

e-Compliance Training

Tuberculosis Infection Control - March 2021



THIS TRAINING SESSION IS RECOMMENDED FOR:

All healthcare workers (clinical and administrative) who share air space with patients. Employees at corporate or administrative locations (e.g., billing offices) where patients are never present are exempt from this training.

Training Objectives

The training on Mycobacterium Tuberculosis will provide participants with an understanding of the following:

- how TB spreads
- signs and symptoms of active TB
- understanding latent and active TB infections
- methods used to prevent TB transmission
- managing a patient with known or suspected active TB infection

TB Status Update

In its 2019 report, the Centers for Disease Control and Prevention (CDC) indicated that the United States continues to have one of the lowest TB case rates in the world, and the 2019 case count represents the lowest number of TB cases on record. Although this is great news overall, the CDC warns that progress to eliminate TB remains too slow in the US.

There were 8,916 reported TB cases in the United States in 2019 (a rate of 2.7 per 100,000 persons). This case rate is down from 2.8 per 100,000 in 2018. 2020 TB data from the CDC is not yet available.

TB Transmission

TB bacteria are spread through the air from one person to another. The TB bacteria are put into the air when a person with TB disease of the lungs or throat coughs, speaks, or sings. People nearby may breathe in these bacteria and become infected. TB particles, called droplet nuclei, are about 1 to 5 microns in diameter—less than 1/5000 of an inch. Droplet nuclei can remain suspended in the air for several hours, depending on the environment.

When a person breathes in air that has TB bacteria in it, the bacteria can settle in the lungs and begin to grow. TB disease in the lungs or throat can be infectious. This means that the bacteria can be spread to other people. Not everyone who is exposed to a person with an active TB infection becomes infected with *M. tuberculosis*. People with TB disease are most likely to spread it to people they spend time with every day, including family members, friends, and coworkers or schoolmates.

TB is NOT spread by:

- shaking someone's hand;
- sharing food or drink;
- touching bed linens or toilet seats;
- sharing toothbrushes; or
- kissing.

The likelihood of an exposed person becoming infected is affected by:

- The infectiousness or contagiousness of the TB patient (the number of tubercle bacilli that he/she expels into the air).
- Environmental factors such as ventilation, closeness of contact, air pressure, etc.



Interactive Training Reminder

Compliance Training is an interactive training program in which you can address questions with other staff members or supervisors to obtain clarification for situations in your work setting.

Write down any questions that you have about the training topic and address them with your Training Coordinator or supervisor.

- The proximity, frequency and duration of exposure to the infectious individual.
- The immune status of the exposed individual (a weakened immune system makes a person more likely to become infected upon exposure).

Latent and Active TB Infections

The term Latent TB Infection (LTBI) identifies a dormant/inactive infection. People with a LTBI do have TB germs in their body, but they are not capable of transmitting infection to others. Approximately 5-10% of those with LTBI will develop TB disease at some point in their lives.

A person with LTBI:

- Has no symptoms
- Doesn't feel sick
- Can't spread TB to others
- Usually has a positive TB skin test reaction or positive TB blood test
- In some cases, may develop TB disease if he/she does not receive treatment for latent TB infection

If you have contact with a person/patient who has LTBI, there is no need for testing or other preventive measures. However, contact with a person who has an active infection may necessitate testing to determine whether you have become infected. If you have LTBI, you will complete an annual symptom screening questionnaire to determine whether you have any signs or symptoms that would indicate your latent infection has progressed to active TB disease. You should also request an immediate evaluation between screenings if you notice any signs or symptoms.

Risk of Progression

If you have any of the following, you are at increased risk of progression from LTBI to active TB disease:

- diabetes mellitus
- smoker within past year
- end-stage renal disease
- leukemia or lymphoma
- silicosis
- cancer of head or neck
- intestinal bypass/gastrectomy
- chronic malabsorption
- body mass index ≤ 20
- history of chest x-ray findings suggestive of previous or inactive TB (no prior treatment).

Signs and Symptoms of Active TB Infection

People with an active infection of TB disease become ill from TB germs that are multiplying and destroying tissue in the person's body. They will begin to exhibit signs and symptoms of an active infection as outlined below. Persons with an active infection can transmit TB to others. In most cases, TB disease can be treated with a drug regimen. The drug regimen for TB is lengthy, and often involves directly-observed therapy to prevent drug resistance from developing.

Familiarize yourself with the following symptoms:

- *Fever and chills*– one of the earliest symptoms is a minimal to moderate temperature elevation occurring in the late afternoon or evening, usually accompanied by a feeling of euphoria and well-being. Temperature elevation may reach 103° F or higher as the disease progresses;



- *Night sweats* – the rise in body temperature is reversed at night, accompanied by profuse sweating;
- *Weight loss* – lack of appetite and minor weight loss with anorexia early in the disease, with increased weight loss as the disease progresses;
- *Chronic productive cough lasting 3 weeks or longer* with large amounts of purulent, greenish-yellow sputum, and sometimes blood;
- *Chest pain*;
- *Weakness or fatigue*

NEW STEP FOR BASELINE SCREENING: In 2019, the CDC introduced an additional step for baseline screening of healthcare workers. All new employees must complete a Baseline Individual TB Risk Assessment. This is a short questionnaire that looks at risk factors for TB, which helps employers make a determination when a skin or blood test is positive. This is because a significant number of false positives occur.

