Tuberculosis Screening, Testing and Treatment of U.S. Healthcare Personnel

September 16, 2020
Virginia Department of Health

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Overview

- Updated healthcare personnel (HCP) TB screening, testing and treatment recommendations
- Companion document
- Resources

2

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

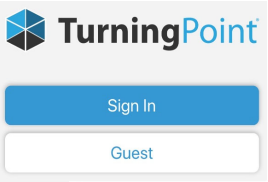
Polling Questions

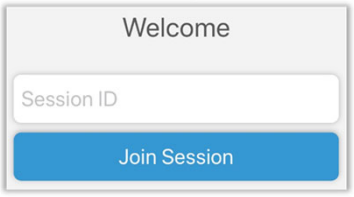
Visit: www.ttpoll.com

Download the Turning Point App

Select “North/South America”

Click “Guest”





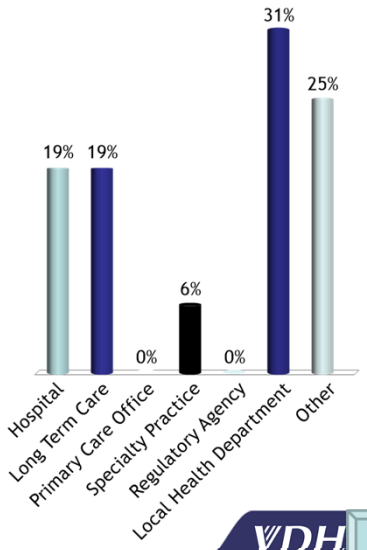
Session ID: HCPWebinar

3

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

What type of agency do you represent?

A. Hospital
B. Long Term Care
C. Primary Care Office
D. Specialty Practice
E. Regulatory Agency
F. Local Health Department
G. Other



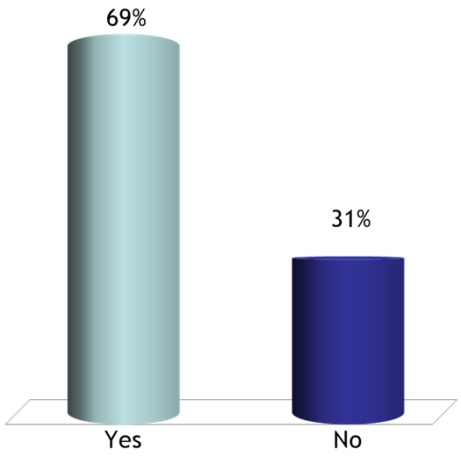
4

VDH To protect the health and well-being of all people

0

Were you aware of the 2019 HCP TB Screening, Testing and Treatment Recommendations prior to today's webinar?

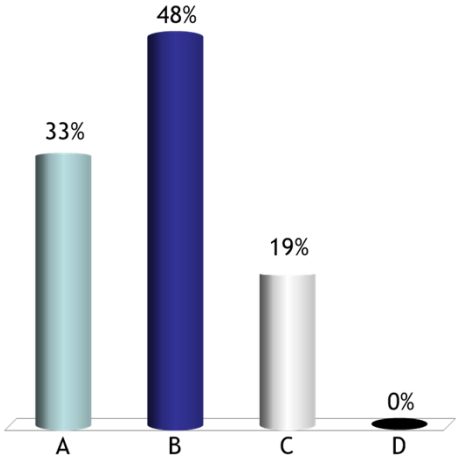
A. Yes
B. No



5

Status of implementation of the new recommendations at your agency?

A. My agency has not implemented them.
B. My agency is in the process of implementing them.
C. My agency has fully implemented them.
D. My agency does not plan to implement them.



6

TB Screening, Testing and Treatment of U.S. Healthcare Personnel

Updated guidance released in May of 2019 to supplement the 2005 guidelines for preventing the transmission of *Mycobacterium tuberculosis* in healthcare settings

Morbidity and Mortality Weekly Report

Tuberculosis Screening, Testing, and Treatment of U.S. Health Care Personnel: Recommendations from the National Tuberculosis Controllers Association and CDC, 2019

Lynn E. Sosa, MD[1,2]; Gibril J. Njie, MPH[3]; Mark N. Lobato, MD[2]; Sapna Bamrah Morris, MD[3]; William Buchta, MD[4,5]; Megan L. Casey, MPH[6]; Neela D. Goswami, MD[3]; MaryAnn Gruden, MSN[7]; Bobbi Jo Hurst[7]; Amera R. Khan, MPH[3]; David T. Kuhar, MD[8]; David M. Lewinsohn, MD, PhD[9]; Trini A. Mathew, MD[10]; Gerald H. Mazurek, MD[3]; Randall Reves, MD[2,11]; Lisa Paulos, MPH[2,12]; Wendy Thanassi, MD[2,13]; Lorna Will, MA[2]; Robert Belknap, MD[2,11]

"Companion Document"

ACOEM GUIDANCE STATEMENT

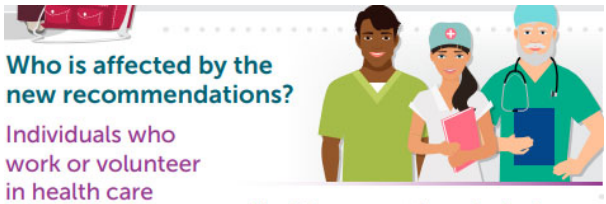
Tuberculosis Screening, Testing, and Treatment of US Health Care Personnel

ACOEM and NTCA Joint Task Force on Implementation of the 2019 MMWR Recommendations

Wendy Thanassi, MD, MA, Amy J. Behrman, MD, Randall Reves, MD, Mark Russi, MD, MPH, Melanie Swift, MD, MPH, Jon Warkentin, MD, MPH, Ryo Miyakawa, MD, Donna Wegener, MA, Lawrence Budnick, MD, MPH, Ellen Murray, RN, PhD, Ann Scarpita, BSN, MPH, Bobbi Jo Hurst, MBA, Sarah Foster-Chang, DNP, ANP-BC, Trini Mathew, MD, MPH, MaryAnn Gruden, MSN, COHN-S/CM, Julie Higashi, MD, PhD, and Thomas Warner Hudson III, MD

Expands on the 2019 recommendations to provide clarifications, explanations, and considerations that go beyond the 2019 recommendations to answer questions that may arise and to offer strategies for implementation.

