BABESIOSIS

I. IDENTIFICATION AND DEFINITION OF CASES

A. Clinical Description: Babesiosis is a parasitic disease caused by intraerythrocytic protozoa of the genus Babesia (B. microti most commonly in the U.S.). Babesia are transmitted in nature through the bites of infected ticks but can also be acquired through contaminated blood components from asymptomatic parasitemic donors or, more rarely, transplacentally. Babesia infection can range from subclinical to life threatening. Clinical manifestations, if any, can include hemolytic anemia and nonspecific influenza-like signs and symptoms. Splenomegaly, hepatomegaly, or jaundice may be evident. In addition to signs of hemolytic anemia, laboratory findings may include thrombocytopenia, proteinuria, hemoglobinuria, and elevated levels of liver enzymes, blood urea nitrogen, and creatinine. Risk factors for severe babesiosis include asplenia, advanced age, and other causes of impaired immune function (e.g., HIV, malignancy, corticosteroid therapy). Severe cases can be associated with marked thrombocytopenia, disseminated intravascular coagulation, hemodynamic instability, acute respiratory distress, myocardial infarction, renal failure, hepatic compromise, altered mental status, and death.

B. Laboratory Criteria:

1. Laboratory confirmatory:
   - Identification of intraerythrocytic Babesia organisms by light microscopy in a Giemsa, Wright, or Wright-Giemsa–stained blood smear; or
   - Detection of Babesia microti DNA in a whole blood specimen by polymerase chain reaction (PCR); or
   - Detection of Babesia spp. genomic sequences in a whole blood specimen by nucleic acid amplification; or
   - Isolation of Babesia organisms from a whole blood specimen by animal inoculation.

2. Laboratory supportive:
   - Demonstration of a Babesia microti Indirect Fluorescent Antibody (IFA) total immunoglobulin (Ig) or IgG antibody titer of greater than or equal to (≥) 1:256 (or ≥1:64 in epidemiologically linked blood donors or recipients); or
   - Demonstration of a Babesia microti Immunoblot IgG positive result; or
   - Demonstration of a Babesia divergens IFA total Ig or IgG antibody titer ≥ 1:256; or
   - Demonstration of a Babesia duncani IFA total Ig or IgG antibody titer ≥ 1:512.

C. Wisconsin Surveillance Case Definition:

1. Confirmed: A case that has confirmatory laboratory results and meets at least one of the objective or subjective clinical criteria, regardless of the mode of transmission (can include clinically manifest cases in transfusion recipients or blood donors).

2. Probable:
   (a) A case that has supportive laboratory results and meets at least one of the objective clinical evidence criteria (subjective criteria alone are not sufficient); or
   (b) A case that is in a blood donor or recipient epidemiologically linked to a confirmed or probable babesiosis case (as defined above) and:
      i. Has confirmatory laboratory evidence but does not meet any objective or subjective clinical evidence criteria; or
      ii. Has supportive laboratory evidence and may or may not meet any subjective clinical evidence criteria but does not meet any objective clinical evidence criteria.

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:**
   - **Objective:** one or more of the following: fever, anemia, or thrombocytopenia.
   - **Subjective:** one or more of the following: chills, sweats, headache, myalgia, or arthralgia.

D. **Laboratory Criteria for Reporting:** Confirmatory or supportive laboratory findings.

### 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 WEDSS disease incident investigation report, including appropriate, disease-specific tabs. Upon completion of investigation, set WEDSS disease incident process status to “Sent to State.”
   2. For confirmed cases, complete the travel history questions in the babesiosis risk tab in WEDSS.

C. **Additional Investigation Responsibilities:** If patient has a history of recent receipt of blood products, contact Bureau of Communicable Diseases staff immediately.

### IV. PUBLIC HEALTH INTERVENTIONS AND PREVENTION MEASURES


B. Briefly, patient education as needed to minimize future risk of exposure to infected ticks. Because *Babesia* sp. can be acquired by blood transfusion, ascertain whether patient recently received or donated blood or blood products.

### 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

