

Targeted Testing for Latent Tuberculosis Infection

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Introduction

Purpose

Use this section to understand and follow national and Michigan guidelines to conduct targeted testing to screen for latent tuberculosis infection (LTBI).

In the 2005 guideline “Controlling Tuberculosis in the United States: Recommendations from the American Thoracic Society, Centers for Disease Control and Prevention (CDC), and the Infectious Diseases Society of America,” one of the recommended strategies to achieve the goal of reduction of tuberculosis (TB) morbidity and mortality is to identify persons with LTBI who are at risk for progression to TB disease and to treat them with an effective drug regimen.¹



For information on treatment, refer to the Treatment of Tuberculosis Disease and Treatment of Latent Tuberculosis Infection sections.

Reducing LTBI in high-risk populations is an important strategy to control TB. Considering that there are an estimated 9.5–14.7 million persons with LTBI in the United States, continued progress toward eliminating TB in the United States and reducing TB among foreign-born persons requires effective strategies to meet this challenge.² Targeted testing for LTBI is a strategic component of TB control that identifies persons who are at high risk for developing TB and who would benefit by treatment of LTBI, if detected. Persons with increased risk for developing TB include those who have had recent infection with *Mycobacterium tuberculosis* and those who have clinical conditions that are associated with an increased risk for progression of LTBI to active TB.³

Policy

In Michigan:

- Persons who show or report signs and symptoms of TB should be evaluated for TB disease as described in the Diagnosis of Tuberculosis Disease section and reported as suspected cases of TB as described in the “Reporting Tuberculosis” topic in the Surveillance section.
- Contacts should be evaluated as described in the Contact Investigation section.
- Targeted testing for LTBI should be conducted only among persons in groups with identified risk factors for LTBI and/or progression to TB disease.
- For a list of groups at high risk, refer to the “High-Risk Groups” topic in the section on Diagnosis of Latent Tuberculosis Infection.



For roles and responsibilities, refer to the “Roles, Responsibilities, and Contact Information” topic in the Introduction.

State Laws and Regulations

PUBLIC HEALTH CODE (EXCERPT) Act 368 of 1978

333.5111 Rules.

Sec. 5111.

(1) In carrying out its authority under this article, the department may promulgate rules to:

(a) Designate and classify communicable, serious communicable, chronic, other noncommunicable diseases, infections, and disabilities.

(b) Establish requirements for reporting and other surveillance methods for measuring the occurrence of diseases, infections, and disabilities and the potential for epidemics. Rules promulgated under this subdivision may require a licensed health professional or health facility to submit to the department or a local health department, on a form provided by the department, a report of the occurrence of a communicable disease, serious communicable disease or infection, or disability. The rules promulgated under this subdivision may require a report to be submitted to the department not more than 24 hours after a licensed health professional or health facility determines that an individual has a serious communicable disease or infection.

(c) Investigate cases, epidemics, and unusual occurrences of diseases, infections, and situations with a potential for causing diseases.

(d) Establish procedures for control of diseases and infections, including, but not limited to, immunization and environmental controls.

(e) Establish procedures for the prevention, detection, and treatment of disabilities and rehabilitation of individuals suffering from disabilities or disease, including nutritional problems.

(f) Establish procedures for control of rabies and the disposition of nonhuman agents carrying disease, including rabid animals.

(g) Establish procedures for the reporting of known or suspected cases of lead poisoning or undue lead body burden.

(h) Designate communicable diseases or serious communicable diseases or infections for which local health departments are required to furnish care including, but not limited to, [tuberculosis](#) and venereal disease.

(i) Implement this part and parts 52 and 53 including, but not limited to, rules for the discovery, care, and reporting of an individual having or suspected of having a

communicable disease or a serious communicable disease or infection, and to establish approved tests under section 5125 and approved prophylaxes under section 5127.