TB Screening, Testing and Treatment of U.S. Healthcare Personnel



Who is affected by the new recommendations?

Individuals who work or volunteer in health care settings

Health care settings include

- Inpatient and outpatient settings
- Laboratories
- Emergency medical services
- Medical settings in prisons or jails
- Home-based health care settings
- Long-term care facilities

9

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Healthcare Worker vs. Healthcare Personnel

- Healthcare personnel (HCP) replaces healthcare worker
- Companion Document:
  - All paid and unpaid, part-time, temporary, contract, student and full-time persons working in healthcare settings.
  - Suggested list – Appendix 2

Appendix 2. Updated Health Care Worker/Personnel Definition from *Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Facilities, 2005*[3] (CDC 2005)

Note: Health care workers are now termed health care personnel (HCP)
The following are HCP who might be included in the post-offer pre-placement TB screening program:

- Administrators, managers
- Bronchoscopy staff
- Chaplains
- Clerical staff
- Construction staff
- Correctional officers
- Craft or repair staff
- Dental staff
- Dietician or dietary staff
- ED staff
- Engineers
- Food service staff
- Health aides
- Health and safety staff
- Housekeeping or custodial staff
- Homeless shelter staff
- Infection control staff
- Information technologists
- Intensive care unit staff
- Janitorial staff
- Laboratory staff
- Maintenance staff
- Morgue staff
- Nurses
- Outreach staff
- Patient transport staff, including EMS
- Pediatric staff
- Pharmacists
- Phlebotomists
- Physical and occupational therapists
- Physicians (assistant, attending, fellow, resident, and intern)
- Public health educators or teachers
- Radiology staff
- Researchers
- Respiratory therapists
- Scientists
- Social workers
- Students (medical, nursing, technicians, allied health)
- Technicians (health, laboratory, radiology, animal handlers)
- Veterinarians
- Volunteers

10

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

A Shift in Focus

From:	To:
Routine serial testing of HCP.	Improving education and increasing LTBI treatment

Why?

- Annual conversion rates of <1% in HCP.
- Low TB incidence rates among HCP (2.5 per 100,000 in HCP vs. 3.0 per 100,000 in general population).
- 80% of active TB cases reported are reactivations.

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

TB Screening, Testing and Treatment of U.S. Healthcare Personnel

The recommendations address four major topics:

- Baseline (preplacement) screening and testing
- Postexposure screening and testing
- Serial screening and testing for HCP without LTBI
- Evaluation and treatment of HCP with positive test results

12

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Baseline Preplacement Screening and Testing

13

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Baseline Preplacement Screening and Testing

Health Care Personnel (HCP)
Baseline Individual TB Risk Assessment

HCP should be considered at increased risk for TB if any of the following statements are marked "Yes":

Temporary or permanent residence of ≥1 month in a country with a high TB rate Any country other than the United States, Canada, Australia, New Zealand, and those in Northern Europe or Western Europe	YES ☐ NO ☐
OR	
Current or planned immunosuppression, including human immunodeficiency virus (HIV) infection, organ transplant recipient, treatment with a TNF-alpha antagonist (e.g., infliximab, etanercept, or other), chronic steroids (equivalent of prednisone ≥15 mg/day for ≥1 month) or other immunosuppressive medication	YES ☐ NO ☐
OR	
Close contact with someone who has had infectious TB disease since the last TB test	YES ☐ NO ☐

Virginia Tuberculosis (TB) Risk Assessment
For use in individuals 6 years and older

First screen for TB Symptoms: ☐ None (If no TB symptoms present → Continue with this tool)
☐Cough ☐Hemoptysis ☐Fever ☐Weight Loss ☐Poor Appetite ☐Night Sweats ☐Fatigue
If TB symptoms present: → Evaluate for active TB disease

Use this tool to identify asymptomatic **individuals 6 years and older** for latent TB infection (LTBI) testing
- Re-testing should only be done in persons who previously tested negative and have new risk factors since the last assessment
- A negative Tuberculin Skin Test (TST) or Interferon Gamma Release Assay (IGRA) does not rule out active TB disease

Check appropriate risk factor boxes below.
TB infection testing is recommended if any of the risks below are checked.
If TB infection test result is positive and active TB disease is ruled out, TB infection treatment is recommended.

☐ Birth, travel, or residence in a country with an elevated TB rate ≥ 3 months
- Includes countries other than the United States (US), Canada, Australia, New Zealand, or Western and North European countries
- IGRA is preferred over TST for non-US-born persons ≥ 2 years old
- Clinicians may make individual decisions based on the information supplied during the evaluation. Individuals who have traveled to TB-endemic countries for the purpose of medical or health tourism < 3 months may be considered for further screening based on the risk estimated during the evaluation.

