

**To:** Vermont Health Care Providers and Health Care Facilities  
**Date:** December 3, 2024  
**From:** Laura Ann Nicolai, MPH, Deputy State Epidemiologist

## **Testing for Tuberculosis**

### **Summary**

Since October 21, four cases of active pulmonary Tuberculosis (TB) disease have been reported in Vermont. The cases are not linked and there is no evidence that TB infection occurred in Vermont. People identified as close contacts to active cases and people with increased risk for TB are recommended to receive [testing for TB infection](#). Diagnosing and treating people with latent TB infection (LTBI) prevents the development of TB disease. However, before initiating treatment for LTBI, TB disease must be excluded.

### **Free, in-person training: Diagnosis and Management of Latent TB Infection**

Register for a training at the Delta Hotel in South Burlington on Thursday, December 5 from 4:00 p.m. to 7:00 p.m. Dinner will be served. This is a CME accredited sponsored activity by the [Global Tuberculosis Institute](#) and the Vermont Department of Health. [Click here to register for the training.](#)

### **Requested Actions**

- **Test for TB Infection** - Test patients with risk factors for infection with *M. tuberculosis* and those who are at high risk for developing TB disease once infected.
- **Evaluate for TB Disease** - All patients with a positive test result for TB infection should be evaluated for active TB disease before starting treatment for LTBI.
- **Treat for LTBI if TB Disease is Excluded** - LTBI treatment regimens are outlined in the [2020 Guidelines for the Treatment of Latent Tuberculosis Infection](#).

### **Test for TB Infection**

- Test patients with risk factors for infection with *M. tuberculosis* and those who are at high risk for developing TB disease once infected. Testing activities should be done with a plan for follow-up care to evaluate and treat all individuals diagnosed with LTBI or TB disease.

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- Household contact or recent exposure (based on Health Department evaluation) to someone with TB disease. Retest contacts who have an initial negative result 8-10 weeks after last exposure due to time needed to develop an immune response.
- Birth, residence, or extended travel to a [country with increased TB prevalence](#), regardless of year of arrival/travel.
- Current or planned immunosuppression (e.g., biologic response modifiers such as TNF- $\alpha$  antagonists, systemic corticosteroids equivalent to  $\geq 15$  mg prednisone/day, organ transplantation, cancer chemotherapy, or HIV infection). Other medical conditions that increase the risk of progression to TB disease include poorly controlled diabetes, chronic renal failure, IV drug use, and lymphoma or leukemia.
- Current or former resident of a high-risk congregate setting, considering local epidemiology. Vermont is a low incidence state for TB, although residence in homeless shelters and correctional facilities in other states is considered a risk factor.
- Testing is not recommended for those without risk factors. False positives can be expected from testing low-risk people.
- The FDA has approved two methods of immunologic testing for TB infection: interferon-gamma release assays (IGRAs) and the tuberculin skin test (TST).
- Two IGRAs are currently available for use in the United States: T-SPOT<sup>®</sup>.TB (TSpot) and QuantiFERON<sup>®</sup>-TB Gold Plus (QFT-Plus). Both tests require heparin-anticoagulated whole blood.
- IGRAs offer greater specificity than a TST in people who were BCG vaccinated or who have nontuberculous mycobacterial infections. Bacille Calmette-Guérin (BCG) vaccine is administered at birth in many countries but not the U.S. For this reason, IGRAs are preferred for most non-U.S.-born patients who may have received BCG vaccination.
- Skin testing requires two health care appointments: the first to administer the test and the second to measure the reaction 2 to 3 days later.
- In choosing which test to use, consider the patient's history of BCG, age, and ability to return for a second appointment.
- People with active TB disease can have negative test results for infection. **These tests should not be used to exclude active TB disease in someone with signs or symptoms consistent with active disease.** TB disease is diagnosed by medical history, physical examination, chest x-ray, and other laboratory tests, including culture.
- TST results can be expected to remain positive during and after treatment. Positive IGRA test results are less durable than positive TST results.

