

Screening and Testing for Tuberculosis
Virginia Department of Health TB Program - 2023



Latent TB. Active Concern.
Tuberculosis Program

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Introduction

The process of evaluation for tuberculosis (TB) will vary for each individual. Evaluation may be as simple as answering TB risk assessment questions and completing a symptom review, or may be more extensive requiring TB tests such as an interferon gamma release assay (IGRA), tuberculin skin test (TST), and/or chest radiograph and microbiologic examination of sputum. Evaluation needs and requirements are based on individual risk factors, the setting in which a person lives, works, or spends time, and regulatory/statutory requirements. It is extremely important to remember that any evaluation for TB does not provide protection against future infection or disease. It only provides information on an individual's current TB status or risk.

Types of evaluations

TB screening - A TB screening is a TB risk assessment (see below) and a symptom review to assess for signs and symptoms of TB disease. The screening may be conducted by a licensed healthcare provider (MD, PA, NP, RN, LPN). Further evaluation, if indicated, should also be performed by a licensed healthcare provider (MD, PA, NP, RN, LPN), however an RN or an LPN conducting evaluations must have an order by healthcare personnel with prescriptive authority consistent with Virginia professional practice acts for [medicine](#) and [nursing](#).

TB risk assessment – The TB risk assessment is a series of questions designed to determine an individual's risk for exposure to TB and/or risk for progression to TB disease, if infected. These questions may be asked by a licensed healthcare provider (MD, PA, NP, RN, LPN). If a risk factor for TB is identified and further evaluation is necessary, this should be performed by a licensed healthcare provider (MD, PA, NP, RN, LPN), however an RN or an LPN conducting evaluations must have an order by healthcare personnel with prescriptive authority consistent with Virginia professional practice acts for [medicine](#) and [nursing](#).

Testing for TB infection – There are two types of tests for TB infection: the TB skin test and the TB blood test. A healthcare provider will determine which test is most appropriate for each individual.

Tuberculin skin test – TST is an intradermal injection of tuberculin purified protein derivative. The skin test reaction must be read 48-72 hours after placement. For registered nurses or LPNs to perform this task, an individual order or standing protocol must be in place, signed by healthcare personnel with prescriptive authority ([§ 54.1-3408. Professional use by practitioners](#), paragraph G).

Blood tests for TB infection – An interferon gamma release assay detects the presence of TB infection by measuring the immune response to TB proteins in whole blood. IGRAs approved by the U.S. Food and Drug Administration (FDA) and available in the United States include QuantiFERON®-TB Gold Plus (QFT-Plus) and T-SPOT® TB (T-Spot). These tests may be used in place of the tuberculin skin tests and are preferred for persons aged two years and older.

Chest radiograph (x-ray) – Individuals with symptoms of TB disease or those with a new positive test for TB infection should obtain a chest radiograph.

Additional tests – Based on the evaluation findings, a healthcare provider with prescriptive authority will determine what additional testing is needed, such as smear and culture of sputum.

Those conducting TB screening and/or testing may design their own screening forms or adopt the Virginia TB Risk Assessment or Virginia TB Risk Assessment for Children Under 6 Years Old. These forms and user guides can be found on the VDH TB website:

www.vdh.virginia.gov/tuberculosis/screening-testing/.

Who should be screened for TB?

Groups that are at high risk of TB infection or progression to TB disease if infected should be screened.

Groups with high risk for exposure to or infection with TB:

- Close contacts of people with known or presumed infectious TB disease
- Non-U.S.-born people, including children, who were born in or spent time in countries where TB disease is common. Lists of high burden TB countries are available on the Screening and Testing page of the VDH TB website:
<https://www.vdh.virginia.gov/tuberculosis/screening-testing/>.
- Residents and employees of high-risk congregate settings (e.g., correctional institutions, homeless shelters, nursing homes, residential mental health facilities, other long-term residential facilities)
- Healthcare personnel who serve high-risk groups
- Infants, children, and adolescents exposed to adults in high-risk categories for exposure to TB

