



**Date: October 28, 2014**

**Topic: Pertussis in Elko County**

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**To: Elko County Providers and Medical Facilities**

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## **Current Situation**

As of October 20, 2014, an outbreak of pertussis (whooping cough) in Elko County has been declared. According to data from the Division of Public and Behavioral Health, Elko County has seen a rise in pertussis cases over recent years. There were 15 cases of pertussis in Elko County in 2013 compared to two cases in 2012. As of October 28<sup>th</sup>, 2014, Elko County has had 14 cases of pertussis reported since July 2014. Controlling the spread of pertussis is dependent on quick identification of cases and contacts prompt treatment of these individuals, and immunization of susceptible persons.

## **Symptoms**

Pertussis is a highly communicable respiratory disease caused by *Bordetella pertussis* that is typically manifested by paroxysmal respiratory spasms, severe coughing, whooping, and post-tussive vomiting. Major complications are most common among infants and young children and include hypoxia, apnea, pneumonia, seizures, encephalopathy, malnutrition, and even death. Adults and adolescents have a more variable presentation ranging from asymptomatic to severe respiratory symptoms.

The incubation period for pertussis is 7 to 10 days, with a range of 4 to 21 days. The following are the stages associated with pertussis infection:

- **Catarrhal stage:** Onset of cold-like symptoms (coryza, sneezing, occasional cough). Fever is absent or minimal. Symptoms last approximately 1-2 weeks with cough gradually becoming more severe.
- **Paroxysmal stage:** Respiratory spasms and severe coughing are followed by sudden deep inspiration, often resulting in a characteristic “whooping” noise.
- **Convalescent stage:** Decreasing frequency and severity of coughing, whooping and vomiting. Coughing paroxysms may recur with subsequent respiratory infections. Pertussis symptoms generally last 6-10 weeks.

Infants  $\leq 6$  months of age may have shorter cartarrhal stage; may gag, gasp, or stop breathing (apnea); may not “whoop”; and are likely to have an increased absolute lymphocyte count. Adolescents are likely to have milder illness. Post-tussive vomiting is common in all ages.

## **Transmission**

Transmission occurs by close contact via aerosolized droplets from the respiratory tracts of infected persons. Persons with pertussis are infectious from onset of any catarrhal (cold-like) symptoms in untreated persons. Isolation is recommended during the first 5 days for patients on antibiotic treatment, or 21 days for untreated patients. Untreated and unvaccinated infants can be culture positive for  $\geq 6$  weeks.

## **Diagnostic Testing**

Pertussis is diagnosed through a positive polymerase chain reaction (PCR) test (preferred method) or diagnosis through isolation of *B. pertussis* from a clinical specimen (i.e. culture). Due to lower sensitivity and specificity, other tests are not recommended. PCR should be tested from nasopharyngeal specimens taken at 0-3 weeks following cough onset, but may

provide accurate results for up to 4 weeks. Results should be interpreted along with the clinical symptoms and epidemiological information.

### **Treatment**

Early treatment of pertussis is very important. The earlier a person, especially an infant, starts treatment the better. If treatment for pertussis is started early in the course of illness, during the first 1 to 2 weeks before coughing paroxysms occur, symptoms may be lessened. Clinicians should strongly consider treating prior to test results if clinical history is strongly suggestive or patient is at risk for severe or complicated disease (e.g. infants).

According to the CDC, a reasonable guideline is to treat persons aged >1 year within 3 weeks of cough onset and infants aged <1 year and pregnant women (especially near term) within 6 weeks of cough onset. The recommended antimicrobial agents for treatment or chemoprophylaxis of pertussis are azithromycin, clarithromycin and erythromycin. Trimethoprim-sulfamethoxazole can also be used. The recommended treatment and postexposure prophylaxis by age group can be found at the following link on the CDC website: [RECOMMENDED TREATMENT AND POSTEXPOSURE PROPHYLAXIS, BY AGE GROUP](#)

On March 12, 2013, the Food and Drug Administration (FDA) issued a warning that azithromycin can cause abnormal changes in the electrical activity of the heart that may lead to a potentially fatal irregular heart rhythm in some patients. Please see the following link to read the FDA warning: [FDA Warning](#)

### **Prevention**

Vaccination of persons who are not up-to-date for pertussis provides long- term protection but may not protect close contacts against current exposure. Children 0-6 years should receive age appropriate DTaP vaccine. Adolescents and adults 10-64 should receive one dose of Tdap if they haven't already been vaccinated. Chemoprophylaxis of close contacts within 21 days of exposure to an infectious index case may limit transmission of pertussis in households and high risk settings (e.g., child care settings and hospitals). Prophylaxis should be initiated to all close contacts regardless of age or immunization status.

### **Reporting**

Please contact Rural Community Health Services at 775.687.5162 (business hours) or 775. 434-4358 (after hours) to report cases of pertussis in Elko County and other rural counties of Nevada.



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