



# Nevada State Health Division TECHNICAL BULLETIN



**TOPIC:** Testing for TB Disease and Latent Infection

**SECTION/PROGRAM/CONTACT:** Office of Epidemiology / Tuberculosis Program /  
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**TO:** All Healthcare Providers

## Screen Patients for Tuberculosis

Nevada has identified an increase in the number of TB cases among high risk individuals (e.g. Foreign-birth or extended travel abroad, previous contact to TB case, previous LTBI diagnosis or treatment, incarceration, homelessness, or IV drug use) who also have immunocompromising conditions or those receiving medications that may compromise the immune system.

The purpose of this technical bulletin is to encourage TB awareness among this high risk population and recommend appropriate testing for these individuals.

The Nevada State Health Division (NSHD) is recommending that public health providers and clinicians consider screening for *M. tuberculosis* infection prior to implementing treatment regimens for patients who may become immunocompromised.

In 2008 and 2009 (to date), 23 percent of all active TB cases in Nevada either have an immunocompromising medical condition or are receiving medications that induce an immunosuppressed status.

Number of Persons in Nevada with an Immunosuppressive Condition and a Co-Morbid Diagnosis of TB:	2009 (As of 9/24/2009)	2008
Diabetes	13	15
Cancer pt. with a chemotherapy treatment regimen	5	2
Rheumatoid Arthritis receiving TNF	2	2
HIV	2	3
Other Autoimmune Diseases receiving steroidal therapy	1	1

The NSHD recommends that health-care providers perform a comprehensive clinical evaluation for *M. tuberculosis* on all patients who have medical risk factors<sup>1</sup>, or will be taking anti-tumor necrosis factor agents (TNF-alpha inhibitors)<sup>2</sup>, have T-cell deficiencies or dysfunction<sup>3</sup>, or are receiving

<sup>1</sup> <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4906a1.htm>

<sup>2</sup> Wallis RS *et al.* (2004) Granulomatous infectious diseases associated with tumor necrosis factor antagonists. Clin Infect Dis 38, [Erratum] Clin Infect Dis 39

<sup>3</sup> [http://www.merck.com/media/mmpe/pdf/Table\\_052-7.pdf](http://www.merck.com/media/mmpe/pdf/Table_052-7.pdf)

treatments for cancer or blood disorders which may leave the immune system severely weakened and substantially increase their risk for TB disease. These patients should be screened in settings where they receive primary or subspecialty care (e.g., infectious disease, immunology, endocrinology, hematology/oncology, nephrology, rheumatology, pulmonology, and gastroenterology) or on admission to a hospital.<sup>4</sup> A TB evaluation should include a comprehensive history (e.g. Foreign-birth or extended travel abroad, previous contact to TB case, previous LTBI diagnosis or treatment, incarceration, homelessness, or IV drug use), an evaluation for signs and symptoms (i.e. night sweats, weight loss, cough and hemoptysis), a physical examination, and when applicable, a TB screening test [tuberculin skin test (TST) or Interferon-gamma (INF- $\gamma$ ) release assay (IGRA)].<sup>5</sup> If the TST or IGRA result is positive or if clinical or epidemiologic suspicion exists, perform a chest radiograph (CXR). In mildly immunocompromised TB patients, the appearance on the CXR is often classical with cavities and upper lobe infiltrates, while in severe immunocompromised TB patients, the appearance is often atypical or extrapulmonary.

The effects of impaired immunity are likely to result in a high rate of false-negative TB test results.<sup>6</sup> Despite the limitations of TB screening tests in this population, early detection and treatment of LTBI is imperative. Patients should be tested at least once for a baseline result and rescreened periodically if the patient's history indicates they have a high likelihood of exposure. Interpreting clinical test results for LTBI among immunocompromised patients must be done utilizing each patient's personal epidemiological information. Although the TST and IGRA tests are helpful when positive, a negative result does not rule out infection. Therefore, it is recommended that clinicians be extremely vigilant for signs and symptoms of TB disease.

As the development of disease in this vulnerable group may be associated with more morbidity and mortality than normal and TB symptoms are often attributed to the prescribed treatment regimen, early and possibly sequential TB screening for a dual diagnosis state is recommended.

Suspected TB disease in Nevada is a reportable condition. Reporting forms can be found at: <http://health.nv.gov/Epidemiology/MorbidityForm-interactive.pdf>

<sup>4</sup> CDC Targeted Tuberculin Testing and Treatment of Latent Tuberculosis Infection, United States. *MMWR*, June 09, 2000 / 49(RR06);1-54

<sup>5</sup> Joseph Keane, Barry Bresnihan. *TB Reactivation During Immunosuppressive Therapy: Point-of-entry Testing*. St. James's Hospital and Trinity College Dublin, Ireland, St. Vincent's University Hospital, Dublin, Ireland.

<sup>6</sup> J. Keane. *TNF-blocking agents and tuberculosis: new drugs illuminate an old topic*. *Rheumatology* 2005;44:714-720 available at: <http://rheumatology.oxfordjournals.org/cgi/reprint/44/6/714>

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