# Technical Bulletin
# Division of Public and Behavioral Health

**Date: July 28, 2014**
**Topic: Pertussis**
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**To: All Providers and Medical Facilities**

## Current Situation

According to data from the Office of Public Health Informatics and Epidemiology, Nevada has seen a rise in pertussis cases over recent years. There were 177 cases of pertussis in Nevada in 2013 and 115 cases in 2012, compared to 40 cases in 2011. As of June 2014, Nevada has had 60 cases of pertussis reported, hinting towards another year of elevated pertussis cases in the state. Controlling the spread of pertussis is dependent on quick identification of cases and contacts prompt treatment of these individuals, and immunization of susceptible persons.

California is also currently experiencing an increase in pertussis. The overall incidence of pertussis has increased since the 1990s with 5,393 cases for a state rate of 14.1 cases per 100,000 population. Due to the close proximity of California to Nevada and the high level of travel between the two states, it is essential to have prompt identification, reporting, and management of pertussis cases and contacts in Nevada.

## Symptoms and Transmission

Pertussis is a highly communicable respiratory disease caused by *Bordetella pertussis* that is typically manifested by paroxysmal respiratory spasms, severe coughing, whooping, and posttussive 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.

Infants ≤6 months of age:

- may have shorter catarrhal stage
- may gag, gasp, or stop breathing (apnea)
- may not “whoop”
- likely to have an increased absolute lymphocyte count.

Adolescents are likely to have milder illness. Posttussive vomiting is common in all ages.

- 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.

## Modes of Transmission

Transmission occurs by close contact via aerosolized droplets from the respiratory tracts of infected persons. Many infants who get pertussis are infected by older siblings, parents or caregivers who might not even know they have the disease.

**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., residential institutions and hospitals). Prophylaxis should be initiated to all close contacts regardless of age or immunization status.

## 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-sulfamethoxasole 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. Azithromycin remains one of the recommended drugs for treatment and chemoprophylaxis of pertussis, but consider using an alternative drug in those who have known cardiovascular disease. Please see the following link to read the FDA warning: FDA Warning

## Reporting

Please see the contact information below for the state and local health jurisdictions in Nevada to report cases of pertussis.

Please contact your local public health authority to report cases of pertussis.
Las Vegas area: Southern Nevada Health District, 702.759.1300
Reno/Sparks area: Washoe County Health District, 775.328.2447
Carson City, Douglas, Lyon County area: Carson City Health and Human Services, 775.887.2190
Other counties: Rural Community Health Services, 775.687.5162 (business hours) or 775.434.4358 (after hours)
State of Nevada Epidemiology Duty Officer (24 hours): 800775.400.0333

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