

Health Advisory:

Pertussis Identified in Two North-Central Missouri Amish Communities

July 12, 2010

This document will be updated as new information becomes available. The current version can always be viewed at <http://www.dhss.mo.gov>

The Missouri Department of Health & Senior Services (DHSS) is now using 4 types of documents to provide important information to medical and public health professionals, and to other interested persons:

Health Alerts convey information of the highest level of importance which warrants immediate action or attention from Missouri health providers, emergency responders, public health agencies, and/or the public.

Health Advisories provide important information for a specific incident or situation, including that impacting neighboring states; may not require immediate action.

Health Guidances contain comprehensive information pertaining to a particular disease or condition, and include recommendations, guidelines, etc. endorsed by DHSS.

Health Updates provide new or updated information on an incident or situation; can also provide information to update a previously sent Health Alert, Health Advisory, or Health Guidance; unlikely to require immediate action.

**Health Advisory
July 12, 2010**

**FROM: MARGARET T. DONNELLY
DIRECTOR**

SUBJECT: Pertussis Identified in Two North-Central Missouri Amish Communities

The Missouri Department of Health and Senior Services (DHSS) would like to alert health care providers about a recent increase in reported pertussis cases in two Amish communities. Local public health officials identified pertussis outbreaks in two Schuyler County Amish communities during the past two weeks. At the time of this report (7/9/10), a total of three laboratory-confirmed and fourteen suspected cases had been identified in the two Schuyler County communities. Three of the cases were hospitalized, all of whom were children (one is less than six months of age). Pertussis immunization coverage among children and adults is low in both communities. Additionally, a pertussis outbreak was reported last month in a Morgan County Mennonite group.

While statewide incidence of pertussis is not currently in excess of the five-year median, pertussis cases have been reported in all regions of Missouri over the past month (82 total), 25% of whom were less than one year of age. Among these reports, a school-associated outbreak and a large household cluster were identified in Howell and Boone Counties, respectively.

The purpose of this DHSS Health Advisory is to: 1) increase awareness among medical providers that pertussis is circulating among Amish groups in northern Missouri as well as other parts of the state's general population, and 2) to review current diagnostic, treatment, prophylaxis, and prevention recommendations.

Clinical Manifestations

Pertussis is highly communicable and can cause severe disease or death in very young children. It begins with mild upper respiratory tract symptoms and progresses to cough. The condition can further progress to severe paroxysms, often with a characteristic inspiratory whoop followed by vomiting. Fever is absent or minimal. Among older children and adults, the disease usually results in symptoms that can be mistaken for bronchitis and URI's-persistent cough, but no whoop. In infants younger than six months, apnea is a common manifestation and the whoop may be absent. It is important to remember that while pertussis is most often considered a disease that affects young children, it can occur at any age. Pertussis should be considered in older children and adults who have a persistent cough lasting more than 7-14 days, which cannot be attributed to another specific illness. If untreated, these older children and adults can act as a reservoir for pertussis and infect younger children.

Diagnostic Testing

The only pertussis diagnostic tests endorsed by the Centers for Disease Control and Prevention (CDC) are culture and polymerase chain reaction (PCR). The CDC guidelines for laboratory confirmation of pertussis do not include serologic testing, as serology assays using commercial reagents are not validated clinically and do not differentiate between recent and past infection, and vaccination. Obtaining a positive culture result from a person with pertussis can be affected by several factors, such as how the specimen is handled, the

stage of illness at the time of specimen collection, the use of antimicrobial therapy prior to culture, immunity from past infection or from vaccination, and age of the case-patient. Several studies have shown that specimens obtained for culture are more likely to be positive within three weeks of cough onset. The PCR test could be positive beyond the three-week period. If a case patient is symptomatic in the absence of another cause and is a close contact of a confirmed pertussis case, DHSS does not recommend testing before treating the case-patient. Pertussis test kits, including swabs and transport media, can be obtained from local public health agencies (LPHAs) or the Missouri State Public Health Laboratory (573-751-3334).

Treatment

Specific treatment recommendations are available in the American Academy of Pediatrics *Red Book* (see references below). The *Red Book* and CDC recommend erythromycin as well as the new macrolides, clarithromycin or azithromycin dehydrate, as the antimicrobial agents for treatment or prophylaxis against pertussis. A possible alternative for patients who do not tolerate erythromycin is trimethoprim-sulfamethoxazole (TMP-SMZ). Once into the paroxysmal stage, antibiotics will not ameliorate the disease but will limit the spread to others. If appropriate antimicrobial therapy is contraindicated or the patient refuses treatment, the patient should be isolated until three weeks after the onset of paroxysms. LPHAs can provide epidemiological consultation when required.

Prophylaxis of Household and Other Close Contacts

Chemoprophylaxis is recommended for all household and other close contacts regardless of age, whether the contact has pertussis-like symptoms, or immunization status. Close contacts are defined as those persons having direct contact with respiratory, oral, or nasal secretions from a symptomatic case-patient; having direct face-to-face contact, regardless of duration, with a symptomatic case; or having shared a confined space in close proximity for a prolonged period of time with a symptomatic case.

Immunization

The best way to reduce the incidence of pertussis is to have a highly vaccinated population. This should be accomplished through physicians' offices and public health clinics. Close contacts under the age of seven years who are unimmunized or underimmunized should have pertussis immunization initiated or continued according to the recommended schedule. Children who received their third dose six months or more before exposure should be given a fourth dose at this time as a protective measure. Children who received their fourth dose three or more years before exposure and who are younger than seven years of age should be given a fifth dose of DTaP at this time. A booster Tdap vaccine should be given to people 11-18 years of age if they have not previously received Tdap. Adults 19-64 years of age should receive a single dose of Tdap if it has been more than two years since their last Td vaccine, and they have not previously received Tdap. Shorter intervals can be considered if necessary.

In households with infant(s) less than twelve months of age, all children in the household should be up-to-date with the recommended doses of DTaP and all adults (including the mother) and adolescent household contacts should be appropriately vaccinated with a dose of Tdap, if they have not previously received Tdap.

Reporting

Health care providers are also requested to assist in the control of pertussis through immediate reporting of suspect cases by telephone to their LPHA, or to DHSS (800-392-0272).

References

1. Centers for Disease Control and Prevention. *Epidemiology and Prevention of Vaccine - Preventable Diseases*. Atkinson W, Wolfe S, Hamborsky J, McIntyre L, eds. "Pertussis." 11th Ed. Washington DC: Public Health Foundation, 2009, 199 – 216.
(Available at: <http://www.cdc.gov/vaccines/pubs/pinkbook/default.htm>)

2. Centers for Disease Control and Prevention. Prevention of Pertussis, Diphtheria and Tetanus among Pregnant and Postpartum Women and their Infants. *Morbidity and Mortality Weekly Report*, 2008;57(No.RR-4).
(Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5704a1.htm>)
3. Academy of Pediatrics. "Pertussis". In: Pickering L, ed. *Red Book: 2009 Report of the Committee on Infectious Diseases*. 27th Ed. Elk Grove Village, IL: American Academy of Pediatrics; 2009: 504 – 519.

DTaP = diphtheria and tetanus toxoids and acellular pertussis vaccine

Tdap = tetanus toxoid, reduced diphtheria toxoid and acellular pertussis vaccine

Td = tetanus and diphtheria toxoids vaccine