

**Communicable Disease Epidemiology
and Immunization Section**

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www.kingcounty.gov/health

Health Advisory: Pertussis Outbreak Clinical Diagnosis and Treatment Guidelines, April 25, 2012

Action requested: Review the following information on diagnosis and management of suspected pertussis cases. Included are our revised guidelines for clinical diagnosis and treatment of suspected pertussis cases and specific settings in which pertussis testing should be prioritized. Treatment regimens, infection control, vaccination and reporting requirements are unchanged. Report pertussis cases within 24 hours by calling 206-296-4774.

Background: Pertussis activity continues to increase in King County and statewide. This guidance is intended primarily for the outbreak period when the probability of pertussis in persons with a cough illness is increased, and is intended to address several issues: 1) the desire to identify suspected pertussis cases earlier in the course of illness to improve outcomes and minimize transmission to high risk persons through prompt treatment and post-exposure prophylaxis (PEP) of close contacts; 2) the increasing volume of pertussis cases resulting in an increased burden and cost of pertussis lab testing; 3) to provide guidance to clinicians who desire to treat suspected pertussis patients based on clinical diagnosis without laboratory testing.

We continue to recommend testing pertussis cases using PCR and/or culture. PCR is preferred because it is more rapid and sensitive compared to culture, but is also more expensive and less specific. When pertussis testing of all suspected cases is not possible (e.g., due to limited availability of laboratory resources or cost considerations) **prioritize testing of infants, pregnant women, and their close contacts**. Lower priority should be given to low-risk patients presenting late in the course of illness, when both PCR and culture are less sensitive.

Clinical Diagnosis and Treatment for Infants < 12 Months

Strongly consider pertussis for:

- Persistent or worsening cough with no or low-grade fever in an infant ≤ 3 months or in an older infant without other explanation.
- Persistent or paroxysmal cough with no or low-grade fever and any of the following: apnea, cyanosis, post-tussive vomiting, seizure, pneumonia, non-purulent coryza, unexplained apnea spells, inspiratory whoop.

Recommended actions when pertussis is suspected:

- **Test all infants with suspected pertussis using PCR.**
- Consider obtaining a CBC: leukocytosis with lymphocytosis ($WBC \geq 20,000/mm^3$ with $\geq 10,000$ lymphocytes/ mm^3) in any young infant with a cough illness is a strong indication of *B. pertussis* infection.
- Consider hospital admission for infants ≤ 3 months with suspected pertussis.
- **Begin antimicrobial treatment** if within 6 weeks of cough onset – do not wait for test results. Negative results do not rule out pertussis if clinically suspected; see treatment recommendations, below.
- **Exclude** from public settings (including child care, contact with other children, etc.) until 5 days of antibiotic treatment completed. Cases who do not take appropriate antimicrobial treatment should be excluded from childcare, school, and health care setting for 21 days from onset of paroxysmal cough.
- **Administer PEP to household members and high risk close contacts:** infants, pregnant women, healthcare workers (HCW), or those who have close contact with infants or pregnant women.

Clinical Diagnosis and Treatment for Children ≥ 12 months and Adults

Suspect pertussis for:

- Cough ≥ 7 days in persons with no or low-grade fever and any of the following: paroxysms, post-tussive vomiting, inspiratory whoop
- Cough ≥ 14 days with no or low-grade fever and no alternative diagnosis
- Cough of any duration with no alternative diagnosis and any of the following:
 - Close contact with a pertussis case **or** with a person with prolonged cough illness.
 - Patient is a pregnant women in the 3rd trimester
 - Patient is a close contact of infants or pregnant women

Recommended actions if pertussis is suspected:

- **Test using PCR.** Testing is not necessary for patients who are close contacts of a lab-confirmed pertussis case.

Clinical Diagnosis and Treatment for Older Children and Adults - Recommended actions, continued

- **Begin antimicrobial treatment if within 3 weeks of cough onset** based on clinical diagnosis if lab testing is not done. Consider treating pregnant women in the 3rd trimester within 6 weeks of cough onset. Negative results do not rule out pertussis if clinically suspected; see treatment recommendations, below.
- **Exclude** from public settings (work, school, child care, contact with infants and pregnant women, etc) until 5 days of antibiotic treatment completed. Cases who do not take appropriate antimicrobial treatment should be excluded from childcare, school, and health care setting for 21 days from onset of paroxysmal cough.
- **Administer PEP** regardless of whether testing was performed to household members and high risk close contacts: infants, pregnant women, HCW, or those who have close contact with infants or pregnant women.

