



Communicable Disease Case Reporting and Investigation Protocol **TYPHOID FEVER**

I. IDENTIFICATION AND DEFINITION OF CASES

- A. **Clinical Description:** An illness caused by *Salmonella typhi* that is often characterized by insidious onset of sustained fever, headache, and malaise. Other signs and symptoms may include malaise, anorexia, relative bradycardia, constipation (more in adults) or diarrhea, and nonproductive cough. Some people will have a rash of flat, rose-colored spots. Many mild and atypical infections occur and carriage of *Salmonella typhi* may be prolonged.
- B. **Laboratory Criteria:**
Confirmatory laboratory evidence: Isolation of *Salmonella typhi* from blood, stool, or other clinical specimen.
- C. **Wisconsin Surveillance Case Definition:**
- **Confirmed:** A clinically compatible case that meets the confirmatory laboratory criteria.
 - **Probable:** A clinically compatible case that is epidemiologically linked to a confirmed case in an outbreak.

Note: Asymptomatic carriage should not be reported as a case of typhoid fever, but should instead be reported as a case of salmonellosis.

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:** None.
- D. **Laboratory Criteria for Reporting:** Laboratory evidence of infection.

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.
 2. Complete the Centers for Disease Control and Prevention's Typhoid and Paratyphoid Fever Surveillance Report ([CDC 52.5](#)) and save to the WEDSS disease incident file cabinet.
 3. Upon completion of investigation, set WEDSS disease incident process status to "Sent to State."
- C. **Additional Investigation Responsibilities**
1. Ensure clinical specimen has been forwarded to the Wisconsin State Laboratory of Hygiene for molecular subtyping (whole genome sequencing or pulsed-field gel electrophoresis).
 2. Assess patient for high-risk settings or activities to include food handling, providing patient care or child care, or attending a child care facility.

3. Determine if any household or other close/sexual contacts of patients have high-risk settings or activities to include food handling, providing patient care or child care, or attending a child care facility and determine if they have had any signs or symptoms.
4. Identify and follow-up with co-travelers of cases who traveled outside of the U.S. in the 30 days before illness onset.
5. Source investigation by LHD for domestically acquired cases (a case in a person who did not travel outside of the U.S. in the 30 days before illness onset).

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. Educate the public about proper handwashing after using the toilet, changing diapers, assisting another with toileting, handling contaminated clothing or linens, before cooking, or when associating with high-risk individuals.
- C. Exclude case patients from high-risk settings including food handling, providing patient care or child care, or attending a child care facility.
 1. Individuals should not return to high-risk settings following exclusion until they have been cleared by their LHD. Return to high-risk activities routinely requires evidence be provided to the LHD of three consecutive stool specimens negative for *Salmonella* Typhi by culture. When laboratory evidence of clearance is required, specimens should be collected 1) at least one month after onset of illness and 2) at least 48 hours after discontinuance of antimicrobial therapy. Specimens should be collected at least 24 hours apart.
 2. Exclusion, restriction, and reinstatement criteria used by the LHD for infected individuals who are food employees should comply with [Wisconsin Food Code](#) criteria and may be more restrictive than the Wisconsin Food Code.
- D. For cases with a likely travel-associated infection, co-travelers should be assessed for signs or symptoms while travelling and since their return, and screened for participation in any high-risk activities (food handling, providing patient care or child care, or attending a child care facility).
 1. Co-travelers who experienced signs and symptoms and have a high-risk activity should submit at least one stool sample for screening and may be excluded pending the results of the stool culture if deemed necessary.
 2. Co-travelers in high-risk setting who have **not** had any signs or symptoms should submit at least one stool sample for screening, but do not always need to be excluded while awaiting results of the stool culture. A risk assessment should be conducted to determine if exclusion is appropriate.
 3. Co-travelers who are NOT identified as being in a high-risk group should be educated about signs and symptoms of typhoid fever and directed to contact their health care provider if they have been or become symptomatic. Stool cultures should be encouraged for anyone who has had symptoms.
 4. Non-travel contacts of cases (household or other close/sexual contacts) should be screened for participation in any high-risk activities (food handling, providing patient care or child care, or attending a child care facility) and for signs or symptoms since the return of the travel-associated case. Any contacts who report having high-risk activities should be evaluated and exclusion and/or testing facilitated as appropriate.
 5. Consult Bureau of Communicable Diseases epidemiologist.

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. Typhoid and Paratyphoid Fever. In: *Control of Communicable Diseases Manual*. 20th ed. Washington, DC: American Public Health Association, 2015: 654-660.
- B. Pickering LK, ed. *Salmonella* Infections. In: *Red Book: 2015 Report of the Committee on Infectious Diseases*. 30th ed. Elk Grove Village, IL: American Academy of Pediatrics, 2015: 695-702.
- C. Centers for Disease Control and Prevention website: <https://www.cdc.gov/typhoid-fever/index.html>
- D. Public Health England, Interim – Public Health Operational Guidelines for Typhoid and Paratyphoid (Enteric Fever):
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/614875/Public_Health_Operational_Guidelines_for_Typhoid_and_Paratyphoid.pdf
- E. Wisconsin Food Code: http://docs.legis.wisconsin.gov/code/admin_code/atcp/055/75_.pdf