



NEW YORK CITY DEPARTMENT OF
HEALTH AND MENTAL HYGIENE
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Commissioner

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ALERT #29: Pertussis in New York City

Pertussis cases in New York City have increased recently. Pertussis should be considered in persons with cough lasting more than 14 days accompanied by other suggestive symptoms. Clinicians should perform appropriate diagnostic testing, ensure children and adults are appropriately vaccinated, and report suspect cases to the Health Department.

Distribute to All Primary Care, Infectious Disease, Emergency Medicine, Internal Medicine, Pediatrics, Family Medicine, Laboratory and Infection Control Staff

Dear Colleagues:

The Department of Health and Mental Hygiene (DOHMH) has detected an increase in pertussis cases in New York City (NYC) since August 2011. From August through November 2011, 126 confirmed or probable pertussis cases have been identified compared to 45 cases for the same period in 2010. Cases have occurred across all ages: 26% of cases occurred in those < 1 year old, 18% in 1-4 year olds, 10% in 5-9 year olds, 18% in 10-19 year olds, and 27% in ≥ 20 year olds. Infants < 1 year old have the highest rate of disease, with children 1-4 years old having the second highest rate of disease when compared to older children and adults. Of all cases during this time, 34% have been hospitalized; 96% of children less than 6 months old have been hospitalized. No deaths have been reported. Cases have occurred in all boroughs, with a recent increase in Staten Island. Cases have occurred in multiple schools, but no single school is the source of the outbreak. Clusters of cases have occurred in families.

Outside of New York City, there has been an ongoing outbreak in Suffolk County, NY with over 200 cases since June 2011. Additional information about pertussis outbreaks is available from the Centers for Disease Control and Prevention at <http://cdc.gov/pertussis/outbreaks.html>.

Pertussis, or “whooping cough,” is a highly contagious bacterial infection that can cause serious illness in infants, children, and adults. The illness begins with nonspecific upper respiratory symptoms that last for 7-10 days, followed by onset of cough. The classic pertussis cough includes persistent paroxysms (coughing fits), an inspiratory “whoop”, apnea, and/or post-tussive vomiting. Cough may last weeks to months if not treated early. People with prior history of disease or vaccination may have milder symptoms and lack classic features of disease, making diagnosis more difficult. In infants, apnea can be a prominent feature. Infants are at highest risk for the most severe complications of pertussis, including pneumonia, encephalitis, and death. In adults, complications of pertussis include post-tussive syncope and rib fracture, in addition to persistent cough. Individuals are usually infectious for up to four weeks after cough onset; infants may be contagious for up to six weeks.

If pertussis is suspected based on clinical presentation or known exposure to a pertussis case, then clinicians should collect a nasopharyngeal (NP) swab and send it for polymerase chain reaction (PCR) testing. Several commercial laboratories have been approved by New York State to conduct *Bordetella pertussis* PCR, including Quest Diagnostics Nichols Institute, Focus Diagnostics, ARUP Laboratories, ViroMed Laboratories (LabCorp), Laboratory Alliance of Central New York LLC. Specimens are most likely to be positive when patients have a clinically compatible illness and specimens are collected within the first four weeks of cough onset and no later than five days after initiating antibiotics. An NP specimen can also be sent for *Bordetella pertussis* culture; though highly specific, culture is insensitive. DOHMH recommends pertussis PCR testing and does not recommend serologic or direct fluorescence antibody testing. More information about pertussis diagnostics can be found at www.cdc.gov/pertussis/clinical/downloads/diagnosis-pcr-bestpractices.pdf.

Antibiotic treatment can alleviate symptoms and reduce pertussis transmission. Physicians should prescribe either a macrolide or, for macrolide allergic patients, trimethoprim-sulfamethoxazole. If there is a strong suspicion of pertussis, treatment should be provided to infants who have been coughing less than six weeks and all others who have been coughing less than three weeks. Treatment after three weeks of cough is not thought to alter the duration of cough nor transmission to others and is not recommended. Treatment should also be provided to close contacts of confirmed pertussis cases as post-exposure prophylaxis (PEP) to prevent illness and transmission. If pertussis is strongly suspected, then PEP should begin while awaiting laboratory confirmation.

In healthcare facilities, healthcare personnel (HCP) should observe droplet precautions, such as wearing surgical masks, while evaluating suspect pertussis cases. Precautions should be observed regardless of the vaccination status of HCP. Guidance regarding infection control, vaccination, and outbreak control in healthcare facilities can be found at www.cdc.gov/mmwr/pdf/rr/rr6007.pdf. HCP with known unprotected exposure to pertussis and who are likely to expose pregnant women or neonates should receive PEP. Other HCP should either receive PEP or be monitored daily for 21 days after pertussis exposure and treated if pertussis symptoms develop.

Vaccination remains the best way to prevent pertussis. Children should be fully vaccinated against pertussis with the diphtheria-tetanus-acellular pertussis (DTaP) vaccine. A child should receive 5 doses of DTaP vaccine at 2, 4, and 6 months of age, a fourth dose between 15–18 months of age, and a fifth dose between 4–6 years of age. Coverage for children 19-35 months of age with 3 doses of DTaP is 92.7% (± 48) but drops off to 75.2% (± 7.5) for 4 doses, demonstrating a need to improve completion of the vaccination series on time (source: 2010 National Immunization Survey).

Since 2006, tetanus-diphtheria-acellular pertussis (Tdap) has been recommended for adolescents and adults up to age 65 years as a single booster dose for preventing pertussis. Adolescents attending 6th through 10th grades are required to receive a dose of Tdap vaccine for school entry. Because infants who have not yet completed the primary three-dose series of DTaP are at highest risk for severe complications of pertussis, it is important that family members, caregivers, and other close contacts of newborns receive the Tdap vaccine. Tdap should be administered regardless of when they received their last tetanus-diphtheria (Td) vaccine. Tdap is especially important for the following people:

- All healthcare personnel, regardless of whether they care for newborns or not
- Women who are pregnant, preferably after 20 weeks gestation

- Post-partum women who did not receive Tdap during pregnancy
- Adults 65 years and older who will be in close contact with anyone under 12 months old

Clinicians are legally required to report all suspected cases of pertussis to DOHMH. Clinicians should not wait until laboratory confirmation to report. Early reporting allows DOHMH to investigate cases and identify those who need post-exposure prophylaxis. Recognition of the increase in pertussis cases was hampered by reporting delays and inadequate diagnostic testing. To report a suspected case, clinicians should call DOHMH at 212-676-2288 during business hours or the Poison Control Center at 212-764-7667 after hours.

As always, your cooperation is appreciated.

Sincerely,

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