☐ Medical conditions increasing risk for progression to TB disease
Radiographic evidence of prior healed TB, low body weight (10% below ideal), silicosis, diabetes mellitus, chronic renal failure or on hemodialysis, gastrectomy, jejunoileal bypass, solid organ transplant, head and neck cancer

☐ Immunosuppression, current or planned
HIV infection, injection drug use, organ transplant recipient, treatment with TNF-alpha antagonist (e.g., infliximab, etanercept, others), steroids (equivalent of prednisone ≥15 mg/day for ≥1 month) or other immunosuppressive medication

☐ Close contact to someone with infectious TB disease at any time

☐ None; no TB testing indicated at this time

Patient Name _____ Provider Name _____
Date of Birth _____ Assessment Date _____

Adapted from California Tuberculosis Risk Assessment (www.ctca.org) & Colorado Tuberculosis Risk Assessment (www.colorado.gov) VDH TB 02/2019

14

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Integrated TB Screening and Risk Assessment

Appendix 3. Integrated Tuberculosis (TB) Screening and Risk Assessment Form for Newly Hired HCP

Name: _____ Date:_____

Preferred Contact Information: _____

1. What position are you hired for? _____ What is your start date?_____
2. Have you EVER spent more than 30 days in a country with an elevated TB rate? This includes all countries except those in Western Europe, Northern Europe, Canada, Australia, and New Zealand.
   a. YES I have been in a foreign country for ≥30 days **(not including those listed above)**
   b. NO I have not been in any country for ≥30 days **except the ones listed above**
3. Have you had close contact with anyone who had active TB since your last TB test?
   YES / NO
4. Do you currently have any of the following symptoms:
   a. YES / NO unexplained fever for more than 3 weeks
   b. YES / NO cough for more than 3 weeks with sputum production
   c. YES / NO bloody sputum
   d. YES / NO unintended weight loss >10 pounds
   e. YES / NO drenching night sweats
   f. YES / NO unexplained fatigue for more than 3 weeks
5. Have you ever been diagnosed with active TB disease?
   YES / NO
6. Have you ever been diagnosed with latent TB infection *or* had a positive skin test *or* a positive blood test for TB?
   a. YES one or more of these is true for me
   b. NO none of these is true for me
7. Have you been treated with medication for TB *or* for a positive TB test (eg, taken "INH")?
   YES / NO
   If YES, what year, with which medication, for how long, and did you complete the treatment course?
   _____
8. Do you have a weakened immune system for any reason including organ transplant, recent chemotherapy, poorly controlled diabetes, HIV infection, cancer, or treatment with steroids for more than 1 month, immune-suppressing medications such as a TNF-alpha antagonist or another immune-modulator? (If you are not sure, ask your Occupational Health provider)
   a. YES, one or more of these is true for me
   b. NO, none of these is true for me

_____ _____
Occupational Health Reviewer Signature Date

Preplacement Testing

Companion Document Addresses:

- Testing of HCP without prior positives
- Testing of HCP with prior positives
- Newly confirmed positives and/or positive symptom review
- Considering active disease

Preplacement Testing

- Use IGRA or TST
- May accept recent test results for clearance*
- Clearance of HCP without risk factors

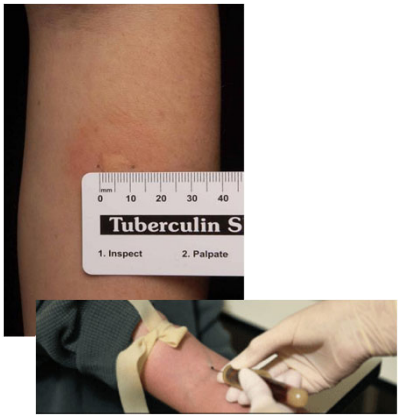
The facility accepts the responsibility of the risk of exposure that has occurred since the time of the documented negative test.

17

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Preplacement Testing

- Capture baseline measurement if using TST, as this will impact determination of conversion if tested after a future exposure.
- Conduct a repeat test on any newly positive results in HCP who were previously negative with no risk factors.



18

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Preplacement Testing – Prior Positive

- Obtain documentation of:
  - Previous TB test results
  - Imaging
  - Treatment compliance
- Focused physical examination - those who have not completed treatment, or who report relevant symptoms regardless of treatment history.
- Consider retesting based upon LTBI treatment status, presence of symptoms or if it would alter management.
- BCG vaccinated HCP with a prior positive TST may benefit from testing with IGRA.
- Asymptomatic HCP with documented prior positive TB tests do not require imaging for clearance if normal CXR is documented after the prior positive test.

19

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Preplacement Testing – Prior Positive Re-imaging

- Consider re-imaging for HCP with prior positive and normal CXR based upon review of their TB risk assessment:
  - Known exposure since prior image was obtained.
  - Extended period of time in regions with elevated TB rates.
  - Prior imaging is not well documented.
  - Incomplete LTBI treatment.
  - No LTBI treatment and presence of risk factors for progression to active TB disease (reactivation TB).
  - HCP is interested in initiating LTBI treatment.

20

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Preplacement Testing – New Positive/Positive Symptom Review

- "Confirmed positive" for a low-risk HCP
  - A TB test that is positive and when repeated is positive again.
- Crucial opportunity to offer counseling and encourage treatment for LTBI.
- Obtain:
  - medical hx,
  - previous TB test results,
  - identified exposures,
  - any prior TB or LTBI treatment.
- Assess untreated comorbidities and recommend diabetes and HIV screening if not done previously.
- Evaluate with CXR

21

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Preplacement Testing – Considering Active TB Disease

- Further evaluate the HCP if imaging or clinical presentation suggests active pulmonary TB disease, i.e. sputum collection.
- The TST, IGRA, clinical examination, nor imaging alone can exclude active TB disease.
- CXR in extra-pulmonary TB disease will likely be normal.
- Clearance to work for HCP with possible infectious TB disease requires:
  - Direct testing (smears, NAAT, culture)
  - Expert consultation

22

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Postexposure Screening and Testing

- All HCP with a known exposure to TB disease:
  - Should receive a TB symptom screen and timely testing, if indicated.
- HCP with a previous negative TB test result:
  - test immediately and re-test 8 to 10 weeks after the last known exposure.
- HCP with a documented history of a positive TB test result:
  - No need to re-test.
  - Should receive a TB symptom screen and an evaluation if they have symptoms.
- These activities are important to establish a baseline in the event of a change in symptoms or test conversion at a later time.

