

# Chapter 11

## Targeted Testing for Latent Tuberculosis Infection

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# Introduction

## Purpose

Use this section to understand and follow national and Nevada 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.<sup>1</sup>



For information on treatment, refer to Chapter 4, *Treatment of Tuberculosis Disease*, and Chapter 6, *Treatment of Latent Tuberculosis Infection*.

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.<sup>2</sup> 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.<sup>3</sup>

## Policy

In Nevada:

- Persons who show or report signs and symptoms of TB should be evaluated for TB disease as described in Chapter 3, *Diagnosis of Tuberculosis Disease*, and reported as suspected cases of TB as described in the “Reporting Tuberculosis” section of Chapter 11, *Surveillance*, pages 10.7 to 10.14.
- Contacts to active TB cases, as well as contacts to LTBI in children less than 5 years of age, should be evaluated as described in *Contact Investigation*, Chapter 8.
- Testing in certain facilities and certain employment settings is required by regulation and described in Chapter 1, Introduction, section “Nevada Laws and Regulations for Tuberculosis Control,” pages 1.9 to 1.10.
- Targeted testing for LTBI should be conducted only among persons in groups with identified risk factors for LTBI and/or progression to TB disease.

## High-Risk Groups

Certain factors identify persons at high risk for tuberculosis (TB) infection and/or for progression to TB disease. Persons in the high-risk groups listed in Table 1: “Persons at High Risk for Tuberculosis Infection and Progression to Tuberculosis Disease” are candidates for tuberculin skin testing or TB screening in Nevada.

Persons with risk factors from both columns may be at much higher risk than those with risk factors in only one column. For example, an individual born in a high-TB-prevalence country with HIV infection is at much higher risk of having active TB than a US-born individual with HIV infection.

**Table 1: Persons at High Risk for Tuberculosis Infection and Progression to Tuberculosis Disease\***

Groups for screening	Description of groups
<b>Close Contacts of Active or Suspect TB Disease</b> (AFB positive pulmonary or laryngeal TB)	Share same household, share same enclosed environments
<b>Infants, Children, and adolescents</b>	Exposed to High-risk categorized adults
<b>Persons Infected with HIV</b>	HIV positive (TST screening method recommended)
<b>Medical Risk factors</b>	Diabetes mellitus, immunosuppressive therapies (e.g. α TNF antagonists, corticosteroids), organ transplantation, chronic renal failure, leukemias, lymphomas, specific malignancies (carcinoma of head or neck), body weight ≥ 10% below ideal, silicosis, gastrectomy, jejunioileal bypass
<b>Social Risk Factors</b>	Homelessness, alcohol abuse, injection of illicit drugs, non-injection drug abuse
<b>Non-US-born Persons</b>	Recently arrived, within 5 years, from countries that have a high TB incidence or prevalence; children included
<b>Healthcare workers</b>	Serving high-risk clients
<b>Residents and Employees of high-risk congregate settings</b>	Correctional institutions, nursing homes, mental institutions, other long-term residential facilities, shelters for the homeless

\* Adapted from CDC. “Screening for Tuberculosis and Tuberculosis Infection in High-Risk Populations-Recommendations of the Advisory Council for the Elimination of Tuberculosis” (1995). *MMWR* 1995; 44(RR-11):18-34; retrieved at <https://www.cdc.gov/mmwr/preview/mmwrhtml/00038873.htm> .

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## 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. 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 progress of latent TB infection (LTBI) to TB disease.

### 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.<sup>4</sup>

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.<sup>5</sup>

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.<sup>6</sup>



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 Nevada DPBH TB Program at 775-684-5936.

## 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),<sup>7</sup> as determined in their annual 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> .



For additional information on infection prevention and controls in a healthcare or residential facilities, please review the *Healthcare Facilities TB Screening Manual* on the Nevada DPBHTB Program's website at: [http://dpbh.nv.gov/Programs/TB/dta/Publications/Tuberculosis\\_\(TB\)\\_-Publications/](http://dpbh.nv.gov/Programs/TB/dta/Publications/Tuberculosis_(TB)_-Publications/)



For information on Nevada laws and regulations regarding Tb screening activities in other facilities, see [NAC 441A.370-380](#).

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 had a prior positive TB test.

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## References

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- <sup>1</sup> 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.
- <sup>2</sup> 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.
- <sup>3</sup> CDC. Targeted tuberculin testing and treatment of latent tuberculosis infection. *MMWR* 2000;49(No. RR-6):1.
- <sup>4</sup> 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.
- <sup>5</sup> 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.
- <sup>6</sup> 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.
- <sup>7</sup> CDC. Guidelines for preventing the transmission of *Mycobacterium tuberculosis* in health-care settings, 2005. *MMWR* 2005;54(No. RR-17):10.