(2) The department shall promulgate rules to provide for the confidentiality of reports, records, and data pertaining to testing, care, treatment, reporting, and research associated with communicable diseases and serious communicable diseases or infections. The rules shall specify the communicable diseases and serious communicable diseases or infections covered under the rules and shall include, but are not limited to, hepatitis B, venereal disease, and [tuberculosis](#). The rules shall not apply to the serious communicable diseases or infections of HIV infection, or acquired immunodeficiency syndrome. The department shall submit the rules for public hearing under the administrative procedures act of 1969 by November 20, 1989.

History: 1978, Act 368, Eff. Sept. 30, 1978 ;-- Am. 1988, Act 491, Eff. Mar. 30, 1989 ;-- Am. 1989, Act 174, Imd. Eff. Aug. 22, 1989 ;-- Am. 1994, Act 200, Imd. Eff. June 21, 1994

Popular Name: Act 368

Admin Rule: R 325.60 and R 325.171 et seq. of the Michigan Administrative Code.

333.5117 Individual with serious communicable disease or infection; order authorizing care; report; authority not restricted; financial liability for care.

Sec. 5117.

(1) A local health department that knows that an individual who has a serious communicable disease or infection including, but not limited to, [tuberculosis](#) or venereal disease, but not including HIV infection and acquired immunodeficiency syndrome, regardless of the individual's domicile, is in the local health department's jurisdiction and requires care, immediately shall furnish the necessary care in accordance with requirements established by the department pursuant to section 5111(h). The local health department shall issue an order authorizing the care.

(2) The local health department promptly shall report the action taken under this section to the county department of social services of the individual's probable place of domicile.

(3) This section does not restrict the authority of the local health department in furnishing care to the individual, pending determination by the local health department or, upon its request, by the county department of social services of the probable place of domicile of the individual.

(4) Financial liability for care rendered under this section shall be determined in accordance with part 53.

History: Add. 1988, Act 491, Eff. Mar. 30, 1989 ;-- Am. 1994, Act 200, Imd. Eff. June 21, 1994

Popular Name: Act 368

Program Standards

Taken from Recommendations of the Michigan Advisory Committee for the Elimination of Tuberculosis (MI-ACET) March 2003

Michigan's Key Recommendations

- ⌚ A positive TB skin test result in Michigan shall be based on the Centers for Disease Control and Prevention (CDC) guidelines.
- ⌚ International students, temporary professional workers, vocational workers, [international adoptees](#) and other persons arriving from countries with a high burden of TB disease, shall be tested for Latent TB Infection (LTBI).
- ⌚ Health care professionals who administer and read tuberculin skin tests (TST), shall achieve certification through the TB skin test training course as identified by MDCH.
- ⌚ MDCH will collaborate with the Michigan Department of Energy, Labor and Economic Growth (MDELEG) and other agencies in establishing rules for skin testing in special populations.
- ⌚ Physicians, laboratories, and other health care professionals will report all cases of active and suspected TB as required by Michigan's Public Health Code.
- ⌚ Directly Observed Therapy (DOT) is the standard of care for the management of all active cases of TB and selected high-risk individuals with LTBI.
- ⌚ Testing for Human Immunodeficiency Virus (HIV) shall be performed on all active cases of TB.
- ⌚ Accredited laboratories in the State of Michigan will comply with MDCH laboratory recommendations for TB specimen submission and testing.
- ⌚ Local public health departments will utilize their authority in investigations and mandates for treatment or evaluation for TB as listed in the Public Health Code (Act 368, P.A. 1978, as amended, Section 333.5201-5207 of the Michigan Compiled Laws).
- ⌚ Local public health departments shall follow MDCH recommendations regarding the U.S. Public Health Service notification system for identifying and evaluating immigrants and refugees who may be at risk for LTBI or TB disease.
- ⌚ Employers whose workers are at greater risk for exposure to TB than the general population (health care facilities, correctional institutions, long-term care facilities, homeless shelters, and drug-treatment centers) shall comply with the Michigan Occupational Safety and Health Administration (MIOSHA) directives.

