



## Communicable Disease Case Reporting and Investigation Protocol **PERTUSSIS**

### **I. IDENTIFICATION AND DEFINITION OF CASES**

**A. Clinical Description:** Pertussis, or whooping cough, is an acute infectious disease caused by the bacterium *Bordetella pertussis*. Pertussis begins with mild upper respiratory tract symptoms similar to the common cold (catarrhal stage) and progresses to cough and then usually to bursts (paroxysms) of numerous, rapid coughs (paroxysmal stage), characterized by inspiratory whoop and commonly followed by vomiting. During such an attack, the patient may turn blue (cyanotic). Children and young infants often appear very ill and distressed. Infants less than 6 months of age may not have the strength to have a whoop, but they do have paroxysms of coughing and potentially apnea. The person does not appear ill between attacks. This stage typically lasts one to six weeks, but may persist for up to 10 weeks. Fever is absent or minimal. Symptoms wane gradually over weeks to months (convalescent stage). Transmission occurs by close contact with cases via aerosolized droplets. The incubation period is seven to 10 days. Infected people are most contagious during the catarrhal stage through the third week after onset of paroxysms.

**B. Laboratory Criteria:** Laboratory confirmed infection is defined by:

- Detection of *B. pertussis* nucleic acid by polymerase chain reaction (PCR) from an adequate nasopharyngeal specimen, or
- Isolation of *B. pertussis* nucleic acid from clinical specimen (nasopharyngeal specimen is preferred).

Note: Direct fluorescent antibody (DFA) and serologic tests are currently not acceptable forms of laboratory confirmation of pertussis infection and therefore are not recommended.

### **C. Wisconsin Surveillance Case Definition:**

#### **Confirmed:**

1. Acute cough illness of any duration, with isolation of *B. pertussis* from a clinical specimen.

**OR**

2. Cough illness lasting  $\geq 2$  weeks, with:

a. At least one of the following signs or symptoms:

- i. Paroxysms of coughing; or
- ii. Inspiratory "whoop"; or
- iii. Post-tussive vomiting; or
- iv. Apnea (with or without cyanosis) (FOR INFANTS AGED <1 YEAR ONLY).

And

- b. Polymerase chain reaction (PCR) positive for pertussis.

**OR**

3. Cough illness lasting  $\geq 2$  weeks, with:

a. At least one of the following signs or symptoms:

- i. Paroxysms of coughing, or
- ii. inspiratory "whoop", or
- iii. Post-tussive vomiting, or
- iv. Apnea (with or without cyanosis) (FOR INFANTS AGED <1 YEAR ONLY)

And

- b. Contact with a laboratory-confirmed case of pertussis.\*

#### **Probable:**

1. In the absence of a more likely diagnosis, a cough illness lasting  $\geq 2$  weeks, with:

a. At least one of the following signs or symptoms:

- i. Paroxysms of coughing, or
- ii. Inspiratory whoop, or
- iii. Post-tussive vomiting, or
- iv. Apnea (with or without cyanosis) (FOR INFANTS AGED <1 YEAR ONLY)

And

b. Absence of laboratory confirmation.

And

c. No epidemiologic linkage to a laboratory-confirmed case of pertussis.

**OR, FOR INFANTS AGED <1 YEAR ONLY:**

2. Acute cough illness of any duration, with:
    - a. At least one of the following signs or symptoms:
      - i. Paroxysms of coughing, or
      - ii. Inspiratory “whoop”, or
      - iii. Post-tussive vomiting, or
      - iv. Apnea (with or without cyanosis)
- And
- b. Polymerase chain reaction (PCR) positive for pertussis.

**OR, FOR INFANTS AGED <1 YEAR ONLY:**

3. Acute cough illness of any duration, with at least one of the following signs or symptoms:
    - a. At least one of the following signs or symptoms:
      - i. Paroxysms of coughing.; or
      - ii. Inspiratory "whoop."; or
      - iii. Post-tussive vomiting.; or
      - iv. Apnea (with or without cyanosis).
- And
- b. Contact with a laboratory-confirmed case of pertussis.

**\*NOTE:** An illness meeting the clinical case definition should be classified as "probable" rather than "confirmed" if it occurs in a patient who has contact with an infant aged <1 year who is polymerase chain reaction (PCR) positive for pertussis and has ≥1 sign or symptom and cough duration <14 days (classified as "probable" case).