23

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Postexposure Screening and Testing

- Initiate a contact investigation (CI) any time a potentially infectious case is identified.
  - Include any exposed HCP, other exposed staff members, and other identified contacts.
- **Notify and work with your LHD to conduct the CI.**
- Characteristics of the exposure dictate the timing and extent of the CI activities, such as:
  - Risk and exposure assessment
  - Symptom screen
  - Testing

24

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Factors Affecting Risk of Transmission to HCP

TABLE 2. Factors that Affect Risk of TB Transmission to Health Care Personnel (HCP)

Factors that Decrease Risk for TB Transmission to HCP

Patient Factors	Environmental Factors	Time and Intensity of Exposure
Early identification of possible TB disease of respiratory tract	Isolation room under negative air pressure	Risk of transmission is directly proportional to time and intensity of exposure
Early/prompt transfer of patient into respiratory isolation	Removal of infectious droplet nuclei by adequate air exchanges with exhaust to outside air	Short exposure duration
Early initiation of effective anti-TB regimen	Use of adequate ultraviolet germicidal irradiation (UVGI)	Infrequent exposure
Effective antibiotic treatment of 3 days or more	Employee using appropriate personal protective equipment (PPE) (N95, powered air-purifying respirator [PAPR], or equivalent)	Absence of close physical contact
Patient is not coughing		
Surgical mask is worn by patient		

Factors that Increase Risk for TB Transmission to HCP

Patient Factors	Environmental Factors	Time and Intensity of Exposure
Incorrect, lack of, or short duration of TB treatment	Sharing small, enclosed spaces	Prolonged cumulative duration of exposure
High concentrations of acid-fast bacillus (AFB) on sputum smear	Inadequate local or general ventilation that results in insufficient dilution or removal of infectious droplets	Frequent exposure
Presence of cough	Recirculation of air containing infectious droplet nuclei	Prolonged close physical proximity
Cavitation on CXR	Inadequate cleaning and disinfection of medical equipment	Intense exposure (eg, conducting aerosol-generating procedures)
Oropharyngeal or laryngeal TB	Improper procedures for handling specimens	
Failure to cover the mouth and nose while coughing (or not wearing a mask)		
Undergoing cough-inducing or aerosol-generating procedures (eg, bronchoscopy, sputum induction, autopsy)		
Culture or NAAT+regardless of AFB smear positivity		

Partially adapted from Centers for Disease Control and Prevention.[2]

25

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Postexposure Screening and Testing – 2019 Recommendation Clarifications

- Exposure definition – includes “without the use of adequate personal protection”.
- CIs may be done with either IGRA or TST
  - 2017 CDC/ATS/IDSA Diagnostic Guidelines recommend IGRA over TST.
- HCP with documented prior LTBI do not need another test for infection after exposure.
- The designation of a facility as medium risk (2005 MMWR CDC Guidelines Facility Risk Assessment) no longer establishes a requirement for annual HCP TB Testing.

26

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Postexposure Screening and Testing – Travel-Related Exposure

- Work, educational, and volunteer-related travel to TB endemic areas of the world merit attention.
- Regions other than:
  - Australia
  - Canada
  - New Zealand
  - Countries in western and northern Europe
- Clinical rotations and overseas duties lasting a month or more in regions with high TB incidence may pose a risk for exposure.
- Serial testing may be warranted for those who rotate on a regular basis.

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Postexposure Screening and Testing – Self-Assessed Exposure

- Exposures may happen during an employee's personal time.
  - Incarceration, experiencing homelessness, symptomatic family member or roommate from high-risk country, etc.
- A HCP can self-report and request a TB Test.
- Occupational health may or may not inquire further about the exposure.
- Can recommend testing by the HCP's primary care provider.
- If voluntary testing is provided by the employer, be sure to include this in the annual education program.

28

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Postexposure Screening and Testing – Management of Exposed HCP

TABLE 3. Management of HCP Exposed to Potentially Infectious Tuberculosis

Time Frame		Clinical Management	HCP TB Status Prior to Known TB Exposure: Negative IGRA or TST <3 Months Ago	Negative IGRA or TST ≥3 Months Ago or Unknown or Unavailable Results	Positive IGRA or TST, Untreated	Positive IGRA or TST, Treated
As soon as TB exposure is identified, up to 4 weeks after first exposure*	Step 1	TB symptom screen	Yes	Yes	Yes	Yes
	Step 2	Obtain initial post-exposure test (IGRA or TST)†	Optional‡	Yes	Conditional§	No
	Step 3	If initial post-exposure test is positive, or if TB symptoms are reported, obtain CXR and focused clinical examination‖	Yes	Yes	Yes	Yes
	Step 4	Recommend LTBI treatment if initial post-exposure test is positive without evidence of active TB disease¶	Yes	Yes	Yes	Rare**
At least 8 weeks after last exposure*,¶	Step 5	TB symptom screen	Yes	Yes	Yes	Yes
	Step 6	Obtain follow-up post-exposure test†† if initial post-exposure test was negative or not obtained	Yes	Yes	Yes§	No
	Step 7	Obtain CXR and perform focused clinical examination if symptom screen or post-exposure test is positive‖	Yes	Yes	Yes	Yes
	Step 8	Recommend LTBI treatment if this post-exposure test is positive without evidence of active TB disease¶	Yes	Yes	Yes	Rare**

*Tests for TB infection obtained between 4 and 8 weeks after TB exposure serve neither as a valid baseline nor as a follow-up test, and are not recommended except, potentially, in the case of severe immunocompromised status or extenuating circumstance. If exposure identification was made after 4 weeks, commence with Steps 5 to 8 after 8 weeks using the last known test as the baseline.

