

# e-Compliance Training

## Tuberculosis Infection Control - March 2022



### 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:

- the airborne nature of TB transmission
- signs and symptoms of active TB
- latent versus active TB infections
- preventing TB transmission in medical and dental care
- managing patients with known or suspected active TB infection

### TB Rates in the US

The Centers for Disease Control and Prevention (CDC) indicated that the 2020 case count represents another substantial decline in cases. However, the COVID-19 pandemic probably affected reported TB incidence in the United States in several ways, including reduced transmission due to precautions for COVID, and some underreporting/underdiagnoses.

There were 7,174 reported TB cases in the United States in 2020 (a rate of 2.2 per 100,000 persons). This case rate is down from 2.7 per 100,000 in 2019. 2021 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 expelled 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.

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 later develop active 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 of active TB infection. Some persons with LTBI

are recommended to receive a drug regimen intended to prevent the LTBI from progressing to active infection. B

### **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  $\leq 20$
- 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

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

- You resided for 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**

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. Annual 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.

Baseline TB screening is required for all new hires in a healthcare facility. 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 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.

**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 TB skin or blood test is positive. This is because a significant number of false positives occur. Your employer may utilize a two-step TB skin test or a blood test for baseline screening.

**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.

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, then 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 organization may or may not have a respiratory protection program and HEPA filtration units in place. Low risk facilities (as documented in a TB Risk Assessment) are not required to have such items. 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 settings where patients with TB are not ordinarily expected to be seen. These steps should be followed when you have a patient with suspected TB:

- 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. If your specialty (e.g., dentistry) or the nature of the examination prevents a patient wearing a mask, you should reschedule the appointment or provide a referral.
- 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).



- 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 until he/she is no longer infectious.
- Allow sufficient air exchanges to occur prior to re-entry into a room occupied by a person with suspected or known active TB infection.

### **Respiratory Protection Program**

If your employer determines through a hazard assessment that respirators are required to protect employees from TB exposure in the workplace, a Respiratory Protection Program must be established that includes medical evaluation, fit-testing and training for affected employees. A medical evaluation verifies that workers are healthy enough to tolerate use of respiratory protection.

The use of respiratory protection can reduce your risk of being exposed to infectious TB droplet nuclei expelled into the air by a TB-positive patient. The respirator units selected to limit the exposure to tuberculosis are certified by NIOSH as having the ability to filter particles one micron in size in an unloaded state with filter efficiency equal to or greater than 95%. These units are known as particulate respirators. Particulate respirators, such as N95s, are considered tight-fitting respirators.

### **User Seal Check**

The employer will ensure that each employee who uses a tight-fitting respirator (e.g., N95 respirator) performs a user seal check to determine if the respirator is proper-

ly seated to the face each time the respirator is put on. Acceptable methods of user seal checks include:

**Positive pressure seal check** - Once you have conducted proper hand hygiene and properly donned the respirator, place your hands over the facepiece, covering as much surface area as possible. Exhale gently into the facepiece. The face fit is considered satisfactory if a slight positive pressure is being built up inside the facepiece without any evidence of outward leakage of air at the seal. Examples of evidence that it is leaking could be the feeling of air movement on your face along the seal of the facepiece, fogging of your glasses, or a lack of pressure being built up inside the facepiece. If the particulate respirator has an exhalation valve, then performing a positive pressure check may not be possible unless the user can cover the exhalation valve. In such cases, a negative pressure check must be performed.

**Negative pressure user seal check** (i.e., suck air in). Once you have conducted proper hand hygiene and properly donned the respirator, cover the filter surface with your hands as much as possible and then inhale. The facepiece should collapse on your face and you should not feel air passing between your face and the facepiece.

Your employer will ensure that each employee corrects any problems discovered during the user seal check. If air leaks around the nose, the employee will be instructed to use both hands to readjust how the respirator sits on his/her face or adjust the nosepiece, if applicable. Straps along the sides of the employee's head may be readjusted until a proper seal is achieved. ●



# e-Compliance Training Test

## Tuberculosis Infection Control - March 2022

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

**Select One**      **T**      **F**

**2** TB rates have been increasing in the United States in the past five years.

**Select One**      **T**      **F**

**3** TB bacteria are expelled 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.

**Select One**      **T**      **F**

**4** A person with latent TB infection (LTBI) experiences symptoms and feels sick.

**Select One**      **T**      **F**

**5** Patients with known or suspected active TB infection/disease should be asked to wear a mask while in your facility, isolated from other patients, and their treatment expedited.

**Select One**      **T**      **F**

**6** TB is often spread when people shake hands with one another.

**Select One**      **T**      **F**

**7** If respiratory protection is required in your setting, a user seal check should be performed once a week.

**Select One**      **T**      **F**

**8** Persons with diabetes mellitus are at increased risk of progression from LTBI to active TB disease.

**Select One**      **T**      **F**

**9** A chronic, productive cough lasting more than three weeks is a symptom of active TB infection.

**Select One**      **T**      **F**

**10** Baseline TB screening is required for all new hires in a healthcare facility. 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) or a previous positive test.

**Select One**      **T**      **F**