



Nevada State Health Division Technical Bulletin



Topic: Whooping Cough (Pertussis)
Date: June 2010

Section/Program: Office of Epidemiology

TO: Health Care Providers

Current Situation

According to the California Department of Public Health, California has been experiencing a three-fold increase in the cases of whooping cough (pertussis) over the same period last year. The most dramatic increase has occurred during the six month period ending June 18, 2010, with 910 confirmed and 600 suspected cases. This is a significant increase over cases reported during this time period in 2009. If this current trend continues, California could see a 50 year high in pertussis cases. To date, five infant deaths have been reported in California as a result of the current pertussis outbreak in California. 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. 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 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 a shorter catarrhal stage
- may gag, gasp, or stop breathing (apnea)

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Richard Whitley, Administrator, Nevada State Health Division



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- may not “whoop”
- likely to have an increased absolute lymphocyte count

Adolescents are likely to have milder illness. Post-tussive 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.

CDC laboratory criteria for diagnosis

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.

Period of communicability

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 ≥ 6 weeks.

Control measures

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.

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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.

RECOMMENDED TREATMENT AND POSTEXPOSURE PROPHYLAXIS, BY AGE GROUP

<u>Age Group</u>	<u>Azithromycin</u>	<u>Erythromycin</u>	<u>Clarithromycin</u>	<u>Alternate Agent</u>
≤1 month	Recommended agent for infants ≤ month; 10 g/kg per day in a single dose X 5 days	Not preferred; associated with hypertrophic pyloric stenosis in infant's ≤1 month. If azithromycin in unavailable use 40-50 mg/kg per day in 4 divided doses x 14 days	Not recommended	Contraindicated in infants ≤2 months (risk for kernicterus)
1-5 months	10mg/kg per day in a single dose for 5 days	40-50 mg/kg per day in 4 divided doses x 14 days	15 mg/kg per day in 2 divided doses x 7 days	Contraindicated in infants ≤2 months For infants ≥2months, TMP 8 mg/kg per day; SMX 40 mg/kg per day in 2 divided doses x 14 days
Infants aged ≥6 months and children	10 mg/kg as a single dose on day 1	40-50 mg/kg per day in 4 divided doses x	15 mg/kg per day in 2 divided doses x 7	TMP 8 mg/kg per day; SMX 40 mg/kg

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	(maximum 500 mg); then 5 mg/kg per day as a single dose on days 2-5 (maximum 250 mg/day)	14 days	days (maximum 1 g/day)	per day in divided doses x 14 days
Adolescents and adults	500 mg as a single dose on day 1 then 250 mg as a single dose on days 2-5	2 g/day in 4 divided doses x 14 days *Some experts prefer erythromycin estolate over erythromycin stearate or ethylsuccinate because it achieves higher serum levels with equal doses.	1 g/day in 2 divided doses x 7 days	TMP 300 mg/day, SMX 1600mg/day in 2 divided doses x 14 days †Trimethoprim-sulfamethoxazole (TMP-SMX) can be used as an alternative agent to macrolides in patients aged ≥2 months who are not pregnant or nursing and are allergic to, cannot tolerate, or are infected with a rare macrolide-resistant strain of <i>B. pertussis</i> .


To report pertussis cases please call:


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

Rural counties: Office of Epidemiology, 775.684.5911 (business hours) or 888.343.6293 (after hours)

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For further information on recommended vaccine schedules visit:

<http://www.cdc.gov/vaccines/recs/schedules/default.htm>

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Handwritten signature of Tracey D. Green, MD in blue ink.

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Richard Whitley, Administrator, Nevada State Health Division