## II. REPORTING

- A. **Wisconsin Notifiable Disease Category I – Methods for Reporting:** This disease shall be reported **IMMEDIATELY BY TELEPHONE** to the patient’s local health officer or to the local health officer’s designee upon identification of a case or suspected case, per Wis. Admin. Code § [DHS 145.04 \(3\) \(a\)](#). In addition to the immediate report, complete and fax, mail or electronically report an Acute and Communicable Disease Case Report (DHS [F-44151](#)) to the address on the form, or enter the data into the Wisconsin Electronic Disease Surveillance System, within 24 hours.
- B. **Responsibility for Reporting:** According to Wis. Admin. Code § [DHS 145.04\(1\)](#), persons licensed under Wis. Stat. ch. [441](#) or [448](#), laboratories, health care facilities, teachers, principals, or nurses serving a school or day care center, and any person who knows or suspects that a person has a communicable disease identified in [Appendix A](#).
- C. **Clinical Criteria for Reporting:** Clinically compatible illness. Cases should be reported immediately upon consideration of pertussis in the differential diagnosis.
- D. **Laboratory Criteria for Reporting:** Laboratory evidence of infection (e.g., PCR or culture).

## III. CASE INVESTIGATION

- A. **Responsibility for case investigation:** It is the responsibility of the local health department (LHD) to investigate or arrange for investigation of suspected or confirmed cases as soon as is reasonably possible. A case investigation may include information collected by phone, in person, in writing, or through review of medical records or communicable disease report forms, as necessary and appropriate.
- B. **Required Documentation:**
  1. Complete the Wisconsin Electronic Disease Surveillance System (WEDSS) disease incident investigation report, including appropriate, disease-specific tabs.
  2. Upon completion of investigation, set WEDSS disease incident process status to “Sent to State.”

**C. Additional Investigation Responsibilities:**

1. Wisconsin specific additional guidance for LHDs can be found on the Division of Public Health's website at <https://www.dhs.wisconsin.gov/publications/p0/p00637.pdf>
2. Contact your Immunization Program Regional Representative:  
<https://www.dhs.wisconsin.gov/lh-depts/counties.htm>

**IV. PUBLIC HEALTH INTERVENTIONS AND PREVENTION MEASURES**

- A. In accordance with Wis. Admin. Code § [DHS 145.05](#), local public health agencies should follow the methods of control recommended in the current editions of *Control of Communicable Diseases Manual*, edited by David L. Heymann, published by the American Public Health Association, and the American Academy of Pediatrics' *Red Book: Report of the Committee on Infectious Diseases*, unless otherwise specified by the state epidemiologist.
- B. Refer to Wisconsin DPH's Pertussis Surveillance and Control Guidance for detailed information on case and contact management at: <https://www.dhs.wisconsin.gov/publications/p0/p00637.pdf>
- C. While awaiting lab results, begin investigation and be prepared to implement control measures as soon as needed or upon lab confirmation.

**V. CONTACTS FOR CONSULTATION**

- A. Local health departments and tribal health agencies: <https://www.dhs.wisconsin.gov/lh-depts/index.htm>
- B. Regional Immunization Program representatives: <https://www.dhs.wisconsin.gov/lh-depts/counties.htm>
- C. Bureau of Communicable Diseases, Immunization Program: 608-267-9959. After hours number: 608-258-0099.
- D. Wisconsin State Laboratory of Hygiene: 1-800-862-1013. After hours emergency number: 608-263-3280.

**VI. RELATED REFERENCES**

- A. Heymann DL, ed. Pertussis. In: *Control of Communicable Diseases Manual*. 20th ed. Washington, DC: American Public Health Association, 2015: 449-454.
- B. Pickering LK, ed. Pertussis. In: *Red Book: 2015 Report of the Committee on Infectious Diseases*. 30th ed. Elk Grove Village, IL: American Academy of Pediatrics, 2015: 608-621.
- C. Centers for Disease Control and Prevention. *Epidemiology and Prevention of Vaccine-Preventable Diseases*. Hamborsky J, Kroger A, Wolfe S, eds. 13<sup>th</sup> ed. Washington D.C. Public Health Foundation, 2015.
- D. Centers for Disease Control and Prevention. Manual for the Surveillance of Vaccine-Preventable Diseases Pertussis website: <https://www.cdc.gov/vaccines/pubs/surv-manual/chpt10-pertussis.html>
- E. Centers for Disease Control and Prevention. Pertussis Surveillance Worksheet. Retrieved July 24, 2017, from <https://www.cdc.gov/vaccines/pubs/surv-manual/appx/appendix11-2-pertussis-wrsht.pdf>
- F. Wisconsin Immunization Program Pertussis webpage:  
<https://www.dhs.wisconsin.gov/immunization/pertussis.htm>
- G. Wisconsin Department of Health Services. (2017). *Pertussis surveillance and control guidelines*. Retrieved July 18, 2017, from <https://www.dhs.wisconsin.gov/publications/p0/p00637.pdf>