

April 27, 2012

To: Adult Providers, OBGYNs, Emergency and Primary Care Departments, and Local Health Departments

From: New York State Department of Health, Bureau of Immunization

HEALTH ADVISORY: PERTUSSIS ON THE RISE IN 2012; ADULTS A MAJOR SOURCE OF INFECTION

Please distribute to the Infection Control Department, Emergency Department, Primary Care Clinic Directors, OBGYN Clinic Directors, Employee Health Service, Infectious Disease Department, Laboratory Services, and all patient care area.

SUMMARY MESSAGE

- **New York State (NYS) outside of New York City (NYC) has experienced a greater than three-fold increase in pertussis cases in the first quarter of 2012 as compared to 2011.** Many of these cases are among adults. Pertussis in adults is known to be significantly under-recognized and consequently under-diagnosed. Factors leading to under recognition of pertussis in adults include:
 - Atypical symptom presentation (lack of “whoop” or cough paroxysms)
 - Low index of suspicion among providers if a known contact has not been identified
 - Nonspecific clinical presentation (mimics many other respiratory infections)
 - The challenges of diagnostic testing (availability of test kits, specimen collection)
- Pertussis activity continues to increase in NYS. As of March 31, 2012, preliminary data for the first quarter of 2012 show 497 probable and confirmed cases in NYS outside of NYC. Final 2011 data indicate 153 cases in NYS during the first quarter of 2011, with 931 probable and confirmed cases by year end. Reports of disease continue to be received both sporadically and in outbreaks throughout NYS outside of NYC.
- NYS (outside of NYC) has experienced a greater than three-fold increase in the number of pertussis cases among infants less than one year of age. Mothers and fathers are often the primary source of pertussis among infants less than 12 months of age. Thus, it is extremely important to identify pertussis in parents to prevent transmission to vulnerable infants.
- The New York State Department of Health (NYSDOH) encourages all providers to be aware of the rates of circulating pertussis in their communities. In communities with increased cases of pertussis, providers should have an elevated index of suspicion for pertussis even when encountering adult patients, especially pregnant women and those adults who have contact with young children, with a prolonged cough who do not demonstrate any of the other “classic” pertussis symptoms.
- In 2012, the Advisory Committee on Immunization Practices (ACIP) approved a provisional recommendation stating that adults aged 65 years and older should receive a dose of tetanus toxoid, reduced diphtheria toxoid and acellular pertussis vaccine (Tdap), if no record of previous administration exists, regardless of age or interval since the last tetanus or diphtheria containing vaccine. With this updated recommendation, **all adults are now recommended to receive Tdap vaccine** if they have not previously received it.
- Tdap should be administered to all unvaccinated pregnant women, preferably after 20 weeks’ gestation, to help protect their newborns from pertussis.

BACKGROUND

Although hardly ever fatal, adults with pertussis can experience morbidity from this disease. Pneumonia has been reported in up to 5% of adults with pertussis. Other medical complications include rib fracture from paroxysmal coughing, syncope, urinary incontinence and pneumothorax. Hospitalization in adults with pertussis occurs in 3-12% of individuals. Further, as a result of ongoing cough and repeated medical evaluations, adults with pertussis are often forced to miss a significant amount of work which can lead to lost wages and underperformance.

Pertussis can cause serious and potentially life-threatening complications in infants and young children who are not fully vaccinated. Nationwide, 63% of infants < 12 months of age with pertussis are hospitalized. Research has shown that when a source for pertussis in young infants can be identified, it is most often found to be a household contact. One study found parents (most often mothers) were the source of transmission in over half of the observed cases of pertussis in young infants. Consequently, any delay in the diagnosis and treatment of an adult who has regular contact with a young infant can result in serious medical consequences for the infant.

The NYSDOH is asking all health care providers, when seeing patients with prolonged cough or clinically compatible illness without another known cause, to consider pertussis in adults, especially in pregnant women and those adults who have contact with young children. Providers should maintain a high index of suspicion for pertussis when increased levels of circulating disease are occurring in the community. Suspected cases should be immediately reported to the local health department (LHD) where the patient resides and appropriate infection control measures should be instituted. Reports should be made at the time of initial clinical suspicion. If the diagnosis of pertussis is being considered and diagnostic testing for pertussis is ordered, then the case should be reported at that time.

CLINICAL AND DIAGNOSTIC INFORMATION FOR ADULTS

Symptoms

Pertussis infection among adults covers a spectrum from mild cough illness to classic pertussis presenting with cough paroxysms, inspiratory “whoop” and post-tussive vomiting. Prolonged cough (often >3 weeks) is a common feature exhibited by the majority of adults with pertussis. Adults with pertussis may be clinically indistinguishable from those with other, more commonly encountered, respiratory illnesses. Given this wide spectrum of clinical presentation in adults, it is extremely important for providers to be aware of any ongoing pertussis outbreaks that may be occurring in their communities so they can more readily consider pertussis in their differential diagnosis when presented with an adult patient with cough of any duration without another known cause.

Diagnosis

Testing for pertussis is most reliable when performed early in the course of the illness and prior to the initiation of antibiotic treatment. Testing must be done on nasopharyngeal specimens obtained by using *Dacron*, NOT cotton swabs. A pharyngeal or throat swab is not acceptable for pertussis testing.

Acceptable diagnostic methods for pertussis include polymerase chain reaction (PCR) and culture. PCR testing of nasopharyngeal aspirates or swabs is a rapid, sensitive method for diagnosing pertussis. It is not a perfect test, and results should be interpreted in light of patient symptoms. It is available at approved laboratories throughout NYS as well as at NYSDOH’s Wadsworth Center.

