Wisconsin Department of Health Services
Division of Public Health
P-01929 (Rev 08/2017)

Communicable Disease Case Reporting and Investigation Protocol

YELLOW FEVER

I. IDENTIFICATION AND DEFINITION OF CASES

A. **Clinical Description:** Yellow fever illness is caused by a flavivirus in the arbovirus group and transmitted to humans by the bite of an infected mosquito. This mosquito-borne illness is characterized by acute onset of fever and chills, severe headache, back pain, muscle aches, nausea, fatigue, and weakness. Patients with yellow fever may be viremic for 3 three to 6 six days before developing symptoms. A brief remission of symptoms may occur, followed by recurring symptoms including fever, headache, back pain, nausea, vomiting, hepatitis, kidney and liver failure, shock, and generalized hemorrhages. Yellow fever occurs in parts of South America and tropical regions of Africa. Rare cases of yellow fever infection have been associated with U.S. travelers. Vaccination is available for travelers.

B. **Laboratory Criteria:**

- Confirmatory laboratory evidence:
  - Four-fold or greater rise in yellow fever quantitative antibody titers in serum or cerebrospinal fluid (CSF), and cross-reactions to other flaviviruses have been excluded, and the patient must not have a history of yellow fever vaccination, **OR**
  - Demonstration of yellow fever virus, antigen, or genome in tissue, blood or other body fluid.
- Supportive laboratory evidence:
  - Stable elevated antibody titer to yellow fever virus (see Note), and cross-reactive serologic reactions to other flaviviruses have been excluded, and the patient must not have a history of yellow fever vaccination.

  Note: Elevated immunoglobulin M (IgM) and/or immunoglobulin G (IgG) antibody titers are defined below.
  - Complement fixation (CF) = greater or equal to 1:32 antibody, **OR**
  - Immunofluorescence assay (IFA) = greater or equal to 1:256 antibody, **OR**
  - Hemagglutination inhibition = greater or equal to 1:160 by neutralization, **OR**
  - Immunoglobulin M-capture enzyme immunoassay (ELISA) = positive IgM, **OR**
  - Microsphere-based immunoassay (MIA) = positive IgM.

C. **Wisconsin Surveillance Case Definition:**

- **Confirmed:** A clinically compatible case with at least one of the laboratory confirmed criteria.
- **Probable:** A clinical compatible case with supportive laboratory evidence.

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 (WEDSS), 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.

D. **Laboratory Criteria for Reporting:** Laboratory evidence of infection by detection of yellow fever-specific immunoglobulin M, yellow fever-specific immunoglobulin G, yellow fever-specific ribonucleic acid sequence by polymerase chain reaction in clinical specimens, or detection of yellow fever antigen by immunohistochemistry.

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. This may be facilitated by completing an Arbovirus Infection Follow-up Form.
   2. Upon completion of investigation, set WEDSS disease incident process status to "Sent to State."

C. **Additional Investigation Responsibilities:**
   1. Obtain detailed travel history three to six days before the onset of symptoms to locate the probable area of exposure to yellow fever.
   2. Acquire vaccination history against flaviviruses (i.e., yellow fever, Japanese encephalitis).
   3. Determine if the patient has had a previous flavivirus diagnosis and, if so, the month and year when this illness occurred.

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. Observe all other persons who had traveled to the area of exposure.

C. Promote yellow fever immunization among persons aged ≥ 9 months travelling to or living in areas of South America and Africa that are at risk for yellow fever virus transmission. Some countries require proof of yellow fever vaccination for entry. See CDC Yellow Book for more information.

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. Bureau of Communicable Diseases, Immunization Section: 608-266-2346

D. Wisconsin State Laboratory of Hygiene: 1-800-862-1013

VI. RELATED REFERENCES

A. Heymann DL, ed. Yellow Fever. In: *Control of Communicable Diseases Manual*. 20th ed. Washington, DC: American Public Health Association, 2015: 683-689.

B. Pickering LK, ed. Yellow Fever. In: *Red Book*: *2015 Report of the Committee on Infectious Diseases*. 30th ed. Elk Grove Village, IL: American Academy of Pediatrics, 2015: 240-246.

C. Gershman M, Staples E. Yellow Fever. In: CDC Health Information for International Travel 2018 (Yellow Book), available online in the Traveler's Health section of the CDC website at https://wwwnc.cdc.gov/travel/yellowbook/2018/infectious-diseases-related-to-travel/yellow-fever

D. Centers for Disease Control and Prevention yellow fever website:
https://www.cdc.gov/yellowfever/index.html