



Nebraska Health and Human Services
HEALTH ALERT NETWORK



To: Nebraska Health Care Providers and Infection Preventionists

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Subject: Increase in Pertussis: Recommendations on Diagnosis, Prevention, Treatment

There has been a rapid increase in *Bordetella pertussis* cases in Nebraska in recent months. So far during 2008, there have been 117 cases, most occurring since August. One death, in a four month old, has been reported this year. In comparison, 70 cases occurred during 2007. Physicians should maintain a high index of suspicion for pertussis in patients presenting with a cough of two weeks duration or more and especially if there is accompanying whoop, paroxysms, or posttussive vomiting. Infants may present with apnea and are at higher risk for severe disease.

Need to promote pertussis vaccination:

Vaccination is the cornerstone of pertussis prevention and control. Infants should receive a DTaP vaccine at 2, 4, and 6, months of age, followed by booster DTaP shots at 12-15 months of age and at 5 years of age. All persons over 10 and less than 65 years of age should receive a single dose of a pertussis-containing vaccine. In recent years, two such vaccines ("Tdap") have been approved: Boostrix (approved for ages 10 to 18) and Adacel (approved for ages 11 to 64). A booster dose is recommended for adolescents aged 11-12 years in place of the traditional Td vaccine. In an outbreak setting, children 10 years of age and older should receive a Tdap booster dose if they have not previously received a dose. For children older than 11 years or adults who have received a dose of Td, ACIP recommends a five-year interval between Td and Tdap, but this can be shortened if the risk of pertussis outweighs the risk of a local adverse reaction (such as during a community outbreak). Vaccination is 80-90 % effective in preventing clinical illness.

Importance of testing, reporting, and isolating cases:

It is critical for health care providers to promptly report clinically diagnosed and laboratory confirmed pertussis cases to the appropriate local health department (see attached map) or to the state (402-471-1983), as required by Nebraska State Regulations (173 NAC 1). A case of pertussis will require follow up by the health department to ensure that the case is treated and appropriately isolated for 5 days, and that close contacts are prescribed prophylactic antibiotics.

Laboratory diagnosis: PCR (preferred) and culture of deep nasopharyngeal specimen:

Laboratory testing is important for confirmation and may affect the decision to prophylax close contacts to prevent spread of the disease. Culture should be encouraged for confirming cases, and specimens should be obtained for testing ideally within 2 weeks of cough onset. PCR is rapid, sensitive, and does not require live organisms. PCR specificity increases is used in patients with at least 5 days of cough and associated pertussis symptoms. Acceptable diagnostic specimens include either a nasopharyngeal aspirate, or a nasopharyngeal swab using a Dacron or Rayon-tipped swab (avoid cotton and calcium-alginate tipped swabs). PCR and culture may be performed at reference laboratories or at the Nebraska Public Health Laboratory. While culture should also be encouraged for suspected cases, it may take 3-6 days and the organism can be difficult to isolate because of fastidious growth requirements. Diagnosis of pertussis with serology or DFA is not recommended.

Dosages of Antibiotics Used for the Treatment and Prevention of Pertussis:

A five day course of azithromycin, now available as a generic drug, is the preferred antibiotic for both treatment of cases, and prophylaxis of contacts. Trimethoprim-sulfamethoxazole is an acceptable alternative if the patient has contraindications for use of macrolides. Cases should not return to work or school until after at least five days of recommended treatment. Close contacts of cases include household contacts and others who have prolonged, close exposure.

The above treatment guidelines are consistent with those outlined in the American Academy of Pediatrics' 2003 Red Book and with the Centers for Disease Control and Prevention (CDC).