



STATE OF NEW HAMPSHIRE
DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF PUBLIC HEALTH SERVICES

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Message Type: Health Advisory

Status: Actual
Severity: Moderate
Sensitive: No
Jurisdiction: State

DATE: January 26, 2009

TO: Physicians, Hospital Emergency Departments, Infection Control Practitioners, New Hampshire Hospital Association, Community Health Centers, School Nurses, School Administrators, DHHS Outbreak Team and DPHS Management Team

FROM: José T. Montero, MD, Director

SUBJECT: Recommendations for the diagnosis, management and treatment of pertussis

New Hampshire Department of Health and Human Services (NH DHHS) recommends:

- Vigilance for pertussis diagnosis in patients with compatible clinical signs.
- Timely reporting of suspect and confirmed cases to the NH DHHS Communicable Disease Control and Surveillance Section at 603-271-4496 (after hours 1-800-852-3345 ext.5300)
- The use of both culture and PCR methods for the laboratory diagnosis of pertussis.
- Vaccination with Tdap for eligible adolescents and adults.

NH DHHS regularly receives reports of pertussis cases from around the State. The occurrence of pertussis is cyclic, often in 3-5 year cycles and activity in NH is currently lower than previous years. In 2008 there were 44 (3 per 100,000 persons) pertussis cases reported to NH DHHS compared to 79 (6 per 100,000 persons) in 2007 and 227 (17 cases per 100,000) in 2006. Given its cyclic occurrence, it is expected that pertussis activity will increase. Despite less frequent reports in 2007 and 2008, NH DHHS continues to receive reports of both individual cases and pertussis outbreaks.

Background:

Bordetella pertussis primarily infects the respiratory tract. The incubation period is commonly 7-10 days but can be as long as 21 days. Illness occurs in three stages:

- Catarrhal stage: runny nose, sneezing, low-grade fever, and occasional cough. Lasts 1-2 weeks.

- Paroxysmal stage: Characterized by bursts of numerous, rapid coughs, commonly followed by vomiting and exhaustion. In young children, paroxysms can be followed by an inspiratory high-pitched whoop. Lasts 1-6 weeks.
- Convalescent stage: gradual recovery with improvement in cough.

Pertussis is highly contagious and is transmitted by contact with or inhalation of respiratory droplets. People with pertussis are most infectious during the catarrhal stage and during the first two weeks after cough onset.

Because immunity to childhood pertussis vaccination wanes by adolescence, teens and adults are at risk for infection with pertussis. Children who are too young to be fully vaccinated and those who have not completed the primary vaccination series are at highest risk for severe illness. While pertussis may be mild in older persons, it can cause significant morbidity in adults and can be transmitted to other susceptible persons, including unimmunized and under-immunized infants. In these susceptible infants, infection with *B. pertussis* can lead to hypoxia, secondary bacterial pneumonia, and death.

Diagnosis:

Several types of testing are available for pertussis:

PCR, culture, and serology. The Centers for Disease Control and Prevention (CDC) and NH DHHS recommend that nasopharyngeal swabs are tested for pertussis by **both** polymerase chain reaction (PCR) and culture. PCR is prone to both false positive and false negative results. Performing culture allows for improved diagnostic capacity, determination of antibiotic sensitivity, and sub-typing of organisms.

NH DHHS is aware that some NH clinical laboratories only perform PCR testing (or send specimens to reference laboratories that only perform PCR testing), and no longer offer culture for the diagnosis of pertussis. If this is true of your facility, we recommend that you:

- Send specimens to the NH Public Health Laboratory (NH PHL), where both PCR and culture are performed (see below for information on obtaining sample kits and sending samples to NH PHL).

If you are evaluating a patient with only PCR results available, use the clinical case definition below to help inform interpretation of PCR results:

- **Clinical case definition:** Acute cough illness lasting at least two weeks with either paroxysms of coughing, inspiratory whoop, or post-tussive vomiting without other apparent cause.

Serology is not an accepted method of diagnosing pertussis. Serologic results cannot distinguish between recent infection, past infection, or past vaccination.

Vaccination:

Combined tetanus, diphtheria and acellular pertussis vaccine (Tdap) is a booster vaccination for pertussis. It is recommended for adolescents when they are due to receive tetanus and diphtheria toxoids vaccine (Td) as a replacement to Td. Also, those adolescents who have already received Td may also receive a single dose Tdap. See guidelines on link below for recommended time interval between Td and Tdap.

Tdap is also recommended for adults who are due to receive Td, and for those who have or who anticipate having close contact with an infant <12 months of age (e.g. parents, childcare providers, health-care providers).

Please refer to the link below for complete details regarding the ACIP recommendations for Tdap in adults:

www.cdc.gov/mmwr/PDF/rr/rr5517.pdf

ACIP recommendations for Tdap in adolescents:

http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5503a1.htm?s_cid=rr5503a1_e

Please refer to the recent MMWR publication for accepted antibiotic regimens for both treatment of and post-exposure prophylaxis for pertussis. Please note that the three-day azithromycin pack is not approved for treatment or post-exposure prophylaxis.

<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5414a1.htm>

The CDC's National Immunization Program website contains a comprehensive document regarding control of pertussis outbreaks, which includes detailed information about pertussis diagnosis and treatment.

<http://www.cdc.gov/nip/publications/pertussis/guide.htm>

NH DHHS Contact Information:

- To obtain specimen kits for pertussis or for information on sending specimens to the state lab, contact the NH Public Health Laboratories at 603-271-4661.
- For questions regarding use of Tdap, contact the NH Immunization Program at 603-271-4482.
- To report a suspect or confirmed case of pertussis, call the NH DHHS Communicable Disease Control and Surveillance Section at 603-271-4496, or toll-free at 800-852-3345, ext. 4496.

CATEGORIES OF HEALTH ALERT NETWORK (HAN) MESSAGES:

Message Type:

- 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 warrant immediate action
- Health Update: Provides updated information regarding an incident or situation
- Cancel: Prior communications alert has been canceled
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Status:

- Actual: Communication or alert refers to a live event
- Exercise: Designated recipients must respond to the communication or alert
- Test: Communication or alert is related to a technical, system test and should be disregarded

Severity:

- Extreme: Extraordinary threat to life or property
- Severe: Significant threat to life or property
- Moderate: Possible threat to life or property
- Minor: Minimal threat to life or property
- Unknown: Unknown threat to life or property

Sensitive:

- Yes: Indicates sensitive content is included
- No: Indicates non-sensitive content is included

Jurisdiction:

- National: Indicates national recipients
- State: Indicates state recipients
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- Local: Indicates local recipients

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