Targeted TB Skin Testing for LTBI

Targeted testing for TB is done to identify persons at high risk for TB disease who would benefit from treatment for latent TB infection (LTBI). Clinicians should give a TST to high-risk persons as part of their routine evaluation. QuantiFERON® TB Gold, a new blood test for identification of LTBI has recently been approved by the Food and Drug Administration (FDA). Recommendations for its use in select high-risk populations have been established by the CDC. Institutional testing is recommended for the staff of health care facilities, correctional facilities, as well as for the staff and residents of long-term care institutions where TB is found. TB testing programs for high-risk groups should be based on local epidemiology in consultation with MDCH. In Michigan, the proportion of foreign-born TB cases is increasing. A key MI-ACET recommendation is that foreign-born persons who come to the United States with a non-resident visa status, (international students, temporary professional workers, and vocational workers) shall receive testing for LTBI upon arrival at their Michigan location as a condition for participation in the program for which they are sponsored.

Guidelines for using the QuantiFERON®-TB Gold Test for Diagnosing LTBI

<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5415a4.htm>

Targeted Tuberculin Testing and Treatment of Latent Tuberculosis Infection - MMWR 2000; 49 (No. RR-6)

<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4906a1.htm>

Screening for Tuberculosis and Tuberculosis Infection in High-Risk Populations (ACET) - MMWR 1995; 44 (No. RR-11)

<http://www.cdc.gov/mmwr/preview/mmwrhtml/00038873.htm>

MI-ACET recommends TST certification. The Mantoux TST will be applied and read by designated staff that have received training and achieved certification by completion of the TST Workshop. This training includes, but is not limited to: how to apply a TST using 5 tuberculin units of purified protein derivative (PPD), how to read a TST, how to interpret a TST result, and supervised training in application and measuring of the skin test results. For more information on TST certification, contact the MDCH TB Program at (517) 335-8165.

Michigan health care providers will follow the CDC guidelines for definition of a positive skin test result, and no longer use the measurement of ≥ 10 mm as a positive without risk factors. The following will be considered positive in Michigan as of this publication:

≥ 5 mm is classified as positive in:

HIV-positive persons

Recent contacts of a TB case

Persons with fibrotic changes on chest x-ray consistent with old healed TB

Patients with organ transplants and other immunosuppressed patients

≥ 10 mm is classified as positive in:

Recent arrivals from high-prevalence countries

Injection drug users

Residents and employees of high risk congregate settings
Mycobacteriology laboratory personnel
Persons with clinical conditions that place them at high risk
Children < 4 years of age, or children and adolescents exposed to adults in high-risk categories.

≥15 mm is classified as positive in persons with no known risk factors for TB

TST information can be found at in Chapter 3 of the Interactive Core Curriculum on Tuberculosis:

http://www.cdc.gov/tb/webcourses/CoreCurr/TB_Course/Menu/frameset_internet.htm

The MDELEG requires that certain groups be screened as a condition of employment. These requirements are listed in appendix D. MIOSHA also has requirements (GISHD-COM-05-2R2) for testing as part of a TB control program in health care settings, drug treatment centers, homeless shelters, and correctional facilities.

http://www.dleg.state.mi.us/wsh/docs/inst/gishd_com_05_2r2.doc

When to Conduct Targeted Testing

Targeted testing programs should be conducted only among groups at high risk, and testing should be discouraged for groups at low risk.⁴ High-risk groups include persons with increased risk for developing tuberculosis (TB) and those who have clinical conditions that are associated with an increased risk for the progression of latent TB infection (LTBI) to TB disease.



For a summary of the TB classification numbers, refer to the “Tuberculosis Classification System” topic in the Surveillance section.



Factors that identify persons at high risk of LTBI infection and/or of progression to TB disease are listed in the “High-Risk Groups” topic in the section on Diagnosis of Latent Tuberculosis Infection.



Evaluate high-risk patients for LTBI as specified in the Diagnosis of Latent Tuberculosis Infection section.



Offer treatment of LTBI to infected persons, irrespective of age, who are considered to be at high risk for developing active TB.⁵ See the Treatment of Latent Tuberculosis Infection section.