Culture for *Bordetella pertussis* is performed on special media culture and its fastidious growth requirements make it hard to isolate, however it is important to submit specimens for culture to confirm the disease due to the variable specificity of PCR testing and potential for false positive PCR results.

Specimens obtained within three weeks of cough onset have a higher proportion of culture-positive results. Prior antibiotic treatment may interfere with culture growth.

Direct fluorescent antibody (DFA) and serology are not reliable testing methods. Neither is recommended for the diagnosis of pertussis.

If a provider's office is not yet equipped with the recommended pertussis testing kits, the LHD should be contacted immediately to obtain contact information for available local resources which offer pertussis testing.

TREATMENT AND PROPHYLAXIS OF ADULTS

Antibiotics given early in the disease may lessen its severity and decrease its communicability. Treatment after the third week of cough is of questionable benefit. Persons with pertussis are considered non-infectious after having completed 5 days of any of the appropriate antibiotics or if at least 21 days have elapsed since the onset of cough. The macrolide agents azithromycin, clarithromycin, and erythromycin are preferred for the treatment of pertussis in adults. Trimethoprim-sulfamethoxazole is an alternative agent to macrolides for treatment in adults.

CDC recommends administration of chemoprophylaxis to all close contacts and all household members of a pertussis case-patient, regardless of age and vaccination status. Prophylaxis with antibiotics may prevent or minimize transmission. The same antibiotic regimens described above for treatment are used for prophylaxis.

The NYSDOH would like to remind all providers that persons identified as being a pertussis contact by an LHD should immediately be prescribed an approved post exposure prophylaxis (PEP) antibiotic regimen in an effort to minimize pertussis transmission in the community. PEP should be initiated by the provider without delay. **Pertussis contacts receiving PEP are able to return to their normal activities (including work) immediately, if not symptomatic. These individuals should also receive a dose of Tdap if they have not already done so.**

VACCINE RECOMMENDATIONS FOR ADULTS

The best way to prevent pertussis among adults is to get vaccinated. In 2012, ACIP expanded the recommendations for the use of Tdap in adults. **Because immunity from childhood pertussis vaccination wanes over time, this booster dose shot for both adolescents and adults is essential.** Boosting reduces the risk of contracting pertussis, decreases the severity of the disease if contracted and helps prevent transmission to infants who are too young to be vaccinated. Another important way of protecting infants from pertussis is by administering a dose of Tdap to all unvaccinated pregnant women, preferably after 20 weeks' gestation. After extensive review of available studies, ACIP has concluded that Tdap given during pregnancy does not result in an increase in adverse events.

Providers should be aware that Tdap is not 100% effective and, as a result, adults who have received Tdap may still contract pertussis. It is for this reason that pertussis should be considered in all adults with compatible symptoms and/or epidemiologic links to a known cause.

Current ACIP recommendations for Tdap in adults:

- Adults, of any age, who have not already received Tdap should be administered a single dose of Tdap.
- **Tdap should be given regardless of interval since previous Td.**

The following adult groups should be prioritized for Tdap vaccination:

- Adults of any age, including adults age 65 years and older, in contact with infants younger than age 12 months (e.g., parents, grandparents, childcare providers) who have not received a dose of Tdap.
- Pregnant women, preferably after 20 weeks' gestation.
- Healthcare personnel of all ages.

COMPLETE INFORMATION ON THE CURRENT VACCINE RECOMMENDATIONS IS AVAILABLE AT THE WEBSITES BELOW:

- ACIP Provisional Recommendations for Adults Aged 65 Years and Older on Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine (Tdap) and Guidance on Use of Tdap Products for Adults Aged 65 Years and Older. ---Advisory Committee on Immunization Practices (ACIP), 2012. <http://www.cdc.gov/vaccines/recs/provisional/Tdap-feb2012.htm>.
- Updated Recommendations for the Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis (Tdap) in Pregnant Women and Persons Who Have or Anticipate Having Close Contact with an Infant Aged < 12 Months --- Advisory Committee on Immunization Practices (ACIP), 2011. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6041a4.htm?s_cid=mm6041a4_w
- CDC Adult Immunization Schedule: <http://www.cdc.gov/vaccines/recs/schedules/adult-schedule.htm>.

ADDITIONAL INFORMATION

Information on pertussis from the CDC: <http://www.cdc.gov/pertussis/index.html>
Best Practices for Health Care Professionals on the Use of PCR for diagnosing Pertussis: <http://www.cdc.gov/pertussis/clinical/diagnostic-testing/diagnosis-pcr-bestpractices.html>

NYS Outbreak Control Guidelines for Vaccine Preventable Disease: http://www.health.ny.gov/prevention/immunization/providers/outbreak_control_guidelines.htm

Current treatment information is available at:
Recommended Antimicrobial Agents for the Treatment and Postexposure Prophylaxis of Pertussis; 2005 CDC guidelines. MMWR 2005; 54 (No. RR-14). <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5414a1.htm>

For further information, please contact your local health department or your regional New York State Department of Health Bureau of Immunization representative at the following:

Western Regional Office

Buffalo: 716 – 847 – 4501
Rochester: 585 – 423 – 8014

Capital District Regional Office

Troy: 518 – 408 – 5278

Central New York Regional Office

Syracuse: 315 – 477 – 8164

Metropolitan Area Regional Office

New Rochelle: 914 – 654 – 7149
Central Islip: 631 – 851 – 3096
Monticello: 845 – 794 – 2045