Groups with high risk for progression to TB disease if infected:

- People living with HIV
- Children younger than five years of age
- People infected with TB within the last two years
- People with a history of untreated or inadequately treated TB disease
- People who use substances (such as injection drug use)
- People who have medical risk factors known to increase the risk for TB disease once infected such as:
 - Receiving immunosuppressive therapy
 - Silicosis, chronic renal failure, leukemia, or cancer of the head, neck, or lung
 - Diabetes mellitus
 - Gastrectomy or jejunioileal bypass
 - Low body weight

People living with HIV

HIV is the most powerful risk factor for progression to active TB disease, if infected. Screening and testing for TB among people living with HIV is a high priority. TB screening and testing (with a TST or IGRA) should occur at the initial diagnosis of HIV. All individuals with a positive TST or IGRA and/or TB-like symptoms should undergo a chest radiograph and/or sputum collection to exclude active TB disease. Those with latent TB infection (LTBI) should receive preventive therapy. There is no indication for preventive therapy in the absence of a positive test unless the individual is a close contact of a known case of TB disease. Annual TB screening for new risk factors for TB exposure or new risks for progression to TB disease is recommended for people living with HIV.

TB evaluations in healthcare settings for healthcare personnel

[OSHA directive number CPL 02-02-078](#) defines a healthcare setting as any setting in which healthcare is delivered and workers might share air space with persons with TB disease or come in contact with clinical TB specimens. This term is broader than the term “facility,” which refers to a building or set of buildings. Examples of healthcare settings are inpatient settings (e.g., patient rooms), outpatient settings (e.g., TB treatment facilities and dental clinics), and non-traditional facility-based settings (e.g., medical settings in correctional facilities).

OSHA guidelines state that people working in healthcare settings should be screened for TB.

Healthcare personnel (HCP) – According to recommendations from the Centers for Disease Control and Prevention (CDC) and national standards, all newly employed healthcare personnel should have baseline screening and testing for TB infection prior to entering the work site. This includes a TB risk assessment, symptom screen and a test for the presence of TB infection (two-step TST or a single IGRA blood test). Based on the results of this testing, additional evaluation may be required prior to the granting of employment clearance. Employees should not be permitted to work until the TB evaluation is completed. Treatment for LTBI is strongly encouraged for all healthcare personnel.

Healthcare personnel with a documented prior positive test for TB infection and documented normal chest radiograph performed after the positive test for TB infection do not require repeat TB testing or a repeat chest radiograph unless they are symptomatic. These individuals need a TB screening upon employment and should be offered and strongly encouraged to complete LTBI treatment, if previously untreated. If they elect to be treated for TB infection, a chest radiograph generally should be performed within three months of treatment initiation.

Annual TB testing of healthcare personnel is not recommended unless there is a known exposure, ongoing transmission at a healthcare facility, or the healthcare personnel is at increased occupational risk for TB exposure. Healthcare personnel with untreated LTBI should receive an annual TB symptom screen and risk assessment and be encouraged to complete LTBI treatment.

Healthcare facilities should consider using annual TB screening and testing for certain groups at increased occupational risk for TB exposure (e.g., pulmonologists or respiratory therapists) or in certain settings if transmission has occurred in the past (e.g., emergency departments). Facilities should work with the local health department to make these decisions.

Facilities should educate all front-line supervisors and managers about symptoms for TB disease so that any symptomatic individuals in the workplace are promptly identified and referred for immediate evaluation regardless of any periodic screening programs in place.

All healthcare personnel should receive TB education annually. TB education should include information on TB risk factors, the signs and symptoms of TB disease, and TB infection control policies and procedures.

TB evaluations in specific settings

For any given setting, several factors such as national standards and statutory and regulatory requirements may influence the type of evaluation needed as well as the frequency of the evaluation.

If TB evaluation is required for employment, the evaluation should be completed in full prior to the start of work. Although the health department assists agencies in determining regulatory requirements, it does not mandate evaluation requirements for specific settings.