Approaches to Increasing Targeted Testing and Treatment of Latent Tuberculosis Infection

The Centers for Disease Control and Prevention (CDC) describes two approaches to increasing targeted testing and treatment of LTBI. To plan and implement programs for targeted testing and treatment of LTBI, follow the recommended approaches outlined below.⁶

One approach is to promote clinic-based testing of persons who are under a clinician’s care for a medical condition (e.g., human immunodeficiency virus [HIV] infection or diabetes mellitus) that also confers a risk for acquiring TB. This approach depends on a person’s risk profile for TB.⁷

The other approach is to establish specific programs that target a subpopulation of persons who have a high prevalence of LTBI or who are at high risk for acquiring TB disease if they have LTBI, or both. This approach requires identifying the subpopulations or areas with high TB risk through epidemiologic analysis and profiling.⁸



For information on the system for prioritizing persons for targeted testing, refer to “Controlling Tuberculosis in the United States: Recommendations from the American Thoracic Society, CDC, and the Infectious Diseases Society of America” (*MMWR* 2005;54[No. RR-12]:40–42) at this hyperlink: <http://www.cdc.gov/mmwr/PDF/rr/rr5412.pdf> .



For assistance in planning targeted testing, contact the TB Program Michigan Department of Community Health at (517) 335-8165.

Screening for Latent Tuberculosis Infection in Facilities

Screening for LTBI should be conducted based upon each facility’s risk for transmission of *Mycobacterium tuberculosis* (i.e., low risk, medium risk, or potential for ongoing transmission),⁹ as determined in its TB risk assessment (both the initial baseline assessment and periodic reassessments).



Risk assessment protocols and elements are outlined in the CDC’s “Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Health-care Settings, 2005” (*MMWR* 2005;54[No. RR-17]) at this hyperlink: <http://www.cdc.gov/mmwr/pdf/rr/rr5417.pdf> .



In Michigan, facilities such as inpatient settings, outpatient settings, TB clinics, settings in correctional facilities in which health care is delivered, settings in which home-based health-care and emergency medical services are provided, and laboratories handling clinical specimens that might contain *M. tuberculosis* should follow these Occupational Safety and Health Administration (OSHA) and/or state requirements found at this hyperlink: http://www.dleg.state.mi.us/wsh/docs/inst/gishd_com_05_2r2.doc

Screening determines if a person should be evaluated for LTBI or TB disease by asking questions to gather information about whether the person has signs or symptoms of TB disease, belongs to a group at high risk for LTBI or (if infected) for progression to TB disease, or has a prior positive tuberculin skin test (TST).

References

- ¹ ATS, CDC, IDSA. Controlling tuberculosis in the United States: recommendations from the American Thoracic Society, CDC, and the Infectious Diseases Society of America. *MMWR* 2005;54(No. RR-12):15.
- ² ATS, CDC, IDSA. Controlling tuberculosis in the United States: recommendations from the American Thoracic Society, CDC, and the Infectious Diseases Society of America. *MMWR* 2005;54(No. RR-12):40.
- ³ CDC. Targeted tuberculin testing and treatment of latent tuberculosis infection. *MMWR* 2000;49(No. RR-6):1.
- ⁴ CDC. Targeted tuberculin testing and treatment of latent tuberculosis infection. *MMWR* 2000;49(No. RR-6):1–2.
- ⁵ CDC. Targeted tuberculin testing and treatment of latent tuberculosis infection. *MMWR* 2000;49(No. RR-6):1.
- ⁶ ATS, CDC, IDSA. Controlling tuberculosis in the United States: recommendations from the American Thoracic Society, CDC, and the Infectious Diseases Society of America. *MMWR* 2005;54(No. RR-12):40.
- ⁷ ATS, CDC, IDSA. Controlling tuberculosis in the United States: recommendations from the American Thoracic Society, CDC, and the Infectious Diseases Society of America. *MMWR* 2005;54(No. RR-12):40.
- ⁸ ATS, CDC, IDSA. Controlling tuberculosis in the United States: recommendations from the American Thoracic Society, CDC, and the Infectious Diseases Society of America. *MMWR* 2005;54(No. RR-12):40.
- ⁹ CDC. Guidelines for preventing the transmission of *Mycobacterium tuberculosis* in health-care settings, 2005. *MMWR* 2005;54(No. RR-17):10.