County of Riverside
Department of Public Health

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Pertussis Fact Sheet – May 2014

Background Information

- Agent: *Bordetella pertussis*, a gram negative pleomorphic bacillus.
- Transmission: Via contact with respiratory tract secretions or droplets of infected persons.
- Incubation Period: Commonly 7-10 days (range 21 days).
- Communicability: Greater in the catarrhal stage before paroxysms. Tapers off until 21 days after onset of paroxysms, if untreated. If treated, 5 days after start of appropriate antibiotics.
- Secondary case attack rate: 70 – 100% among susceptible household contacts.

Clinical Features of Pertussis

- 1st Stage (Catarrhal stage): Insidious onset of coryza (runny nose) and a mild, occasional cough, similar to the common cold.
- 2nd Stage (Paroxysmal stage): Cough becomes more severe. Repeated violent coughing episodes without inhalation, followed by characteristic high-pitched inspiratory whoop. Post-tussive vomiting or gagging can occur without whoop. Can last 1-2 months.
- 3rd stage (Convalescent stage): Gradual recovery. Cough becomes less paroxysmal.
- Infants (under 6 months of age): May have cough, choking, apnea, cyanosis, without "whoop" or paroxysms. Leukocytosis and lymphocytosis are common findings during the early paroxysmal stage. Complications may include hospitalization, pneumonia, seizures, encephalopathy, and death.
- Adults/adolescents/immunized children: Have milder illness, hacking cough, usually with mucus production and occasional paroxysms. Post-tussive vomiting or gagging can occur without "whoop" and may mimic bronchitis. May also cause bronchospasms.

Assays Accepted as Laboratory Confirmation of Pertussis

- Culture: A negative culture does not rule out the diagnosis. All suspected cases of pertussis should have a nasopharyngeal aspirate or swab obtained for culture from the posterior nasopharynx before starting antibiotics and within 3 weeks of the cough onset.
- PCR Tests: The PCR test, when it is available, can greatly aid in the diagnosis of pertussis. Positive PCR must also be accompanied by positive clinical signs and symptoms. A specimen obtained by nasopharyngeal swab or aspirate is adequate for the PCR test. A polyester swab (such as Dacron or Rayon) should be used.
- Commercially available serologic tests to detect IgG and IgA antibodies to pertussis toxin are not validated and not generally recommended.
- Consult the Public Health Lab at (951) 358-5070, if technical assistance is needed.

Control Measures

- *Vaccination* of persons who are not up-to-date for pertussis provides long term protection but may not protect close contacts against the current exposure.
  - Children 0-6 years should receive age appropriate DTaP vaccine.
  - Adolescents and adults 10-64 should receive a dose of Tdap if they haven't received a dose.

- An accelerated schedule should be considered during increased disease activity – 1st dose at 6 weeks, 2nd and 3rd doses at 4 week intervals. Please refer to the California Department of Public Health Pertussis Vaccination Recommendations at http://www.cdc.gov/vaccines/vpd-vac/pertussis/recs-summary.htm.

- Patients are infectious from onset of any catarrhal symptoms until 21 days after onset of paroxysmal cough (if no or partial treatment was given). Communicability ends after 5 days of appropriate antibiotic treatment. Use droplet precautions for all suspected cases: Isolate and provide a face mask for suspect patient to wear. Put the patient in a private room. For transport, patients should be masked and requested to follow respiratory hygiene/cough etiquette.

Close Contact Definition

- Those who have had direct contact with respiratory, oral or nasal secretions from a symptomatic case (catarrhal or paroxysmal stages), e.g., a cough or sneeze in the face, sharing food/eating utensils, kissing, performing a medical examination of the nose and throat, or sharing a confined space in close proximity for a prolonged period of time (≥1 hour) with a symptomatic case.

High Risk Contact Definition

- Contacts at high risk for severe pertussis disease and adverse outcomes include: infants <1 year of age, particularly premature infants, pregnant or recently post-partum women, unimmunized infants and children, immune-compromised persons, persons with neuromuscular disease, persons who have severe underlying disease such as chronic lung disease or cystic fibrosis, or contacts who may transmit pertussis to a high risk person, such as healthcare or childcare workers.

Reporting to Public Health

All confirmed or suspect cases of pertussis should be reported to Disease Control by telephone at (951) 358-5107 or fax (951) 358-5102. The Confidential Morbidity Report (CMR) forms can be obtained by calling (951) 358-5107 or can be downloaded from the website: http://www.rivco-diseasecontrol.org/ .