

# TUBERCULOSIS »» WHAT NURSES NEED TO KNOW

Tuberculosis (TB) is a respiratory infection caused by the bacteria *Mycobacterium tuberculosis*. TB continues to be a global human health hazard with 10.8 million cases and 1.25 million deaths in 2023. The Kansas City area is currently experiencing a large **outbreak** with more than 60 active cases and 70 latent cases identified since 2024.

## WHAT IS THE DIFFERENCE BETWEEN LATENT AND ACTIVE TUBERCULOSIS INFECTION?

Patients with latent tuberculosis infection (LTBI) are asymptomatic, while those with active TB disease have symptoms and can infect others. Once infected, some individuals may progress to clinical disease while others' immune systems control bacterial growth for long periods of time. Individuals with LTBI remain at risk of **reactivation** and development of active TB until treatment.

## HOW IS TUBERCULOSIS TRANSMITTED?

Tuberculosis is transmitted through the air. Infectious aerosols are generated when an infected person speaks, coughs, sneezes, and more and can travel through the air. Once inhaled, the bacteria can cause infection when they settle in the alveoli. People are most likely to **develop** active TB disease within the first two years after infection.

Patients with active TB disease are infectious. Infectiousness of TB patients can vary with symptomatology and other factors. Some patients with active TB disease can spread to most **close contacts**, while others may infect few of their contacts. Individuals can remain infectious over **two months** post-treatment initiation.

## WHAT ARE THE SYMPTOMS OF TUBERCULOSIS?

Active TB disease is characterized by a persistent cough that lasts three weeks or longer, chest pain, coughing blood or sputum, loss of appetite, malaise, fatigue, unintended weight loss, fever, and/or chills or night sweats. TB disease can often be missed or misdiagnosed — average, active TB patients **experienced** 3.89 health care visits representing missed diagnosis opportunities.

## HOW IS TUBERCULOSIS DIAGNOSED?

TB infection can be diagnosed through a combination of **tests**, most commonly a TB blood test (known as an IGRA) or skin test (known as a TST or PPD). **Diagnosis** of active TB disease can also involve additional steps such as symptom assessment, chest x-ray, and other measures.

## HOW IS TB INFECTION TREATED?

TB infection is **treated** with a combination of antibiotics. Treatment typically requires four to nine months of daily antibiotics, depending on the drug resistance of the TB strain causing infection.

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## WHAT PROTECTIONS DO NURSES AND OTHER HEALTH CARE WORKERS NEED TO CARE FOR A PATIENT WITH SUSPECTED OR CONFIRMED ACTIVE TB?

To protect health care workers from occupational exposure to and infection with TB, health care employers should implement a multilayered infection prevention plan, including:

- » **Patient and Visitor Screening** — Screen patients and visitors before or immediately upon arrival at the facility. Delays in identification of patients with active TB infections can lead to a high number of exposures.
- » **Isolation and Source Control** — Patients with suspected or confirmed active TB should be isolated promptly in an airborne infection isolation room (AIIR).
- » **Ventilation** — Enhanced ventilation can help reduce the risk of transmission in lobbies, waiting rooms, and other areas of the facility where patients and/or visitors with unidentified active TB symptoms could be present. Ventilation improvements include increasing air changes per hour and filtration of recirculated air. **Portable HEPA filter units** can also provide an additional layer of protection to reduce the level of infectious aerosols in indoor spaces.
- » **Personal Protective Equipment** — A respirator at least as protective as a fit-tested, NIOSH-approved N95 respirator must be worn by any health care worker who interacts with a possible or confirmed active TB patient, including prior to entering an AIIR used for TB isolation. Powered air-purifying respirators (PAPRs) and elastomeric respirators provide higher levels and more reliable protection than N95s.
- » **Training and Education** — Training and education should be provided to all staff who might encounter a TB patient and should include information on current TB outbreaks, how to recognize signs and symptoms, and the employer's exposure control plan to prevent TB exposure.
- » **Exposure Notification and Contact Tracing** — Employers should coordinate with the local health department to conduct a thorough exposure investigation and contact tracing. Employers should immediately notify staff who were potentially exposed and offer testing for LTBI, free of charge and in a location and time convenient to the employee.
- » **Paid Precautionary Medical Removal** — Employers should provide paid precautionary medical removal for any nurse or other health care worker who is removed from the workplace due to occupational exposure to or infection with TB.



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