Wisconsin Department of Health Services
Division of Public Health
P-02303 (Rev 06/2018)

Communicable Disease Case Reporting and Investigation Protocol

LATENT TUBERCULOSIS INFECTION (LTBI)

I. IDENTIFICATION AND DEFINITION OF CASES

A. **Clinical Description:** Tuberculosis (TB) is a bacterial disease caused by organisms in the *Mycobacterium tuberculosis* complex (*M. tuberculosis*, *M. bovis*, *M. africanum, M. canettii, M. microti, M. caprae and M. pinnipedii*). There are two forms of TB, latent and active (pulmonary and/or extrapulmonary).

Latent TB infection (LTBI): Infection can be established following exposure to a patient with active TB disease expelling aerosolized droplets containing viable bacteria. People with initial infection generally do not feel sick, have no outward clinical manifestations, and cannot spread the bacteria to others. Some people with LTBI will develop active TB disease during their lifetime. LTBI is characterized by microscopic lesions in the lungs that commonly heal without leaving residual changes other than occasional small pulmonary or tracheobronchial lymph node calcifications.

Active TB disease: Clinical illness can develop following *M. tuberculosis* complex infection and is facilitated by certain risk factors. Disease can be pulmonary, extrapulmonary or both. Active pulmonary disease is frequently communicable until it is appropriately treated. Cough, fever, fatigue, night sweats, and weight loss are common symptoms associated with pulmonary TB. In most cases, cough is initially nonproductive and later accompanied by production of purulent sputum. Signs and symptoms such as hemoptysis and hoarseness associated with laryngeal TB are sometimes prominent in advanced stages. Chest radiography reveals pulmonary infiltrates and cavitations. With prolonged pulmonary disease, fibrotic changes with volume loss are seen. Extrapulmonary TB occurs in 15 percent to 30 percent of cases and may affect any organ or tissue. Symptoms of extrapulmonary TB depend on the area affected.

B. **Clinical Criteria for a Case of LTBI:** Clinical criteria alone are not sufficient to classify a case of LTBI. Clinical criteria that are indicative of possible LTBI include no clinical evidence compatible with TB Disease:

- No signs or symptoms consistent with TB disease; **and**
- Chest imaging (chest radiograph or CT scan) without abnormalities consistent with TB disease, **or**
- Chest imaging is abnormal and could be consistent with TB disease, but the disease has been clinically ruled out.

C. **Laboratory Criteria:**

Diagnostic tests for TB infection include tests that detect a person's immunologic response to *Mycobacterium* antigens which include the clinically-administered tuberculin skin test (TST), laboratory-performed interferon gamma release assays (IGRA), and microbiologic (culture-based) testing for the detection of *M. tuberculosis* complex. Currently available nucleic acid amplification tests are not sufficiently sensitive to exclude a diagnosis of TB in acid-fast bacilli (AFB) smear-negative patients suspected to have TB. Laboratory criteria alone are not sufficient to confirm a case of LTBI. Laboratory (immunologic and microbiologic) test results that are indicative of possible LTBI:

- Immunologic: a positive IGRA test **or** an accurately interpreted positive TST, and
- Microbiologic: *M. tuberculosis* complex was **not** isolated from culture of a clinical specimen, if a specimen was collected.

D. **Wisconsin Surveillance Case Definition:**

- **Suspected:** A case that meets the laboratory (immunologic and microbiologic) criteria, but lacks sufficient clinical information.
- **Confirmed:** A case that meets clinical **and** laboratory (immunologic and microbiologic) 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), people 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:** Report any patient that meets criteria for a suspected or confirmed case of LTBI. The report shall include documentation of a clinical TB evaluation that demonstrates lack of active TB disease and assessment of risk for TB infection. People at increased risk for *Mycobacterium tuberculosis* infection include:

- Foreign-born people from areas that have a high incidence of active tuberculosis. This includes any country other than the United States, Canada, Australia, New Zealand, or a country in western or northern Europe.
- People who reside in or visit areas with a high prevalence of active tuberculosis. Travel is of extended duration or including likely contact with infectious TB in a location of high TB prevalence.
- Close contacts of people known to have infectious tuberculosis disease.
- Residents and employees of congregate settings whose clients are at increased risk for active tuberculosis (for example: correctional facilities, long-term care facilities, and homeless shelters) in a state or district with an elevated TB rate including Alaska, California, Florida, Hawaii, New Jersey, New York, Texas or Washington DC.
- Populations defined locally as having an increased incidence of latent *M. tuberculosis* infection or active tuberculosis, possibly including medically underserved, low income populations, or people who abuse drugs or alcohol.
- Infants, children, and adolescents who are exposed to adults who are at increased risk for latent *M. tuberculosis* infection or active tuberculosis.