Certain settings and regulations allow and accept the results of a TB screening without further required testing. However, regardless of regulations, individuals with positive findings during a TB screening need additional evaluation. Further evaluation, if indicated, should be performed by a licensed healthcare provider (MD, PA, NP, RN, LPN), however an RN or an LPN conducting evaluations must have an order by healthcare personnel with prescriptive authority consistent with Virginia professional practice acts for [medicine](#) and [nursing](#). Employment clearance should not be provided until any indicated additional testing is completed, and it is safe for the individual to be present at the work site.

Long term care facilities (skilled nursing facilities, nursing homes) - Licensed by Virginia Department of Health Office of Licensure and Certification

Employees - see Healthcare settings section above

Residents - Based on the [Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Settings, 2005](#), new admissions to long term care facilities should receive a TB screening. If symptoms or risk is identified, TB testing with a TST or IGRA should be completed with further evaluation as needed. Residents with presumptive or confirmed infectious TB disease may only be admitted if a private airborne infection isolation room is

available in the facility, and staff are appropriately trained, and have access to personal protective equipment.

Assisted living facilities - Licensed by Virginia Department of Social Services

The [Code of Virginia § 63.2-100](#) defines an assisted living facility as “any congregate residential setting that provides or coordinates personal and health care services, 24-hour supervision, and assistance (scheduled and unscheduled) for the maintenance or care of four or more adults who are aged, infirm, or disabled and who are cared for in a primarily residential setting...”

Staff and Residents - According to *Standards for Licensed Assisted Living Facilities* [22VAC40-73-250](#) (Staff health records and requirements) and [22VAC40-73-320](#) (Physical examination and report), all staff, residents, and household members coming into contact with residents should complete a risk assessment documenting the absence of tuberculosis in a communicable form. Documentation should be submitted to the facility on or within seven days prior to the first day of work for staff, and prior to coming in contact with residents for household members. The risk assessment should be no older than 30 days. Documentation of risk assessment shall be completed within 30 days of date of admission for residents. Annual TB screening should be completed for staff, household members, and residents. Residents with infectious TB disease may not be admitted to assisted living facilities per [22VAC40-73-310](#) (Admission and retention of residents).

Any staff person who develops chronic respiratory symptoms of three weeks duration shall be evaluated immediately for the presence of infectious tuberculosis. Any staff suspected of having infectious tuberculosis shall not be allowed to return to work or have any contact with the participants and staff of the center until a physician has determined that the staff person is free of infectious tuberculosis. Any staff person and volunteer identified in this subsection who comes in contact with a known case of infectious tuberculosis shall be screened as determined appropriate based on consultation with the local health department.

If symptoms or risk is identified, TB testing with a TST or IGRA should be completed with further evaluation as needed.

Adult day care centers - Licensed by Virginia Department of Social Services

The [Code of Virginia § 63.2-100](#) defines an adult day care center as “any facility that is either operated for profit or that desires licensure and that provides supplementary care and protection during only a part of the day to four or more aged, infirm, or disabled adults who reside elsewhere...”

Staff and Volunteers counted in staff-to-participant ratio - *Standards and Regulations for Licensed Adult Day Care Centers*, [22VAC40-61-180](#) (Staff records and health requirements) requires an assessment for tuberculosis in a communicable form no earlier than 30 days before or no later than seven days after employment or contact with participants. Documentation of this evaluation shall include all pertinent information contained on the Report of Tuberculosis Screening form recommended by Virginia Department of Health. Screening must be repeated annually.

Any staff person and volunteer identified in this subsection who develops chronic respiratory symptoms of three weeks duration shall be evaluated immediately for the presence of infectious tuberculosis. Any staff suspected of having infectious tuberculosis shall not be allowed to return to work or have any contact with the participants and staff of the center until a physician has determined that the staff person is free of infectious tuberculosis. Any staff person and volunteer identified in this subsection who comes in contact with a known case of infectious tuberculosis shall be screened as determined appropriate based on consultation with the local health department.

