year old have the **highest** risk of severe pertussis, including hospitalization, pneumonia, convulsions, and rarely, brain damage or death.
- ✓ Unimmunized or partly immunized children are also at higher risk for pertussis infection and severe disease.
- ✓ Pregnant women with pertussis near the time of delivery may spread it to their newborns.

TREATMENT

- ✓ Early in the disease, an antibiotic active against pertussis can help decrease transmission to others.
- ✓ Persons treated with antibiotics are no longer contagious after the first 5 days of appropriate antibiotic treatment have been completed.

PREVENTION

- ✓ Pertussis vaccine is included in DTaP and the Tdap vaccine for adolescents and adults.
 - Before age 7, children should get 5 doses of the DTaP vaccine.
 - Tdap should be given as a single booster dose to 11-64 year old individuals and to individuals 65 and over if they anticipate having close contact with infants less than 12 months of age
 - Tdap can be given during pregnancy, preferably in the third or late second trimester. If not given during pregnancy it should be given right after the baby is born.
- ✓ Persons with cough illnesses should avoid contact with infants and expectant mothers, including visiting or working in labor, delivery, and nursery areas of hospitals and in child care settings.
- ✓ If you live with or have close contact with someone who has pertussis, antibiotics may be needed to prevent pertussis – contact your health care provider.

Report all King County cases to
Public Health by calling (206) 296-4774.

Available in alternate formats.