†Some references may call this first post-exposure test a new "baseline" result. An interferon-gamma release assay (IGRA) is preferred over tuberculin skin testing (TST) for use in contact investigations. If TST must be used, note that if the previous TST result is >12 months old, two-step TST testing would be ideal, if feasible, for the 1st post-exposure test. IGRA is strongly preferred because this is difficult to accomplish in a timely manner and delays in the two-step testing process can cause confusing results.

‡The first post-exposure test may have limited value in HCP who had a negative IGRA or TST in the past 3 months, though it may be required by the facility or workers' compensation; check local policy. An IGRA could be useful for use in individuals who have only had TSTs.

§Obtain an IGRA for those with a previously positive test if (1) TST is the only test that was previously positive (particularly in BCG-vaccinated individuals) or (2) an earlier IGRA was positive on only one instance and not confirmed by a repeat test. If the LTBI diagnosis was confirmed, repeat testing is not necessary.

‖If there is any suspicion of active TB disease, expert consultation should be obtained.

¶HCP who are identified as TB contacts >8 weeks following last exposure to active TB disease should still be clinically managed as soon as possible as in Steps 5 to 8.

#Using the same test method as the first post-exposure test (if obtained) is preferred.

**Those with prior TB treatment may benefit from re-treatment, depending on exposure history, post-exposure test results, and risk factors, such as HIV infection, solid-organ transplant or ongoing treatment with a TNF-alpha inhibitor. Consultation with a specialist or the public health department is recommended.

29

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Serial Screening and Testing for HCP without LTBI

An annual TB test is not recommended unless there is a known exposure or ongoing transmission.

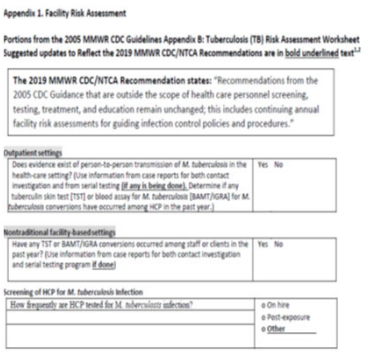
All health care personnel should receive TB education every year.

The risk assessment for healthcare settings no longer forms the basis for determining a TB testing regimen for HCP.

30

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Facility Risk Assessment and Classification



Appendix 1. Facility Risk Assessment

Portions from the 2005 MMWR CDC Guidelines Appendix B: Tuberculosis (TB) Risk Assessment Worksheet
Suggested updates to Reflect the 2019 MMWR CDC/NTCA Recommendations are in bold underlined text[1,2]

The 2019 MMWR CDC/NTCA Recommendation states: "Recommendations from the 2005 CDC Guidance that are outside the scope of health care personnel screening, testing, treatment, and education remain unchanged; this includes continuing annual facility risk assessments for guiding infection control policies and procedures."

Outpatient settings

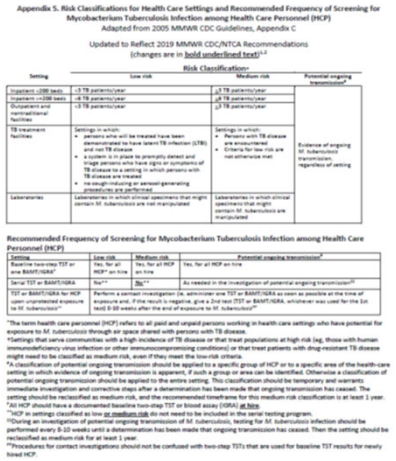
Does evidence exist of person-to-person transmission of M. tuberculosis in the health-care setting? (Use information from case reports for both contact investigation and from serial testing (if any is being done). Determine if any tuberculin skin test [TST] or blood assay for M. tuberculosis [BAMT/IGRA] for M. tuberculosis conversions have occurred among HCP in the past year.)	Yes No

Nontraditional facility based settings

Have any TST or BAMT/IGRA conversions occurred among staff or clients in the past year? (Use information from case reports for both contact investigation and serial testing program if done)	Yes No

Screening of HCP for M. tuberculosis infection

How frequently are HCP tested for M. tuberculosis infection?	o On hire o Post-exposure o Other



Appendix 5. Risk Classifications for Health Care Settings and Recommended Frequency of Screening for Mycobacterium Tuberculosis Infection among Health Care Personnel (HCP)
Adapted from 2005 MMWR CDC Guidelines, Appendix C

Updated to Reflect 2019 MMWR CDC/NTCA Recommendations
(changes are in bold underlined text)[1,2]

Setting	Risk Classification*		
	Low risk	Medium risk	Potential ongoing transmission[a]
Inpatient: ≥200 beds	<3 TB patients/year	≥3 TB patients/year	Evidence of ongoing M. tuberculosis transmission, regardless of setting
Inpatient: <200 beds	<6 TB patients/year	≥6 TB patients/year	
Outpatient and nontraditional facilities	<3 TB patients/year	≥3 TB patients/year	
TB treatment facilities	Settings in which: • Persons who will be treated have been demonstrated to have latent TB infection (LTBI) and not TB disease • a system is in place to promptly detect and triage persons who have signs or symptoms of TB disease to a setting in which persons with TB disease are treated • no cough-inducing or aerosol-generating procedures are performed	Settings in which: • Persons with TB disease are encountered • Criteria for low risk are not otherwise met	
Laboratories	Laboratories in which clinical specimens that might contain M. tuberculosis are not manipulated	Laboratories in which clinical specimens that might contain M. tuberculosis are manipulated	