D. **Laboratory Criteria for Reporting:** Report immunologic test results consistent with LTBI that include TST or IGRA and, if specimens were collected, microbiologic test results. All relevant immunologic results including nil, mitogen, and TB antigen numeric values for IGRA, millimeters of induration for TST and interpretation shall be reported.

III. CASE INVESTIGATION

A. **Responsibility for Case Investigation**: It is the responsibility of the local health department 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. WEDSS:
   a. Complete the WEDSS disease incident investigation report, including appropriate, disease-specific tabs.
   b. Upon completion or discontinuation of LTBI treatment, set WEDSS disease incident process status to "final."
   c. If relevant, complete the WEDSS TB contact investigation (CI) report, including appropriate, disease-specific tabs. If indicated, convert the WEDSS CI to an LTBI disease incident.

2. If information is not documented in WEDSS, complete the forms below and email or fax to the patient's local health officer or to the local health officer's designee:
   a. F-02265: Latent Tuberculosis Infection Confidential Case Report https://www.dhs.wisconsin.gov/forms/f02265.docx
   b. F-44125: Latent Tuberculosis Infection Follow-Up Report (upon completion or discontinuation of therapy). https://www.dhs.wisconsin.gov/forms/f4/f44125.docx

C. **Additional Investigation Responsibilities:** Refer to CDC and the Wisconsin Tuberculosis Program guidance to identify high priority patients for LTBI treatment.

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. Provide the patient with appropriate health education and facilitate access to anti-tuberculosis infection treatment. This may include a needs assessment for use of the Wisconsin TB dispensary.

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, Wisconsin Tuberculosis Program: 608-261-6319 (phone), 608-266-0049 (fax), DHSWITBProgram@dhs.wisconsin.gov (email), https://www.dhs.wisconsin.gov/tb/index.htm

C. Wisconsin State Laboratory of Hygiene: 1-608-224-4272

D. Bureau of Communicable Diseases, Communicable Diseases Epidemiology Section: 608-267-9003

VI. RELATED REFERENCES

A. Heymann DL, ed. Tuberculosis and Other Mycobacterial Diseases. In: *Control of Communicable Diseases Manual*. 20th ed. Washington, DC: American Public Health Association, 2015: 637-648.

B. Pickering LK, ed.Tuberculosis. In: *Red Book*: *2015 Report of the Committee on Infectious Diseases*. 30th ed. Elk Grove Village, IL: American Academy of Pediatrics, 2015: 805-831.

C. Centers for Disease Control and Prevention. Latent Tuberculosis Infection: A Guide for Primary Health Care Providers website: https://www.cdc.gov/tb/publications/ltbi/

D. Lewinsohn, D. et al. Official American Thoracic Society/Infectious Diseases Society of America/Centers for Disease Control and Prevention Clinical Practice Guidelines: Diagnosis of Tuberculosis in Adults and Children. *Clin Infect Dis* 2017; 64 (2): 111-115.

E. Centers for Disease Control and Prevention. *Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Settings*. 2005. MMWR 54(No. RR-17). http://www.cdc.gov/mmwr/pdf/rr/rr5417.pdf

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H. Centers for Disease Control and Prevention. *Updated Guidelines for Using Interferon Gamma Release Assays to Detect Mycobacterium tuberculosis Infection — United States, 2010*. *MMWR* 59 (RR-5); 1-25. http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5905a1.htm?s_cid=rr5905a1_e

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J. Council of State and Territorial Epidemiologists (CSTE) position statement 17-ID-09, 2017 CSTE Annual Conference: http://c.ymcdn.com/sites/www.cste.org/resource/resmgr/2017PS/2017PSFinal/17-ID-09.pdf