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### Evaluate for TB Disease

- All patients with a positive test result for TB infection should be evaluated for active TB disease before starting treatment for LTBI. To exclude active TB disease, the clinical evaluation should include a medical history, symptom review, focused physical examination, and chest radiography. Bacteriologic testing may be needed if indicated based on the presence of TB symptoms or initial evaluation.
- Assess for the following TB symptoms: prolonged cough (>2-3 weeks); hemoptysis; fever or chills; night sweats; unintended weight loss; loss of appetite; fatigue; chest pain; and other symptoms or signs of extrapulmonary TB, depending upon the site affected.
  - Physical examination should include the oropharynx, neck, lungs, abdomen, and other organ systems depending upon any TB symptoms. Check especially for enlarged lymph nodes.
  - The CXR should be interpreted with a high index of suspicion for TB, especially in patients who have TB symptoms or who were recently exposed.
- If the patient has pulmonary TB symptoms or physical or radiographic findings suspicious for active TB disease, obtain three sputum specimens (5-10 mL) for acid-fast bacilli (AFB) smear and culture, including at least one early morning specimen and one-two specimens tested by nucleic acid amplification test (NAAT). If the patient has CXR abnormalities or pulmonary symptoms and is unable to expectorate sputum, collect specimens by sputum induction, ensuring that airborne infection isolation precautions are observed during sputum collection. Order other bacteriologic studies as needed for extrapulmonary TB.
- The [Vermont Department of Health Laboratory](#) performs QFT-Plus testing for infection and no-cost diagnostic testing (smear, NAAT-including rifampin resistance, and culture).
- **Report all suspected cases of TB disease to the Health Department Infectious Disease Epidemiology program immediately at 802-863-7240, option 2. Report LTBI within 24 hours.**

### Treat for LTBI if TB Disease is Excluded

- At the completion of pretreatment clinical evaluation, if a patient with a positive test result for LTBI is asymptomatic, and the CXRs and other diagnostic test results are normal, then active TB disease is excluded, LTBI is diagnosed, and the patient should be considered for LTBI treatment.

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- Untreated, recent (within the prior 2 years) TB infection is a significant risk factor for progression to active TB disease.
- Patient age and length of time since infection should not be a barrier to LTBI treatment.
- Consultation is recommended for diagnosis of TB disease or LTBI in complex clinical situations (e.g., those on or about to start immunosuppressive therapy) and when test results are inconsistent with the clinical picture. Call the Health Department TB program at 802-863-7240, option 2 to arrange for a consultation. Patients can also be referred to the University of Vermont Medical Center (UVMMMC) infectious disease clinic for an in-person or telemedicine consultation.
- The Health Department provides treatment medications at no cost for uninsured patients. Contact the TB Program by calling 802-863-7240, option 2.

### **Additional Resources**

- [Clinical Testing and Diagnosis for Tuberculosis](#) (CDC)
- [Testing and Treatment of Latent Tuberculosis Infection in the United States: A Clinical Guide for Health Care Providers and Public Health Programs, 2024](#) (NTCA)
- [American Thoracic Society/Infectious Diseases Society of America/CDC Clinical Practice Guidelines: Diagnosis of Tuberculosis in Adults and Children](#) (CID)
- [Latent TB Infection: A Guide for Primary Health Care Providers](#) (CDC)
- [Think. Test. Treat TB](#) (CDC)
- [Core Curriculum on Tuberculosis: What the Clinician Should Know](#) (CDC)
- [TB Resources for Health Care Professionals and Partners](#) (VDH)
- [TB Education and Training Resources](#) (GTBI)

If you have any questions, please contact Laura Ann Nicolai at: [LauraAnn.Nicolai@vermont.gov](mailto:LauraAnn.Nicolai@vermont.gov)

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