Recommended Frequency of Screening for Mycobacterium Tuberculosis Infection among Health Care Personnel (HCP)

Setting	Low risk	Medium risk	Potential ongoing transmission[a]
Baseline two-step TST or one BAMT/IGRA[b]	Yes, for all HCP[c] on hire	Yes, for all HCP on hire	Yes, for all HCP on hire
Serial TST or BAMT/IGRA	No[d]	No[d]	As needed in the investigation of potential ongoing transmission[e]
TST or BAMT/IGRA for HCP upon unprotected exposure to M. tuberculosis[f]	Perform a contact investigation (ie, administer one TST or BAMT/IGRA as soon as possible at the time of exposure and, if the result is negative, give a 2nd test TST or BAMT/IGRA, whichever was used for the 1st test) 8-10 weeks after the end of exposure to M. tuberculosis[g]		

*The term health care personnel (HCP) refers to all paid and unpaid persons working in health-care settings who have potential for exposure to M. tuberculosis through air space shared with persons with TB disease.
†Settings that serve communities with a high incidence of TB disease or that treat populations at high risk (eg, those with human immunodeficiency virus infection or other immunocompromising conditions) or that treat patients with drug-resistant TB disease might need to be classified as medium risk, even if they meet the low-risk criteria.
§A classification of potential ongoing transmission should be applied to a specific group of HCP or to a specific area of the health-care setting in which evidence of ongoing transmission is apparent, if such a group or area can be identified. Otherwise a classification of potential ongoing transmission should be applied to the entire setting. This classification should be temporary and warrants immediate investigation and corrective steps after a determination has been made that ongoing transmission has ceased. The setting should be reclassified as medium risk, and the recommended timeframe for this medium-risk classification is at least 1 year.
¶All HCP should have a documented baseline two-step TST or blood assay (IGRA) at hire.
**HCP in settings classified as low or medium risk do not need to be included in the serial testing program.
††During an investigation of potential ongoing transmission of M. tuberculosis, testing for M. tuberculosis infection should be performed every 8-10 weeks until a determination has been made that ongoing transmission has ceased. Then the setting should be reclassified as medium risk for at least 1 year.
‡‡Procedures for contact investigations should not be confused with two-step TSTs that are used for baseline TST results for newly hired HCP.

Recommendations from the 2005 CDC Guidance that are outside of the scope of healthcare personnel screening, testing, treatment and education remain unchanged: this includes continuing annual facility risk assessments for guiding infection control policies and procedures. Ensure review of environmental and administrative controls.

31

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Considerations for Serial Screening and Testing of HCP

Might be considered for:

- Certain groups at increased occupational risks
- HCP working in settings with past documented transmission
- Institutional or regulatory requirements

Extending serial testing should be individualized based upon:

- Number of patients with infectious pulmonary TB examined;
- Whether delays occurred in initiating airborne isolation;
- Whether environmental controls and processes are in place and functional;
- If prior serial testing has revealed ongoing transmission

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

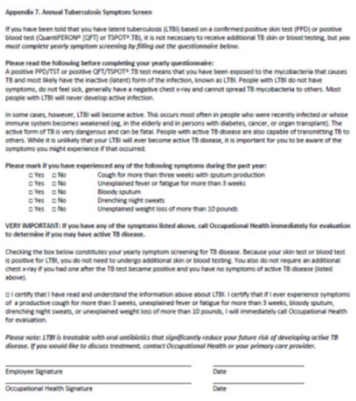
Annual Education Requirement

- Imperative to include rigorous annual TB education
- Staff should be familiar with:
  - Exposure risks
  - What to expect if a workplace exposure is identified
  - Signs and symptoms of active disease
  - Which workplace and non-workplace based medical resources to access if symptoms develop
- Emphasize knowledge required by HCP who have untreated LTBI or those who may be at increased TB risk due to work-related and non-work-related factors.
- Reinforce the need for the HCP to notify Occupational Health of new exposures outside of work.

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Annual Symptom Review for HCP with LTBI

- Continue annual symptom evaluation for those with untreated LTBI.
- This should include education to help the HCP understand which symptoms to monitor, whom to contact if symptoms of concern develop, and what LTBI treatment options to consider.
- Time to review the HCP's knowledge and understanding of TB and to encourage treatment of LTBI.



Appendix 7. Annual Tuberculosis Symptom Screen

If you have been told that you have latent tuberculosis (LTBI) based on a confirmed positive skin test (PPD) or positive blood test (QuantiFERON® [QFT] or TSPOT® TB), it is not necessary to receive additional TB skin or blood testing, but you *must complete yearly symptom screening by filling out the questionnaire below.*

Please read the following before completing your yearly questionnaire:
A positive PPD/TST or positive QFT/TSPOT® TB test means that you have been exposed to the mycobacteria that causes TB and most likely have the inactive (latent) form of the infection, known as LTBI. People with LTBI do not have symptoms, do not feel sick, generally have a negative chest x-ray and cannot spread TB mycobacteria to others. Most people with LTBI will never develop active infection.

In some cases, however, LTBI will become active. This occurs most often in people who were recently infected or whose immune system becomes weakened (eg, in the elderly and in persons with diabetes, cancer, or organ transplant). The active form of TB is very dangerous and can be fatal. People with active TB disease are also capable of transmitting TB to others. While it is unlikely that your LTBI will ever become active TB disease, it is important for you to be aware of the symptoms you might experience if that occurred.

