



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

### I. IDENTIFICATION AND DEFINITION OF CASES

A. **Clinical Description:** An illness characterized by acute or insidious onset of fever and one or more of the following: night sweats, arthralgia, headache, fatigue, anorexia, myalgia, weight loss, arthritis/spondylitis, meningitis, or focal organ involvement (endocarditis, orchitis/epididymitis, hepatomegaly, splenomegaly). The causative bacteria are *Brucella* species, most commonly *B. melitensis*, *B. abortus*, *B. suis*, and *B. canis*.

B. **Laboratory Criteria:**

**Confirmatory:**

- Culture and identification of *Brucella* spp. from clinical specimens.
- Evidence of a fourfold or greater rise in *Brucella* antibody titer between acute- and convalescent-phase serum specimens obtained greater than or equal to two weeks apart.

**Presumptive:**

- *Brucella* total antibody titer  $\geq 160$  by standard tube agglutination test (SAT) or *Brucella* microagglutination test (BMAT) in one or more serum specimens obtained after onset of symptoms.
- Detection of *Brucella* DNA in a clinical specimen by PCR assay.

C. **Wisconsin Surveillance Case Definition:**

**Confirmed:** A clinically compatible illness with confirmatory laboratory evidence of *Brucella* infection.

**Probable:** A clinically compatible illness with at least one of the following:

- Epidemiologically linked to a confirmed human or animal brucellosis case.
- Presumptive laboratory evidence, but without confirmatory laboratory evidence, of *Brucella* infection.

### II. REPORTING

A. **Wisconsin Disease Surveillance Category II – Methods for Reporting:** This disease shall be reported to the patient's local health officer or to the local health officer's designee within 72 hours of recognition of a case or suspected case, per Wis. Admin. Code § [DHS 145.04 \(3\) \(b\)](#). Report electronically through the Wisconsin Electronic Disease Surveillance System (WEDSS), or mail or fax a completed Acute and Communicable Disease Case Report ([F-44151](#)) to the address on the form.

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:** Clinical diagnosis with confirmatory or presumptive laboratory results.

D. **Laboratory Criteria for Reporting:** Laboratory evidence of infection by culture or non-culture-based methods. All positive results should be reported.

### 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.

A source investigation is required. This may be facilitated by completing the brucellosis case report form (<https://www.cdc.gov/brucellosis/pdf/case-report-form.pdf>). Search for history of exposure to infected animals (including dogs) or animal products (especially unpasteurized milk and cheese) and trace to place of origin. Ensure any implicated product is not in commercial distribution within the U.S. Obtain travel history. Inquire

about exposure to microbiology laboratory settings because multiple cases have been traced to clinical laboratory exposures. Additionally, check for history of exposure to the brucellosis vaccine used in livestock, since this is a live vaccine. Infections with either the cattle vaccine strain (*B. abortus* RB51) or with the *B. canis* organism typically do not produce a detectable antibody response on standard serologic tests, although both agents can be cultured using standard microbiological methods.

**B. Required Documentation:**

1. Complete the WEDSS disease incident investigation report. Complete the brucellosis case report form (<https://www.cdc.gov/brucellosis/pdf/case-report-form.pdf>) and save it into the WEDSS file cabinet.
2. Upon completion of investigation, set WEDSS disease incident process status to “Sent to State.”

**C. Additional Investigation Responsibilities**

If there is an isolate of *Brucella*, determine which lab(s) performed the isolation and identification of the bacterium. Bureau of Communicable Diseases (BCD) staff can advise on the potential for exposure of laboratorians and the need for post-exposure monitoring and prophylaxis of lab staff.

**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. When the opportunity exists, educate the public about the potential risks involved with consuming unpasteurized dairy products, particularly in developing countries. If a product in commercial distribution is identified as a source, coordinate with BCD and Department of Agriculture Trade and Consumer Protection (DATCP) staff to ensure product is removed from distribution. Operators of dog breeding facilities should test breeding stock to ensure the animals are free of *B. canis*. Persons who hunt wild pigs should take precautions when field-dressing the game to avoid exposure to *B. suis*.
- C. If brucellosis is suspected, clinicians and microbiologists should ensure that clinical specimens are labeled as a possible *Brucella* risk to protect laboratorians who process those materials.

**V. CONTACTS FOR CONSULTATION**

- A. Local health departments and tribal health agencies:  
<https://www.dhs.wisconsin.gov/lh-depts/index.htm>
- B. Bureau of Communicable Diseases , Communicable Diseases Epidemiology Section: 608-267-9003
- C. Wisconsin State Laboratory of Hygiene: 1-800-862-1013

**VI. RELATED REFERENCES**

- A. Heymann DL, ed. Brucellosis. In: *Control of Communicable Diseases Manual*. 20th ed. Washington, DC: American Public Health Association, 2015: 78–81.
- B. Pickering LK, ed. Brucellosis. In: *Red Book: 2015 Report of the Committee on Infectious Diseases*. 30th ed. Elk Grove Village, IL: American Academy of Pediatrics, 2015:268-270.
- C. Centers for Disease Control and Prevention website: <https://www.cdc.gov/brucellosis/index.html>
- D. Centers for Disease Control and Prevention. Laboratory-Acquired Brucellosis --- Indiana and Minnesota. MMWR 2008;57(02):39-42. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5702a3.htm>