Participants - [22VAC40-61-260](#) (Physical examination and report) requires a TB screening no earlier than 30 days before admission with additional testing and evaluation if indicated. Subsequent evaluation for TB is required for any participant who comes in contact with a known case of infectious TB or who develops respiratory symptoms of three or more weeks duration.

Any participant identified who develops chronic respiratory symptoms of three weeks duration shall be evaluated immediately for the presence of infectious tuberculosis. Any participant who comes in contact with a known case of infectious tuberculosis shall be screened as determined appropriate based on consultation with the local health department.

Public school employees

All Virginia public school employees are required to be screened, and if needed, tested prior to employment. ([§ 22.1-300. Tuberculosis certificate](#)). There is no state requirement for ongoing periodic screening or testing. Employees should be aware that testing may be required in the event of exposure to an individual with infectious TB disease in a school setting.

Students (preschool, primary/secondary schools, colleges and universities)

The [Code of Virginia § 22.1-270](#) requires children entering public kindergarten or elementary school to have a preschool physical examination completed which includes a TB screening. VDH has developed two risk assessment tools which can be used for screening purposes: one for anyone over the age of six and one

for persons less than six years old. These forms are available on the Screening and Testing page of the VDH TB Program website: <https://www.vdh.virginia.gov/tuberculosis/screening-testing/>. Individuals entering the U.S. through certain programs may have additional requirements for TB screening/testing prior to entrance to the U.S. or soon after arrival. Testing for TB is only indicated if risks are identified with the TB screening. While other settings such as middle/high schools, private schools, preschool and daycare are not outlined in this Code section, TB screening prior to enrollment could be considered. Some school divisions may have specific requirements for screening certain populations and school boards may have adopted policies regarding TB screening and testing of their student population.

VDH TB Program supports the [American College Health Association's recommendations](#) for screening and targeted testing for TB as a key strategy for controlling and preventing infection on college and university campuses. Early detection provides an opportunity to promote the health of affected individuals through prompt diagnosis and treatment while preventing potential spread to others.

Child day centers and family day homes - Licensed by Department of Education

Virginia Regulations [8VAC20-780-160](#) and [8VAC20-800-170](#) require a TB screening be completed within 30 days of employment and prior to contact with children. If symptoms or risk is identified, TB testing with a TST or IGRA should be completed with further evaluation as needed.

Prenatal clinics

While pregnancy does not seem to increase the risk of TB infection or progression to TB disease if infected, all pregnant women entering antenatal care should receive a TB screening. If warranted, a TST or IGRA are safe during pregnancy.

Pregnant women living with HIV or who are known to be close contacts of persons with TB disease should undergo TB testing with a TST or IGRA and receive preventive therapy without delay if positive and TB disease is ruled out.

Facilities licensed by the Department of Behavioral Health Services

Employees - Virginia Regulation [12VAC35-105-510](#) requires that all employees who will have direct contact with individuals receiving services are required to obtain a statement of certification by a qualified licensed practitioner indicating the absence of tuberculosis in a communicable form within 30 days of employment or initial contact with individuals receiving services and be certified as tuberculosis free on an annual basis by a qualified licensed practitioner.

Residents/participants in children's residential settings - Virginia Regulation [12VAC35-46-250](#) requires that each individual submit the results of a screening assessment for tuberculosis annually.

Correctional facilities

According to CDC recommendations and national standards, anyone working with correctional populations should have two-step TST baseline testing for TB infection or a single IGRA blood test prior to entering the work site. Based on the results of this testing, additional evaluation may be required prior to the granting of employment clearance.

In addition, the CDC recommends that all correctional employees be screened and tested annually. Correctional facilities should refer to the MMWR, "Prevention and Control of Tuberculosis in Correctional and Detention Facilities: Recommendations from CDC", for additional information and guidance on TB screening and testing of residents.

(<https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5509a1.htm>).

Medicaid waiver programs

According to Virginia Regulations, such as: [12VAC30-122-340](#), [12VAC30-122-460](#), [12VAC30-122-490](#), [12VAC30-120-930](#), persons providing personal assistance services under certain Medicaid waiver programs must receive a TB screening. VDH recommends a TB screening be completed prior to providing direct service to clients. If persons providing services are considered HCP, VDH recommends TB evaluation in accordance with HCP recommendations.