Please mark if you have experienced any of the following symptoms during the past year:

☐ Yes	☐ No	Cough for more than three weeks with sputum production
☐ Yes	☐ No	Unexplained fever or fatigue for more than 3 weeks
☐ Yes	☐ No	Bloody sputum
☐ Yes	☐ No	Drenching night sweats
☐ Yes	☐ No	Unexplained weight loss of more than 10 pounds

VERY IMPORTANT: If you have any of the symptoms listed above, call Occupational Health immediately for evaluation to determine if you may have active TB disease.

Checking the box below constitutes your yearly symptom screening for TB disease. Because your skin test or blood test is positive for LTBI, you do not need to undergo additional skin or blood testing. You also do not require an additional chest x-ray if you had one after the TB test became positive and you have no symptoms of active TB disease (listed above).

☐ I certify that I have read and understand the information above about LTBI. I certify that if I ever experience symptoms of a productive cough for more than 3 weeks, unexplained fever or fatigue for more than 3 weeks, bloody sputum, drenching night sweats, or unexplained weight loss of more than 10 pounds, I will immediately call Occupational Health for evaluation.

Please note: LTBI is treatable with oral antibiotics that significantly reduce your future risk of developing active TB disease. If you would like to discuss treatment, contact Occupational Health or your primary care provider.

Employee Signature _____ Date _____

Occupational Health Signature _____ Date _____

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

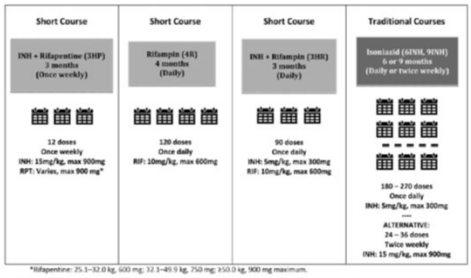
Educating the HCP about LTBI

- Key concepts to convey:
  - You have LTBI, not active TB.
  - LTBI is not contagious, so you cannot pass this to others.
  - The BCG vaccine does not interfere with the accuracy of the TB blood tests.
  - You are at risk for developing active TB disease in the future.
  - The risk depends on your health status and how recently you were infected.
  - The risk starts at 5% during the first 2 years.
  - After the first 2 years, the risk starts at about 1% per decade of life.
  - Conditions and medications that you may have now or in the future could substantially increase your risk.
  - If you develop active TB disease you may expose patients, coworkers, and family.
  - Treatment is safe, effective and strongly recommended.
  - Treatment can be as short as 1 day/week for 12 weeks.

35

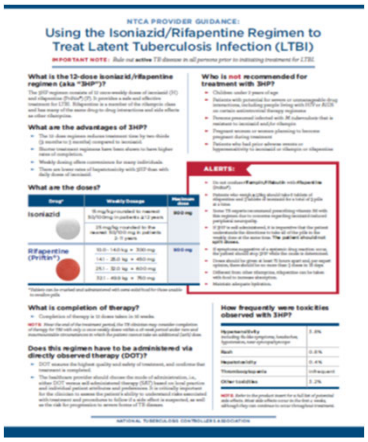
VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Treatment Options for HCP with LTBI



*Rifapentine: 25.1–32.0 kg, 600 mg; 32.1–49.9 kg, 750 mg; ≥50.0 kg, 900 mg maximum.

FIGURE 1. LTBI treatment options quick-reference guide, 2020. *Rifapentine: 25.1 to 32.0 kg, 600 mg; 32.1 to 49.9 kg, 750 mg; more than or equal to 50.0 kg, 900 mg maximum. See Table 4 for list of abbreviation meanings.


NTCA PROVIDER GUIDANCE:

Using the Isoniazid/Rifapentine Regimen to Treat Latent Tuberculosis Infection (LTBI)

IMPORTANT NOTE: Rule out active TB disease in all persons prior to initiating treatment for LTBI

What is the 12-dose isoniazid/rifapentine regimen (aka "3HP")?

What are the advantages of 3HP?

What are the doses?

Who is not recommended for treatment with 3HP?

ALERTS:

What is completion of therapy?

Does this regimen have to be administered via directly observed therapy (DOT)?

How frequently were toxicities observed with 3HP?

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

LTBI Treatment - Reduce Barriers and Optimize Acceptance

- Strategies:
  - Offer treatment though onsite occupational health clinic.
  - Provide LTBI education appropriate to the HCP's knowledge base.
  - Elicit and address the HCP's beliefs and concerns about LTBI and treatment.
  - Subsidize the cost of treatment.
  - Offer flexible, convenient mechanisms for follow-up care.
  - Follow up with the HCP who do not accept treatment initially.
  - Use a declination form to clearly document the offer of treatment and underscore the educational messages.

37

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Declination Form

Appendix 4. Latent Tuberculosis Infection Treatment Declination or Postponement of Treatment

I understand that:

- I have a confirmed positive tuberculosis (TB) test skin test or blood test (such as QuantiFERON® or TSpot®.*TB*), and a chest X ray that is negative for active TB disease. These show evidence that I was exposed to TB and that I have latent TB infection (LTBI).
- This LTBI is not currently communicable to others.
- LTBI can turn into active TB disease in the future, where it may become communicable to family members, patients, colleagues and the general public. The treatment of active TB disease requires multiple medications and, if untreated, can be fatal.
- Treatment of my LTBI with anti-TB medications will greatly reduce the risk of my LTBI ever becoming active TB.
- If I develop symptoms that may be active TB disease, I must immediately refrain from work and report these symptoms to a physician knowledgeable in TB diagnosis and treatment.
  - These symptoms include prolonged (>3 weeks) cough or bloody cough, drenching night sweats, unexplained weight loss and/or unexplained fevers.
- I have been encouraged to get treated for LTBI and have been given treatment information.
- I understand that by declining or postponing this treatment I continue to be at risk of developing active TB disease.

