

Pertussis

Last Reviewed May 2006

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Letter from Jiancheng Huang October, 2006	

Definition: Pertussis (Whooping Cough) is an acute bacterial infection of the respiratory tract that is caused by *Bordetella pertussis*, a gram-negative bacterium. It is generally transmitted through airborne droplets or direct contact with respiratory secretions from the infected person.

The clinical presentation of pertussis consists of 3 stages:

1. The **catarrhal stage** (1 - 2 weeks) - characterized by an insidious onset of coryza (runny nose), sneezing, mild fever, and nonproductive cough. The cough gradually becomes more severe.
2. The **paroxysmal stage** (2 - 6 weeks) - consisting of paroxysmal cough, inspiratory "whoop," and post-tussive vomiting. The paroxysmal attacks occur more frequently at night, with an average of 15 attacks per 24 hours.
3. The **convalescent period** (2 or more weeks) – the paroxysm cough gradually decreases in frequency and intensity. The paroxysms may recur with subsequent respiratory infections for months after the onset of pertussis.

The incubation period is usually 7 to 10 days, ranging from 4 to 21 days. Diagnosis relies on culture of the nasopharyngeal aspirate or Dacron swab for *B. pertussis*. This can be an unpleasant experience for children; therefore, diagnosis may be made by presenting symptoms only. Antibiotic treatment guidelines for the individual with pertussis and their contacts can be found at the CDC website.

Immunization: Students enrolled in school must comply with the DOE Rule on Immunizations, Chapter 126 <http://www.maine.gov/sos/cec/rules/05/071/071c126.doc>. Generally the pertussis vaccine is provided during infancy, however, this vaccine series does not provide life-long protection. New CDC and ACIP guidelines recommend a booster, preferably at age 11 years.

Role of the School Nurse:

- Ensure that students are appropriately immunized and promote the use of vaccines (see Immunization section).
- Prepare a list of students not in compliance with the Rule on Immunizations.
- Educate appropriate school staff about signs and symptoms of disease.
- Contact parents of student suspected of having pertussis, recommending that the parent seek medical consult for their child.

- Notify Maine CDC of the number of students diagnosed with pertussis in school and seek guidance regarding management in school district (1-800-821-5821).
- Discuss with Maine CDC the school's responsibility for students not in compliance with the Rule on Immunization.
- Exclude students with pertussis from school until they have completed 5 days of an appropriate antibiotic.
- Continue to encourage good hygiene and hand washing.

Resources:

DOE Immunization Rule - <http://www.maine.gov/sos/cec/rules/05/071/071c126.doc>

CDC - <http://www.cdc.gov/nip/publications/pink/pert.pdf>
http://www.cdc.gov/ncidod/dbmd/diseaseinfo/pertussis_t.htm

NIFD - <http://www.nfid.org/factsheets/pertussis.pdf>

National Association of School Nursing, Tools for Pertussis -
<http://www.nasn.org/Portals/0/resources/tips.pdf>

MMWR - Preventing Tetanus, Diphtheria, and Pertussis Among Adolescents: Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and A cellular Pertussis Vaccines Recommendations of the Advisory Committee on Immunization Practices (ACIP) -
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr55e223a1.htm>

ME CDC Reportable Diseases -
<http://www.maine.gov/dhhs/boh/REPORTABLE%20DISEASES%20IN%20MAINE.doc>

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UPDATE LETTER FROM COMMUNICABLE DISEASE DIRECTOR, JIANCHENG HUANG
 OCTOBER, 2006

Dear Nancy,

Could you please help to send the following message to all school nurses in the state when you have time? We have seen increased pertussis activity in several communities in the state and we need school nurses help to promote pertussis vaccines. Here is the message we drafted for your distribution through your server list:

 Recently we have seen increased pertussis activities in some communities in the state. We feel that it is important to let parents know that there are vaccines to prevent this

disease, especially a new adolescent pertussis vaccine. The Maine immunization program provides free pertussis vaccines for children 18 years and younger.

Pertussis is a communicable disease that is spread from person to person, especially through coughing. Pertussis usually begins with cold-like symptoms (sore throat, running nose, etc.) and often develops into a bad cough. It could become a devastating disease for infants and young children, although about a half of the reported cases in Maine in the past several years were from adolescents and young adults. Some studies showed that the most of sick infants and young children got pertussis from infected adolescents and young adults.

The vaccine is effective in preventing pertussis; in this way, it prevents the student being excluded from school due to the disease. It also helps to prevent pertussis from spreading in the community and hitting at vulnerable infants and young children. We would like you to help us to promote the vaccine by encouraging parents bring their children, especially adolescents for the shot or discuss the vaccine with the health care providers.

Children less than 7 years of age should be immunized with 4 or 5 shots of DTaP against pertussis, depending on their age.

The new pertussis vaccine is for children 11-18 years of age. We strongly recommended to take the advantage of this new vaccine for pertussis. It is recommended to give children this vaccine with a 5-year minimum interval from their last pediatric DTaP or adolescent Td dose. This interval could be as short as 2 years minimum, however, if in settings with increased pertussis activity.

If you have any questions or concerns, please call the Maine Immunization Program at 1-(800) 867-4775.

Thank you.

Jiancheng

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