



Tuberculosis Fact Sheet

What is tuberculosis?

Tuberculosis is a bacterial infection caused by a bacteria called *Mycobacterium tuberculosis*. It is a disease the most commonly affects the lungs but can cause infection in many different organs of the body.

Transmission of tuberculosis

Tuberculosis is spread by airborne transmission when the tuberculosis bacteria is expelled into the air in tiny droplets by a person with active TB disease. The TB bacteria can then be inhaled into the lungs of another person, causing a new infection. Large drops of respiratory secretions and fomites are unimportant in transmission, and special housekeeping measures for dishes and bed linens are unnecessary.

Transmission of TB is affected is affected by three things

1. The infectiousness of the patient
 - a. The more live bacteria an infected person expels into the air, the more likely they are to transmit the infection
 - b. Cases with positive smears are considered more infectious
 - c. Treatment with anti-tuberculosis medication rapidly reduces the infectiousness of the infected person.
2. Environmental conditions
 - a. Small, enclosed spaces or “high density” living situations can make transmission easier. Well ventilated and open spaces reduce transmission. TB is also inactivated by UV light.
 - b. The “closeness” of contact affects the risk of transmission. For example, persons who share the same living space, such as sleeping in the same room, are more likely to be infected.
3. Duration of exposure
 - a. Transmission takes time. Persons exposed for longer periods of time are at higher risk of transmission. The risk of transmission to someone have brief contact is very small (this is not quantifiable)

Most exposed persons do NOT become infected when exposed to a person with active disease. Although in theory one droplet nucleus may be sufficient to establish infection, prolonged exposure and multiple aerosol inocula are usually required. Approximately 20-30% of household contacts of infectious TB will be found to have latent TB infection (evidence of exposure to and infection with the TB bacteria) and 1% will have active Tb disease.

Isolation for tuberculosis

Patients who have or are suspected to have infectious TB are isolated from others to reduce the risk of transmitting the disease to others. In health care settings such as hospitals, this often includes the use of special airborne isolation rooms so that air from the infected patient does not come in contact with others. Clients being treated at home who may be infectious are asked to isolate themselves by doing things such as not having visitors and staying in their own home until they are safe to be around others.

Tuberculosis treatment

Tuberculosis is treated with a combination of medications over a period of at least 6 months. For drug susceptible TB, the initial phase of treatment includes the use of 3 to 4 anti-TB medications for 8 weeks. This is then followed by an additional 4 months of therapy using a combination of two medications.

Directly observed therapy is the standard of care for ALL patients with active TB disease. This involves a treatment program of TB medications that are administered and monitored by health care workers with expertise in the treatment of TB. The New Mexico Department of Health (NMDOH) provides care and treatment for all individuals with active disease due to tuberculosis. Treatment includes a prescribed program of directly administered anti-tuberculosis medications along with nursing care, physician consultation, and laboratory monitoring.

Administration of Effective Treatment

TB patients rapidly become less contagious after starting effective TB medications. Medication quickly reduces the number of bacteria and kills the TB bacteria in the lung. However, the exact rate of decrease cannot be predicted for individual patients. In general, many persons on effective therapy are considered not contagious after 2 to 4 weeks of effective therapy.

The risk to the general public in the setting of a public space exposure (i.e. on the street, in a store, in a restaurant) is very, very small. These types of brief low risk exposures are not tracked as part of contact investigations.

Points about Contact Investigations

The Centers for Disease Control and Prevention have very detailed guidance on how to perform contact investigations for clients with active TB. NMDOH follows this guidance and has nurses with special training and experience in contact investigation to help prioritize who should be tested, how contacts should be evaluated and tested, and if further treatment should be offered. Evaluation of contacts involves gathering information about the infected person and their contacts, other medical illnesses, a review of any symptoms, and may include special tests such as a TB skin test and/ or a blood test.

Court ordered therapy.

This strategy is used very infrequently and is pursued only for clients who have not complied with recommended treatment for their tuberculosis and may be at risk for spreading the disease to others or for developing a treatment resistant form of tuberculosis. A court order is pursued when all other methods to support the patient in their treatment have failed to bring about adherence with treatment.

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