



Public Health  
Division

# County of Santa Cruz

## HEALTH SERVICES AGENCY

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### PUBLIC HEALTH ADVISORY

<b>To:</b>	<b>All Healthcare Providers in Santa Cruz County</b>
<b>From:</b>	<b>Arnold S. Leff, MD, REHS, County Public Health Officer</b>
<b>Subject:</b>	<b>Local Increase in Pertussis (Whooping Cough) Cases</b>
<b>Date:</b>	<b>October 22, 2018</b>

**Current Situation:** Pertussis epidemics are cyclic in nature, with peaks in disease every 3 to 5 years. The last pertussis epidemic in California occurred in 2014. In 2010, a statewide epidemic resulted in 10 deaths and more than 800 hospitalizations in more than 9,000 cases.

Since September 1st, the Santa Cruz County Public Health Division has received 16 reports of new pertussis cases, including several cases associated with outbreaks at two local schools. The largest outbreak, at an elementary school in Aptos, includes 8 confirmed pertussis cases across kindergarten through 5<sup>th</sup> grade classes, with 55% of the kindergartners becoming cases. Unvaccinated students account for 75% of the confirmed cases at the school. The Communicable Disease Unit is managing the outbreaks and assisting the schools in infection control through exposure notices to parents, exclusion of symptomatic students and staff, and recommendations to seek medical evaluation and treatment should symptoms occur.

Due to the recent events, Santa Cruz County Public Health officials recommend that local medical providers consider pertussis in any individual presenting with a progressive cough illness lasting longer than one week, particularly if post-tussive vomiting and/or paroxysmal coughing occurs. Be aware that early symptoms may resemble a common cold and that vaccinated individuals may present with milder symptoms.

**Background:** Pertussis (whooping cough) is an acute bacterial infection of the respiratory tract caused by *Bordetella pertussis*. Clinical presentation can vary, particularly in infants < 1 year of age and previously vaccinated people:

- **Catarrhal stage:** The initial catarrhal stage (1-2 weeks) presents with non-specific, cold-like symptoms of fatigue, runny nose, sneezing, and mild cough. Fever is typically absent or minimal.
- **Paroxysmal stage:** Spasms of severe coughing fits occur followed by a sudden deep inspiration (causing the “whooping” sound). Adults and adolescents typically don’t make this sound. Post-tussive vomiting is common in all ages. Illness is often milder in vaccinated individuals (e.g. post-tussive vomiting may not occur).
- **Convalescent stage:** The coughing symptoms slowly resolve, often lasting 6-10 weeks.
- **Infants < 1 year old:** Infants may have a shorter catarrhal stage, and they may not experience a noticeable cough or “whoop”. Instead, infants may gag, gasp, or become apneic, and their facial color may turn blue, purple, or red. Infants are more likely to experience severe complications, such as pneumonia, seizures, and death.

Pertussis is highly contagious. Transmission typically occurs when a susceptible person inhales aerosolized droplets from the respiratory tract of an infected person. The incubation period is typically 7-10 days. Infected cases  $\geq$  1 year of age are considered infectious from the onset of cold-like symptoms until after 5 days of antibiotic treatment or until 21 days after cough onset if no (or partial) treatment is given. Infected people are most contagious up to about 2 weeks after cough begins. Antibiotics may shorten the amount of time someone is contagious. Infants < 1 year of age are considered infectious for 6 weeks without treatment.

## Recommendations:

- **Diagnosis:**
  - Have a high index of suspicion and a low threshold for testing and evaluating individuals for pertussis, especially if a patient's close contacts have been recently sick with a respiratory illness. **Be aware of the varying clinical presentation of pertussis.** Suspect pertussis in the following situations, even if the person has been vaccinated:
    - Persistent or worsening cough, with no fever or a 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 may be accompanied by gagging, post-tussive vomiting, or inspiratory whoop in patients of any age
    - Cough illness  $>$ 1 week duration and no alternative diagnosis
    - Cold-like symptoms in a patient who has been a close contact with a known pertussis case
  - **Test for pertussis:** The preferred methods for the laboratory diagnosis of pertussis are culture and polymerase chain reaction (PCR). Culture is the gold standard, but after 2 weeks of cough, PCR is the preferred test. Testing is appropriate until at least three weeks after onset of paroxysmal coughing. After three weeks of coughing, infectiousness and test accuracy decreases. Refer to California Department of Public Health's (CDPH) "Pertussis: Laboratory Testing" for additional diagnostic information.
- **Treatment: Start treatment immediately if pertussis is suspected;** do not wait for a laboratory confirmation. Negative results do not rule out pertussis. Prophylactic antibiotic treatment is recommended in all household contacts of a case, regardless of age or vaccination status. This recommendation is particularly important in households with infants  $<$  1 year of age who are most at risk for severe disease.
- **Infection Prevention:** The most effective strategy to protect infants who are most at risk for severe pertussis disease is to vaccinate all pregnant women during each pregnancy, preferably between 27 and 36 weeks of gestation. It is also important to vaccinate all children with the DTaP series on time and give a Tdap dose to adolescents and adults. Although most children have been vaccinated for pertussis, protection from the vaccine wanes over time, so some who are fully vaccinated may still become infected, though symptoms are often milder. During pertussis outbreaks infants may begin the pertussis vaccination series at 6 weeks old. In addition to vaccination, rapid identification of pertussis cases, appropriate treatment, isolation, and educating patients about good respiratory etiquette helps prevent ongoing transmission.
- **Reporting: Report suspected and confirmed pertussis cases promptly** to the Communicable Disease Unit (call 831-454-4114) or fax Confidential Morbidity Report forms to 831-454-5099. The Public Health Division relies on providers to report cases in a timely manner to support infection prevention and control measures.

## Additional Information:

Confidential Morbidity Report (CMR): <http://www.santacruzhealth.org/Portals/7/Pdfs/PH%20Reporting/cdph110a.pdf>

CDPH Pertussis Information: <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Immunization/pertussis.aspx>

CDPH Pertussis Lab Testing:

<https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/Immunization/PertussisLabTesting.pdf>

**Health Alert:** conveys the highest level of importance; warrants immediate action or attention.

**Health Advisory:** provides important information for a specific incident or situation; may not require immediate action.

**Health Update:** provides updated information regarding an incident or situation; unlikely to require immediate action.

