

e-Compliance Training

Tuberculosis Infection Control - March 2020



THIS TRAINING SESSION IS RECOMMENDED FOR:

All healthcare workers (clinical and administrative).

Training Objectives

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

- TB transmission;
- identifying a latent versus active TB infection;
- signs and symptoms of active TB infection;
- infection control;
- TB screening for employees; and
- patient management.

TB Status Update

In 2018, there were 9,025 cases of TB reported in the United States (data has not yet been tabulated for 2019). This number is down from 9,105 cases in 2017. Both the number of cases and the case rate have been on a slow but steady decline in the US since the 1990s, with a very slight uptick in cases in 2015. Approximately 13 million people in the US are living with a latent TB infection. The percentage of drug-resistant cases in the US has remained stable for the past 20 years.

TB Transmission

TB spreads differently from other familiar pathogens, such as HIV and hepatitis, which are spread by contact with infected blood or certain body fluids. TB is an airborne pathogen, meaning it is spread through the air. Tiny particles containing *M. tuberculosis* are expelled into the air when a person with active TB disease coughs, sneezes, speaks, or sings. These 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. TB in other parts of the body, such as the kidney or spine, is usually not infectious. 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.

Several factors affect whether an individual who is exposed to TB becomes infected:

- The infectiousness or contagiousness of the TB patient (the number of tubercle bacilli that he/she expels into the air).



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.

- Environmental factors such as ventilation, closeness of contact, air pressure, etc.
- 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, while active TB disease is capable of being spread to others. 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 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 CXR findings suggestive of previous or inactive TB (no prior treatment). Includes fibrosis or noncalcified nodules but does not include solitary calcified nodule or isolated pleural thickening.

Signs and Symptoms of Active Tuberculosis

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. In most cases, TB disease can be treated with a drug regimen.



There are several treatment regimens recommended in the U.S. for latent TB infection, including newer short-course drug regimens that are safe and effective.

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

Risk Factors

NEW STEP FROM CDC: The CDC has 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 there is a significant number of false positives that occur.

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

- You had temporary or permanent resident of one month or more in a country with a high TB rate. (All countries other than the US, Canada, Australia, New Zealand and Northern or Western Europe have a high TB rate.)
- You have current or planned immunosuppression (including HIV infection, organ transplant recipient, treatment with a TNF-alpha antagonist such as infliximab, etanercept, etc.), chronic steroids (equivalent of 15 mg/day or more for a month or more), or other immunosuppressive medication.
- You have had close contact with someone who has had infectious TB disease since your last TB test.

TB Infection Control

Back in the 1990s, 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 healthcare 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.



TB Testing for Healthcare Workers

Current CDC guidelines require baseline TB testing for all healthcare workers at each place of new employment. TB testing will be a one-time event upon hire at each place of employment. Annual TB testing of health care personnel is not recommended unless there is a known exposure or evidence of 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 of TB exposure. 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.

Baseline TB screening is required for all new hires in a healthcare facility. Employers can decide whether to administer the tuberculin skin test, or a blood test. New hires with documentation of a previous positive skin test will not be tested but will instead complete a symptom screening questionnaire. If utilizing the skin test, it is a two-step TST for new hires. If a new hire has documentation of a negative TST within the last 12 months, the employer will use the documentation as the first test and then perform a single test on the new employee. Lack of documentation for a TST performed within the last 12 months would require the employer to perform a two-step baseline on new hires. A single baseline test is required even if the new hire has had a two-step test recently at another place of employment. Because TB is an airborne pathogen, and a public health threat, participation in the

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 guidelines state that pregnant healthcare 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. Current guidelines issued by the American College of Obstetricians and Gynecologists (ACOG) emphasize that postponement of the diagnosis of infection with *M. tuberculosis* during pregnancy is riskier for mother and baby. Given the information from the CDC and ACOG, pregnant staff members **SHOULD** be included in the practice's TB testing process.

Identifying Patients - According to the CDC, 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.

Administrative personnel who are responsible for receiving patients into the practice should be trained to consult with clinical personnel on the need to implement policies for managing patients who exhibit signs and symptoms of TB. Clinical personnel can then evaluate the patient's condition and make a decision on how to properly handle the patient and his/her scheduled visit.



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.

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 encounter 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. Once the patient is no longer infectious, he/she would be welcome to be seen again in your facility. ●



e-Compliance Training Test

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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 TB is a bloodborne pathogen like HIV and hepatitis and is transmitted through contact with blood and certain other body fluids.

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

2 For safety reasons, pregnant workers should delay TB testing until after the baby is born.

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

3 In a low-risk facility, patients with suspected or confirmed active TB disease should be referred elsewhere until they are no longer infectious.

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

4 When you have a dormant/latent TB infection, known as LTBI, you are capable of transmitting TB to others.

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

5 Current CDC guidelines require baseline TB testing for all healthcare workers at each place of new employment, unless there is already documentation of a previous positive test.

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

6 If you have LTBI, you will complete an annual questionnaire to identify whether you have any signs or symptoms that indicate your latent infection has progressed to active TB disease.

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

7 One of the most common signs and symptoms of active TB disease is unexplained weight gain.

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

8 People with active TB disease are most likely to spread it to people they spend time with every day, including family members, friends, and coworkers or schoolmates.

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

9 A weakened immune system makes a person more likely to become infected when exposed to TB.

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

10 The percentage of drug-resistant cases of TB in the United States has been rising steadily over the past decade.

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