



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

### I. IDENTIFICATION AND DEFINITION OF CASES

A. **Clinical Description:** Measles is an acute viral respiratory illness. It is characterized by a prodrome of fever (as high as 105°F) and malaise, cough, coryza, and conjunctivitis—the three C’s, a pathognomonic enanthema (Koplik spots) followed by a maculopapular rash lasting at least three days. The incubation period generally is eight to 12 days from exposure to onset of symptoms. The rash usually appears about 14 days after a person is exposed. Measles is transmitted by direct contact with infectious droplets or, less commonly, by airborne spread. Measles is highly infectious. The rash spreads from the head to the trunk to the lower extremities. Individuals are considered to be contagious from four days before to four days after the rash appears. Of note, sometimes immunocompromised patients do not develop the rash.

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

- Positive serologic test for measles IgM antibody, or
- Detection of measles ribonucleic acid sequence by polymerase chain reaction (PCR) in clinical specimens, or
- Isolation of measles virus from a clinical specimen, or
- A significant increase in measles-specific IgG antibody concentration in acute and convalescent specimens collected at least 10 days apart.

C. **Wisconsin Surveillance Case Definition:**

- **Confirmed:** An acute febrile rash illness<sup>†</sup> with:
  - Isolation of measles virus<sup>‡</sup> from a clinical specimen, or
  - Detection of measles virus nucleic acid<sup>‡</sup> from a clinical specimen using PCR, or
  - IgG seroconversion<sup>‡</sup> or a significant rise in measles IgG antibody<sup>‡</sup> using any evaluated and validated method, or
  - A positive serologic test for measles IgM antibody<sup>‡§</sup>, or
  - Direct epidemiologic linkage to a case confirmed by one of the methods above.
- **Probable:** In the absence of a more likely diagnosis, an illness that meets the clinical description with:
  - No epidemiologic linkage to a laboratory-confirmed measles case; and
  - Noncontributory or no measles laboratory testing.

<sup>†</sup>Temperature does not need to reach  $\geq 101^{\circ}\text{F}$  and rash does not need to last  $\geq 3$  days.

<sup>‡</sup>Not explained by MMR vaccination during the previous 6-45 days.

<sup>§</sup>Not otherwise ruled out by other confirmatory testing or more specific measles testing in a public health laboratory.

### 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 measles in the differential diagnosis.

D. **Laboratory Criteria for Reporting:** Laboratory evidence of infection (e.g., PCR, IgM, 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 Department of Health Services website at <https://www.dhs.wisconsin.gov/publications/p00892.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 the Wisconsin Division of Public Health Measles Surveillance and Control Guidelines for detailed information on case and contact management at: <https://www.dhs.wisconsin.gov/publications/p00892.pdf>

C. Implement control measures immediately and before laboratory confirmation. If the results are negative, the decision to continue control measures should be made in consultation with the treating health care provider, the LHD, and the Bureau of Communicable Diseases.

### 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. Measles. In: *Control of Communicable Diseases Manual*. 20th ed. Washington, DC: American Public Health Association, 2015: 389-397.

B. Pickering LK, ed. Measles. In: *Red Book: 2015 Report of the Committee on Infectious Diseases*. 30th ed. Elk Grove Village, IL: American Academy of Pediatrics, 2015: 535-547.

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 Measles website: <https://www.cdc.gov/vaccines/pubs/surv-manual/chpt07-measles.html>

- E. Centers for Disease Control and Prevention. Measles Surveillance Worksheet. Retrieved July 24, 2017, from <https://www.cdc.gov/vaccines/pubs/surv-manual/appx/appendix08-2mea-wrsht.pdf>
- F. Wisconsin Immunization Program Measles webpage: <https://www.dhs.wisconsin.gov/immunization/measles.htm>
- G. Wisconsin Immunization Program. (2017). *Measles surveillance and control guidelines, P-00892*. Retrieved July 20, 2017, from <https://www.dhs.wisconsin.gov/publications/p00892.pdf>