Treatment and Prophylaxis

From CDC recommendations: Azithromycin (5 day regimen), clarithromycin and erythromycin are preferred for the treatment of pertussis in persons ≥ 1 month of age. For infants < 1 month of age, azithromycin is preferred for post exposure prophylaxis and treatment because azithromycin has not been associated with infantile hypertrophic pyloric stenosis (IHPS), whereas erythromycin has. For infants < 1 month of age, the risk of developing severe pertussis and life-threatening complications outweighs the potential risk of IHPS that has been associated with macrolide use. Infants < 1 month of age who receive a macrolide should be monitored for the development of IHPS and for other serious adverse events. For persons ≥ 2 months of age, an alternative to macrolides is trimethoprim-sulfamethoxazole. For complete recommendations regarding antibiotic treatment of pertussis see http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5414a1.htm?s_cid=rr5414a1_e

Infection Control and PPE

- Health care workers should use droplet and standard precautions: including a surgical or procedure mask and eye protection when evaluating potential/suspected and confirmed pertussis patients. Droplet precautions should be maintained until 5 days after the patient is placed on effective therapy. CDC/HICPAC guidance, Precautions to Prevent Transmission of Infectious Agents, is available at http://www.cdc.gov/hicpac/2007IP/2007ip_part3.html
- Assure respiratory etiquette measures are in place at clinics and healthcare facilities. Information on respiratory etiquette in healthcare settings is available at <http://www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm>

Optimize Pertussis Vaccination:

Immunize all children against pertussis and provide a one-time dose of Tdap (if not already done) 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 ≥ 19 years, especially those with, or anticipating, close contact with an infant or pregnant women
- Healthcare personnel

*In 2011, 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

- For complete pertussis **vaccine recommendations**, see, <http://www.cdc.gov/vaccines/vpd-vac/pertussis/default.htm#recs>
- For pertussis **reporting requirements, specimen collection/testing** and other resources for clinicians and patients, see: <http://www.kingcounty.gov/healthservices/health/communicable/diseases/whoopingcough.aspx>
- **CDC pertussis info for clinicians**, see <http://www.cdc.gov/pertussis/>
- **Pertussis in young infants**, http://www.aap-ca.org/clinical/pertussis/pertussis_in_young_infants.html

END

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Summary of pertussis outbreak clinical diagnosis and treatment guidelines, April 25, 2012

[See corresponding Health Advisory - Pertussis Outbreak Clinical Diagnosis and Treatment Guidelines, April 25, 2012 (available at <http://www.kingcounty.gov/healthservices/health/communicable/providers.aspx>)]

	Infants < 12 months	All other children and adults
Clinical context	<p>Strongly consider pertussis if:</p> <ul style="list-style-type: none"> • Persistent or worsening cough with no or low-grade fever in an infant \leq 3 months, or in an older infant without other explanation. • Persistent or paroxysmal cough with no or low-grade fever and any of the following: apnea, cyanosis, post-tussive vomiting, seizure, pneumonia, non-purulent coryza, unexplained apnea spells, inspiratory whoop. 	<p>Suspect pertussis if:</p> <ul style="list-style-type: none"> • Cough \geq 7 days in persons with no or low-grade fever and any of the following: paroxysms, post-tussive vomiting, inspiratory whoop • Cough \geq 14 days with no or low-grade fever and no alternative diagnosis • Cough of any duration with no alternative diagnosis and any of the following: <ul style="list-style-type: none"> • Close contact with a pertussis case or with a person with prolonged cough illness. • Pregnant women in the 3rd trimester • Close contact with infants or pregnant women
Testing for suspected cases (negative results do not rule out pertussis if clinically suspected)*.	<ul style="list-style-type: none"> • PCR preferred 	<ul style="list-style-type: none"> • PCR preferred • Not necessary if close contact of a laboratory-confirmed case
Antimicrobial treatment	<ul style="list-style-type: none"> • Begin if within 6 weeks of cough onset 	<ul style="list-style-type: none"> • Begin if within 3 weeks of cough onset • If pregnant in 3rd trimester, begin if within 6 weeks of cough onset
Exclusion	<ul style="list-style-type: none"> • Minimize public exposure and exclude from childcare, school, and health care settings until <u>5 days</u> of appropriate antimicrobial treatment completed. • Cases who do not take appropriate antimicrobial treatment should be excluded from childcare, school, and health care settings for 21 days from onset of paroxysmal cough. 	
Postexposure prophylaxis	<ul style="list-style-type: none"> • Administer to household members and high risk close contacts: infants, pregnant women, healthcare workers, or those who have close contact with infants or pregnant women. 	

* When pertussis testing of all suspected cases is not possible (e.g., due to limited availability of laboratory resources or cost considerations) **prioritize testing of infants, pregnant women, and their close contacts.**