If I want to be treated for LTBI in the future, I can receive that treatment.

Employee Signature	Date
Employee Printed Name	Department and Location
Occupational Health Staff Signature	Date
Occupational Health Printed Name	Title

38

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

TB Screening, Testing and Treatment of U.S. Healthcare Personnel

Topic	2005	2019
Baseline Screening	TB screening of all HCP	TB screening of all HCP **including individual risk assessment**
Postexposure Screening and Testing	Symptom evaluation, test when exposure is identified, additional test at 8-10 weeks if initial test is negative	Unchanged
Serial Screening and Testing of HCP without LTBI	Recommended for HCP working in medium-risk health care setting	**Not routinely recommended**; Annual TB education for all HCP including info about TB exposure risks
Evaluation and Treatment of positive test results	Referral to determine whether LTBI treatment is indicated	**Treatment is encouraged for all HCP** with untreated LTBI, unless medically contraindicated

39

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Transitioning Your Program

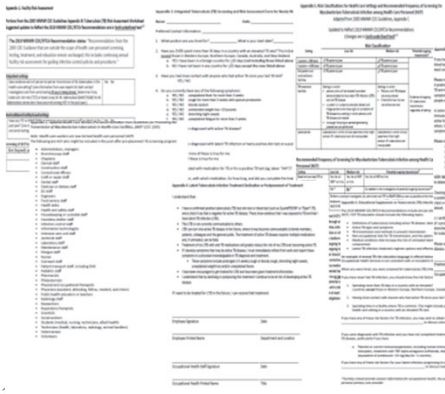
- Will save time and money.
- Allowing funds to be redirected to other activities such as educating, identifying, tracking and treating LTBI.
- Possible impediments:
  - Mandatory testing by localities and states;
  - Updating hospital policies;
  - Contracts that specify TB testing;
  - Resistance to change.
- Keys to affect change:
  - CIs from HCPs can cost millions of dollars, results in negative media attention and cause significant harm.
  - Ongoing education and communication that:
    - Emphasizes the improvement of the safety of HCPs and patients through pre-placement identification and treatment of LTBI and identification and monitoring of those exposed to active TB cases.

40

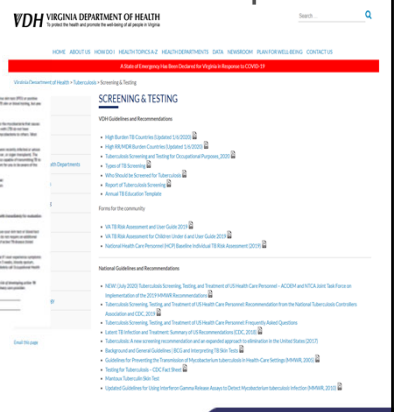
VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

Resources

Companion Document Appendices



VDH Annual TB Education Template

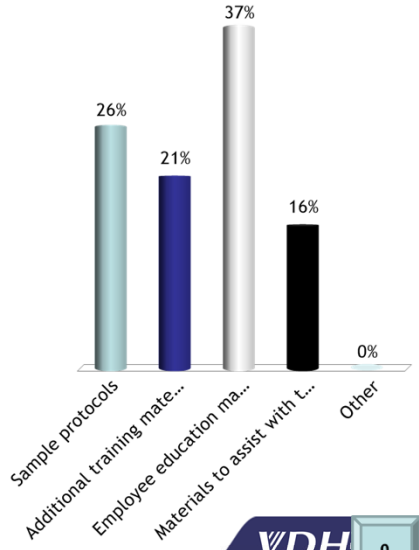


4

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.

What other resources would be useful?

A. Sample protocols
B. Additional training materials
C. Employee education materials
D. Materials to assist with the discussion of the recommendations with agency leadership.
E. Other



42

VDH
To protect the health and well-being of all people

0

What other resources might be useful?

ACCESS TO QUANTIFERON GOLD TEST

43

0

VDH To protect the health and promote the well-being of all people in Virginia.

Final Thoughts

- The VDH supports the implementation of these recommendations.
- Must consider any current regulations/requirements that could be a barrier to the implementation, i.e. licensure requirements.
- Reach out to your LHD or Central Office
- There are resources available for your use:
  - https://www.vdh.virginia.gov/tuberculosis/screening-testing/
  - https://www.vdh.virginia.gov/tuberculosis/tb-infection-ltbi/

44

VDH VIRGINIA DEPARTMENT OF HEALTH To protect the health and promote the well-being of all people in Virginia.

Questions?

Contact Information

TB Program Manager - **Jasie Logsdon**
Phone: 804-864-7075
E-mail: jasie.logsdon@vdh.virginia.gov

TB Nurse Consultant - **Amanda Khalil**
Phone: 804-864-7589
E-mail: amanda.khalil@vdh.virginia.gov

TB Nurse Consultant - **Adwoa Sam**
Phone: 804-864-7968
E-mail: adwoa.sam@vdh.virginia.gov

TB Epidemiologist/Surveillance Coordinator - **Laura Young**
Phone: 804-864-7922
E-mail: laura.r.young@vdh.virginia.gov

LTBI Epidemiologist - **Jane Tingley**
Phone: 804-864-7921
E-mail: jane.tingley@vdh.virginia.gov

Surveillance Epidemiologist - **Leah Breitung**
Phone: 804-864-7924
E-mail: leah.breitung@vdh.virginia.gov

TB Data Registrar - **Donna Asby-Green**
Phone: 804-864-7907
E-mail: donna.asby-green@vdh.virginia.gov

45

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia.