



# STATE OF CONNECTICUT

## DEPARTMENT OF PUBLIC HEALTH

**PLEASE COPY THIS FOR ALL HEALTH CARE PROVIDERS**

**IN YOUR PRACTICE**

**TO:** Primary Care Staff, Infectious Disease, Obstetrics, Emergency Medicine, Internal Medicine, Pediatrics, Family Medicine, Laboratory Medicine, and Infection Control Personnel

**FROM:** Lynn Sosa, MD *Lynn Sosa* **Kathy Kudish, DVM, MSPH**  
Deputy State Epidemiologist Epidemiologist, Immunization Program

**DATE:** September 7, 2010

**SUBJECT:** Pertussis (Whooping Cough) Health Advisory

*Kathy Kudish*

As of the end of August 2010, Connecticut Department of Public Health (DPH) has received reports of 63 cases of pertussis, a two-fold increase from the same period last year when 29 cases were reported. Most of the increase has been seen in the Litchfield County area, where 34 cases have been reported this year, primarily during July and August. See Figure 1 for more information on reported Litchfield County pertussis cases. Statewide, nine of the cases have been in infants less than one year of age; no deaths have been reported.

Pertussis is cyclical. The number of pertussis cases in the United States tends to peak every two to five years; the previous peak in Connecticut occurred in 2006 when 42 cases had been reported by August of that year. The Department of Public Health is encouraging health care providers in the community to consider pertussis illness when evaluating any patient with an acute cough illness characterized by prolonged cough or cough with paroxysms, whoop, or post-tussive gagging/vomiting without other apparent cause. Providers should use the following criteria for identifying potential pertussis cases:

### **Clinical Signs and Symptoms**

**Patients who present with a history of cough illness lasting 14 or more days and exhibit one or more of the following symptoms:**

- a. paroxysms of cough and / or
- b. inspiratory whoop and / or
- c. post-tussive vomiting

Patients who present with these symptoms should be immediately cultured for pertussis (see laboratory testing and diagnosis, below).

### **Exposure Recommendations and Antibiotic Treatment**

Patients with suspected pertussis and exposed susceptible contacts should receive either erythromycin or trimethoprim-sulfamethoxazole for 14 days, azithromycin for 5 days, or clarithromycin for 7 days (see *2005 CDC Guidelines: Recommended antimicrobial agents for treatment and post-exposure prophylaxis of pertussis*. (MMWR 54:RR-14, 2005; may be accessed at <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5414a1.htm>). Exposure may be described as direct contact with respiratory secretions from the case (i.e. an explosive cough or

sneeze in the face, sharing food, sharing eating utensils during a meal, kissing, or conducting a full medical exam including examination of the nose and throat).

Administration of post-exposure prophylaxis to asymptomatic household contacts within 21 days of onset of cough in the index patient is generally recommended and can prevent symptomatic infection. The decision to administer post-exposure chemoprophylaxis is made after considering the infectiousness of the patient and the intensity of the exposure, the potential consequences of severe pertussis in the contact, and possibilities for secondary exposure of persons at high risk from the contact (e.g., infants aged <12 months, persons who have an immunodeficiency condition, or persons who have other underlying severe disease such as chronic lung disease or cystic fibrosis). For post-exposure prophylaxis, the benefits of administering an antimicrobial agent to reduce the risk for pertussis and its complications should be weighed against the potential adverse effects of the drug. Chemoprophylaxis in contacts who were exposed to a pertussis patient more than three weeks prior has limited benefit, except in high risk contacts.

### **Recommendations for Vaccination**

Although the DTP or DTaP vaccines (diphtheria, tetanus, pertussis) usually provide adequate protection against pertussis for young children, the effects of these vaccines wear off over time, leaving most teens and adults at risk of the disease. The Advisory Committee on Immunization Practices (ACIP) recommends that persons aged 11–64 years receive a single dose of Tdap to replace tetanus and diphtheria toxoids vaccine (Td) for booster immunization against tetanus, diphtheria, and pertussis (<https://www.cdc.gov/vaccines/vpd/dtap-tdap-td/public/index.html>).

The preferred age for routine Tdap vaccination is 11–12 years. A single dose of Tdap is preferred to Td in persons who require tetanus toxoid-containing vaccine as part of wound management.

Infants aged <12 months are at highest risk for pertussis-related complications and hospitalizations compared with older age groups; young infants have the highest risk for death from pertussis. Pertussis vaccination begins at two months of age, but young infants are not adequately protected until the initial series of three shots is complete at 6 months of age.

**People who will have close contact with infants should receive the Tdap vaccine. Health-care providers may choose to administer Tdap during pregnancy to add protection against pertussis in special situations, such as to pregnant women living in a community in which a pertussis outbreak is occurring.** If a provider chooses to wait to administer Tdap until pregnancy is completed, the vaccine should be given in the immediate postpartum period prior to hospital discharge. Fathers may receive Tdap vaccine at any time, but preferably before the birth of their baby. For more information on postpartum Tdap, visit

[http://www.cdc.gov/mmwr/preview/mmwrhtml/rr57e0514a1.htm?s\\_cid=rr57e0514a1\\_e](http://www.cdc.gov/mmwr/preview/mmwrhtml/rr57e0514a1.htm?s_cid=rr57e0514a1_e).

CT DPH encourages birthing hospitals to implement policies to vaccinate new mothers and fathers before sending newborns home. CT DPH is providing Tdap vaccine free of charge to hospitals enrolled in the state-sponsored Tdap cocoon program.

### **Laboratory Testing and Diagnosis**

#### ***Culture***

Culture is the "gold standard" for laboratory confirmation and should be collected prior to the initiation of antibiotic treatment, ideally within the first two weeks of cough onset. Because patients can remain culture-positive even while taking effective antibiotics (e.g., infection with strains that are resistant to the antibiotic), nasopharyngeal (NP) swab for culture should be obtained regardless of concurrent use of an antibiotic. All suspected cases of pertussis should have a NP aspirate or swab obtained for culture from the posterior nasopharynx (throat and

anterior nasal swabs have unacceptably low rates of recovery of *B. pertussis*). **Specimen collection kits for *B. pertussis* may be obtained by calling the DPH Laboratory at (860) 509-8501.** A *Microbiology Testing Services* requisition form must be completed for each specimen submitted to the DPH laboratory and can be downloaded from CT DPH website: [http://www.ct.gov/dph/lib/dph/laboratory/labhome/pdf/ol-9b\\_form\\_4.10.pdf](http://www.ct.gov/dph/lib/dph/laboratory/labhome/pdf/ol-9b_form_4.10.pdf).

### **Polymerase Chain Reaction (PCR)**

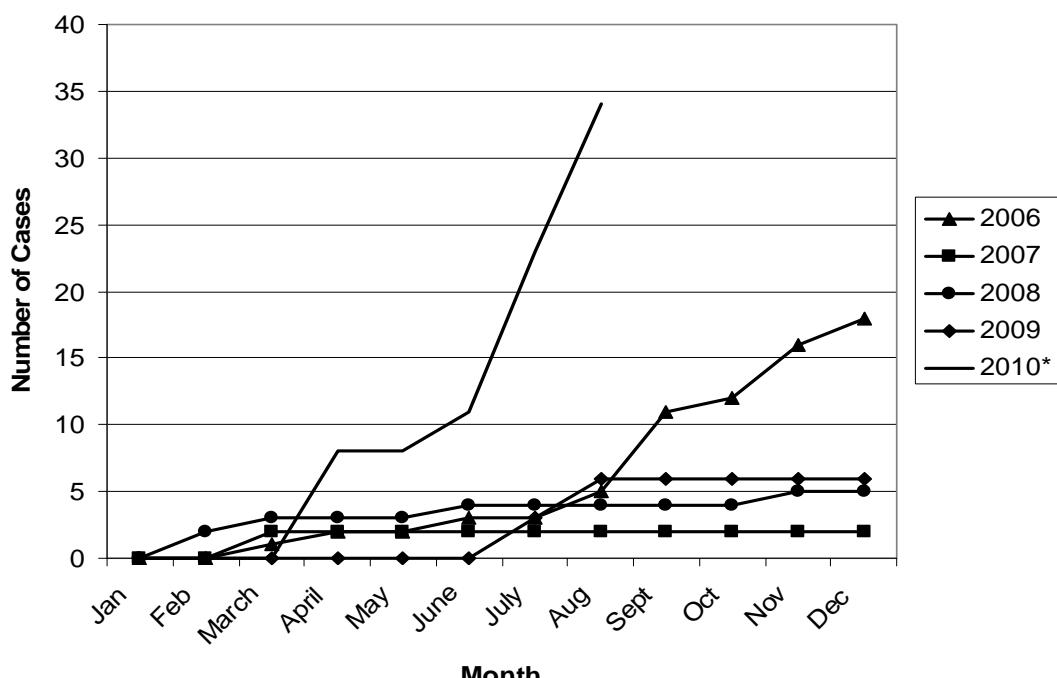
Numerous studies have demonstrated the potential for PCR assays to detect *Bordetella* cells with greater sensitivity and more rapidly than culture. However, no specific technique for PCR is universally accepted or validated among laboratories and the correlation between PCR results and disease is not well established. There is no quality assurance program for PCR. The Centers for Disease Control and Prevention (CDC) recommends that PCR be used alongside culture, rather than as an alternative test. The use of PCR without attempting culture negatively impacts monitoring for continued presence of the agent among cases of disease, recruitment of isolates for epidemiologic studies, and surveillance for antibiotic resistance. Direct comparison with culture is necessary for validation of PCR tests performed in different laboratories.

For more information on laboratory testing for pertussis, visit <http://www.cdc.gov/vaccines/pubs/surv-manual/chpt10-pertussis.htm#7>.

### **Reporting**

Suspected pertussis cases should be reported immediately to the Connecticut Immunization Program at 860-509-7929. Tentative diagnoses should be made based on clinical presentation. Please do not wait for culture results before notifying the State Immunization Program. Your cooperation will expedite preventive measures. DPH reports suspected cases to the local health department after we have collected information from the reporting physician and have tried to make contact with the case-patient or parent of the case patient. Information on the state-sponsored Tdap cocoon program may also be obtained by calling the Immunization Program.

**Figure 1. Cumulative Number of Pertussis Cases by Month Reported—Litchfield County, Connecticut, 2002–2010\***



\* Cases reported to DPH as of 8/30/2010