Employment agencies providing personal care services under Medicaid waiver programs must consider the setting in which services are provided and match the level of screening to the site with the highest level of screening/testing required.

Group homes and other settings/programs

Based on the vulnerability of served populations, workers in other occupations may require TB evaluation prior to employment. The requirement for this evaluation is generally found in state regulations for each program. Regulations governing the vast majority of these programs accept the results of the TB screening without further testing. However, regardless of regulations, individuals found to have positive findings during the TB screening will require additional evaluation as noted above. Further evaluation, if indicated, should also be performed by a licensed healthcare provider (MD, PA, NP, RN, LPN), however an RN or an LPN conducting evaluations must have an order by healthcare personnel with prescriptive authority consistent with Virginia professional practice

acts for [medicine](#) and [nursing](#). Employment clearance should not be provided until the additional testing is completed, and it is safe for the individual to be present at the work site.

Additional considerations

All employers should remain alert for changes to recommendations and regulations concerning the need for TB evaluation of their employees. Employers should also provide copies of the governing regulation to their employees, if requested.

No evaluation for active TB disease is perfect. While extremely rare, it is possible that someone could have infectious TB disease even with a negative TB screening and negative tests for TB. Employers and work settings should remain vigilant for employees and others who appear ill with symptoms of active TB disease. Such individuals should be referred for evaluation by a healthcare provider and be excluded from the work setting until the evaluation is complete and clearance is provided.

For questions not addressed in this document, please consult with your local/state health department, regulatory agency, or legal counsel.

Evidence base

Centers for Disease Control Fact Sheet: Interferon-Gamma Release Assays (IGRAs) – Blood Tests for TB Infection. November 2011.

<https://www.cdc.gov/tb/publications/factsheets/testing/IGRA.pdf>

Code of Virginia

- § 22.1-270. Preschool physical examinations.
<https://law.lis.virginia.gov/vacode/title22.1/chapter14/section22.1-270/>
- § 22.1-300. Tuberculosis certificate.
<https://law.lis.virginia.gov/vacode/title22.1/chapter15/section22.1-300/>
- § 54.1-3408. Professional use by practitioners.
<https://law.lis.virginia.gov/vacode/title54.1/chapter34/section54.1-3408/>
- § 63.2-100. Definitions.
<https://law.lis.virginia.gov/vacode/title63.2/chapter1/section63.2-100/>
- 8VAC20-780-160. Tuberculosis screening for staff and independent contractors.
<https://law.lis.virginia.gov/admincode/title8/agency20/chapter780/section160/>
- 8VAC20-800-170. Initial tuberculosis screening for caregivers and household members.
<https://law.lis.virginia.gov/admincode/title8/agency20/chapter800/section170/>
- 12VAC35-46-250. Health information.
<https://law.lis.virginia.gov/admincode/title12/agency35/chapter46/section250/>
- 12VAC35-105-510. Tuberculosis screening.
<https://law.lis.virginia.gov/admincode/title12/agency35/chapter105/section510/>
- 12VAC30-122-340. Companion service.
<https://law.lis.virginia.gov/admincode/title12/agency30/chapter122/section340/>
- 12VAC30-122-460. Personal assistance service.
<https://law.lis.virginia.gov/admincode/title12/agency30/chapter122/section460/>
- 12VAC30-122-490. Respite service.
<https://law.lis.virginia.gov/admincode/title12/agency30/chapter122/section490/>
- 12VAC30-120-930. General requirements for home and community-based participating providers.
<https://law.lis.virginia.gov/admincode/title12/agency30/chapter120/section930/>
- 22VAC40-61-180. Staff records and health requirements.
<https://law.lis.virginia.gov/admincode/title22/agency40/chapter61/section180/>
- 22VAC40-61-260. Physical examinations and report.
<https://law.lis.virginia.gov/admincode/title22/agency40/chapter61/section260/>
- 22VAC40-73-250. Staff records and health requirements.
<https://law.lis.virginia.gov/admincode/title22/agency40/chapter73/section250/>
- 22VAC40-73-320. Physical examination and report.
<https://law.lis.virginia.gov/admincode/title22/agency40/chapter73/section320/>