You are considered to be at increased risk for TB if any of the following statements are true:

- You had temporary or permanent residence of one month or more in a country with a high TB rate.
- You have current or planned immunosuppression.
- You have had close contact with someone who has had infectious TB disease since your last TB test.

TB Infection Control

The CDC developed guidance for TB Infection Control Programs, which are intended to limit the spread of TB in healthcare settings among both patients and health-

care professionals. As an airborne pathogen, TB can be transmitted in any setting, including homes or worksites. However, TB is most likely to be transmitted in health care settings when health care workers and patients come in contact with persons who have undiagnosed TB disease, who are not receiving adequate treatment, and who have not been isolated from others. OSHA enforces adherence to the CDC guidelines.

TB Testing for Healthcare Workers

Current CDC guidelines require baseline TB testing for all healthcare workers at each place of new employment. Most medical and dental practices will be classified as low risk and will therefore not require annual testing. Serial TB testing of health care personnel is not recommended unless there is a known exposure or ongoing transmission.

Note that in an institutional setting (i.e., hospital, nursing home, etc.) staff members might be required to participate in serial testing at that institution, due to the potentially higher risk level of such institutions. The institution will provide the test for any such workers, and the practice at which the workers are based is not responsible for providing the annual skin test (as long as the practice itself is low risk.)

Because TB is an airborne pathogen, and a public health threat, participation in baseline TB screening is mandatory, and may not be declined, unless there is documentation of a medical contraindication (which is very rare).

TB testing for pregnant staff members has always raised questions. The CDC states that TB skin testing is considered both valid and safe throughout pregnancy. TB blood



tests also are safe to use during pregnancy, but have not been evaluated for diagnosing TB infection in pregnant women. The CDC guidelines state that *pregnant health-care workers should be included in initial and serial testing (if serial testing is indicated for a facility) as part of an infection control program, because no contraindications for skin testing exist for pregnancy.*

Identification - Recognizing the signs and symptoms of active TB is the first step in managing the exposure risk for your practice. Administrative and clinical staff members with patient contact should be trained to identify patients who may have infectious TB and how to properly manage them to reduce the risk of transmission.

Reception personnel should be trained to ask coughing patients whether they have any of the signs or symptoms of active TB as identified above. If a patient, for example, indicates that a cough has been persistent, and he/she is experiencing heavy night sweats and/or rapid weight loss, chest pain, fatigue and weakness, etc., a nurse or other clinician should be called to evaluate the patient further and make a decision on how to properly handle his/her scheduled visit.

Patient Management – The CDC guidance has specific protocols and control measures for managing patients known or suspected to have TB, and for facilities that perform diagnostic testing for TB. Your practice is more than likely NOT equipped with a respiratory protection program, HEPA filtration units, etc., and low risk facilities are not required to have them. Therefore, you would refer patients with known/suspected TB infection back to

their primary care provider for testing, and/or to a facility equipped to deal with active TB, until they are no longer infectious.

The following patient management steps have been taken from the CDC guidelines, with some modification to ensure relevance to the practice setting. These steps should be followed when you have a patient with suspected TB (until you can remove them from the practice and refer them to a collaborating facility).

- Provide the patient with a surgical mask to wear while in the practice. Give him/her instruction to wear it throughout the visit, with additional instructions to cover his/her mouth and nose with a tissue when coughing or sneezing. Surgical masks are designed to prevent the individual's respiratory secretions from entering the air. If your specialty (e.g., dentistry) or the nature of the examination prevents a patient wearing a mask, you should reschedule the appointment/refer them elsewhere until they are no longer infectious.
- Patients should be isolated or separated from other patients and staff as quickly as possible. In some facilities, there is the availability of special isolation rooms (some having negative pressure or HEPA filtration units to prevent TB droplets from being circulated through the air).
- It should be a priority to complete the patient's treatment as soon as possible, and to provide the patient with a referral to a facility that is equipped to treat patients with TB disease for future treatment until they are no longer infectious. ●



e-Compliance Training Test

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E

NAME: _____

DATE: _____

SIGNATURE: _____

STAFF POSITION: _____

Return your test to your supervisor or Compliance Coordinator upon completion. Individual tests will be maintained to document participation and understanding of the information. Review the training information to find the correct answers to any questions that may have been missed.

1 The United States has been experiencing an increase in TB over the past several years.

Select One **T** **F**

2 People with a latent TB infection (LTBI) have TB germs in their body, but they are dormant, and are not capable of transmitting infection to others.

Select One **T** **F**

3 Healthcare facilities must have negative pressure rooms or HEPA filtration in place in case a person with active TB infection is seen/treated.

Select One **T** **F**

4 Persons with diabetes are at increased risk of progression from latent TB infection (LTBI) to active TB disease.

Select One **T** **F**

5 TB bacteria are put into the air when a person with TB disease of the lungs or throat coughs, speaks, or sings.

Select One **T** **F**

6 Current CDC guidelines require TB testing for all healthcare workers annually.

Select One **T** **F**

7 The CDC states that TB skin testing is considered both valid and safe throughout pregnancy.

Select One **T** **F**

8 The proximity, frequency and duration of exposure to the infectious individual affects whether an exposed person becomes infected.

Select One **T** **F**

9 TB is often spread when an infected person shares food or drink with a non-infected person.

Select One **T** **F**

10 Unexplained weight gain is a sign of active TB infection.

Select One **T** **F**