Enforcement Procedures and Scheduling for Occupational Exposure to Tuberculosis.
Occupational Safety and Health Administration. 06/30/2015

https://www.osha.gov/sites/default/files/enforcement/directives/CPL_02-02-078.pdf

Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Settings, 2005. CDC Morbidity and Mortality Weekly Report.
<https://www.cdc.gov/mmwr/pdf/rr/rr5417.pdf>

Latent TB Infection Testing and Treatment: Summary of U.S. Recommendations. CDC, Division of Tuberculosis Elimination. December 2019. <https://www.cdc.gov/tb/publications/ltpi/pdf/CDC-USPSTF-LTBI-Testing-Treatment-Recommendations-508.pdf>

Pediatric Tuberculosis (TB) Risk Assessment Tool. Rutgers Global Tuberculosis Institute. 2021. <https://globaltb.njms.rutgers.edu/educationalmaterials/Products/2022/Peds%20RA%20Tool/Pediatric%20TB%20Risk%20Assessment%20-%20NJ.pdf>

Prevention and Control of Tuberculosis in Correctional and Detention Facilities: Recommendations from CDC. Morbidity and Mortality Weekly Report July 7, 2006. Endorsed by the Advisory Council for the Elimination of Tuberculosis, the National Commission on Correctional Health Care, and the American Correctional Association.
<https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5509a1.htm>

Screening for Tuberculosis and Tuberculosis Infection in High-Risk Populations Recommendations of the Advisory Council for the Elimination of Tuberculosis. CDC Morbidity and Mortality Weekly Report, September 8, 1995.
<https://www.cdc.gov/mmwr/preview/mmwrhtml/00038873.htm>

Targeted Tuberculin Testing and Treatment of Latent Tuberculosis Infection. CDC Morbidity and Mortality Weekly Review, June 9, 2000. <https://www.cdc.gov/mmwr/PDF/rr/rr4906.pdf>

The Core Curriculum on Tuberculosis: What the Clinician Should Know. Centers for Disease Control and Prevention. Seventh Edition. 2021.
<https://www.cdc.gov/tb/education/corecurr/index.htm>

Tuberculosis. American Academy of Pediatrics. Red Book 2021-2024 Report of the Committee on Infectious Diseases. DOI: 10.1542/9781610025782-S3_150

Tuberculosis in Pregnancy. Obstet Gynecol. 2020. doi: 10.1097/AOG.0000000000003890.
<https://pubmed.ncbi.nlm.nih.gov/32459437/>

Tuberculosis Screening and Targeted Testing of College and University Students. American College Health Association. 2022. <https://www.acha.org/ACHA/Resources/Topics/TB.aspx>

Tuberculosis Screening, Testing, and Treatment of U.S. Health Care Personnel: Recommendations from the National Tuberculosis Controllers Association and CDC, 2019. Morbidity and Mortality Weekly Report.
<https://www.cdc.gov/mmwr/volumes/68/wr/pdfs/mm6819a3-H.pdf>

Virginia Professional Practice Acts

- Board of Medicine: Code of Virginia Chapter 29. Medicine and Other Healing Arts
<https://law.lis.virginia.gov/vacode/title54.1/chapter29/>
- Board of Nursing: Code of Virginia Chapter 30. Nursing
<https://law.lis.virginia.gov/vacode/title54.1/chapter30/>

Virginia Tuberculosis (TB) Risk Assessment. March 2023. Available here:

<https://www.vdh.virginia.gov/tuberculosis/screening-testing/>

Virginia Tuberculosis (TB) Risk Assessment for Children Under 6 Years Old. March 2023.

Available here: <https://www.vdh.virginia.gov/tuberculosis/screening-testing/>