

Drug-Resistant Tuberculosis

A Fact Sheet for Botswana

What is tuberculosis (TB)?

Tuberculosis (TB) is a disease caused by germs that are spread from person to person through the air. TB usually affects the lungs, but it can also affect other parts of the body, such as the brain, the kidneys, or the spine. In most cases, TB is treatable; however, persons with TB can die if they do not get proper treatment.

What is multidrug-resistant tuberculosis (MDR TB)?

Multidrug-resistant TB (MDR TB) is TB that is resistant to at least two of the best anti-TB drugs, isoniazid and rifampicin. These drugs are considered first-line drugs and are used to treat all persons with TB disease.

What is extensively drug resistant tuberculosis (XDR TB)?

Extensively drug resistant TB (XDR TB) is a relatively rare type of MDR TB. XDR TB is defined as TB which is resistant to isoniazid and rifampin, plus resistant to any fluoroquinolone and at least one of three injectable second-line drugs (i.e., amikacin, kanamycin, or capreomycin). Because XDR TB is resistant to first-line and second-line drugs, patients are left with treatment options that are much less effective, more toxic and costly.

XDR TB is of special concern for persons with HIV infection or other conditions that can weaken the immune system. These persons are more likely to develop TB disease once they are infected, and also have a higher risk of death once they develop TB.

How is TB spread?

Drug-susceptible TB and MDR TB are spread the same way. TB germs are put into the air when a person with TB disease of the lungs or throat coughs, sneezes, speaks, or sings. These germs can float in the air for several hours, depending on the environment. Persons who breathe in the air containing these TB germs can become infected.

TB is not spread by

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

How does drug resistance happen?

Resistance to anti-TB drugs can occur when these drugs are misused or mismanaged. Examples include when patients do not complete their full course of treatment; when health-care providers prescribe the wrong treatment, the wrong dose, or length of time for taking the drugs; when the supply of drugs is not always available; or when the drugs are of poor quality.

Who is at risk for getting MDR TB and XDR TB?

Drug resistance is more common in people who:

- do not take their TB medicine regularly
- do not take all of their TB medicine as told by their doctor or nurse
- develop active TB disease again, after having taken TB medicine in the past

- come from areas of the world where drug-resistant TB is common
- have spent time with someone known to have drug-resistant TB disease

How can MDR TB and XDR TB be prevented?

The most important thing a person can do to prevent the spread of drug-resistant tuberculosis is to take all of their medications exactly as prescribed by their health care provider. No doses should be missed and treatment should not be stopped early. Patients should tell their health care provider if they are having trouble taking the medications. If patients plan to travel, they should talk to their health care providers and make sure they have enough medicine to last while away.

Health care providers can help prevent MDR TB and XDR TB by quickly diagnosing cases, following recommended treatment guidelines, monitoring patients' response to treatment, and making sure therapy is completed.

Another way to prevent getting drug-resistant TB is to avoid exposure to known MDR TB and XDR TB patients in closed or crowded places such as hospitals, prisons, or homeless shelters. If you work in hospitals or health-care settings where TB patients are likely to be seen, you should consult infection control or occupational health experts. Ask about administrative and environmental procedures for preventing exposure to TB.

Once those procedures are implemented, additional measures could include using personal respiratory protective devices.

Can the TB vaccine help prevent XDR TB?

The vaccine for TB disease, called Bacille Calmette-Guérin (BCG), is used in Botswana to prevent severe forms of TB in children. It does not prevent TB in adults.

What are the symptoms of TB disease?

The general symptoms of TB disease include feelings of sickness or weakness, weight loss, fever, and night sweats. The symptoms of TB disease of the lungs may also include coughing, chest pain, and coughing up blood. Symptoms of TB disease in other parts of the body depend on the area affected. If you have these symptoms, you should contact your doctor or local clinic.

How long does it take to find out if you have MDR TB or XDR TB?

If TB bacteria are found in the sputum (phlegm), the diagnosis of TB can be made in a day or two, but this finding will not be able to distinguish between drug-susceptible (regular) TB and drug-resistant TB. To determine drug susceptibility, the bacteria need to be grown and tested in a laboratory. Final diagnosis for TB, and especially for MDR TB and XDR TB, may take from 6 to 16 weeks.

What risk do health care workers face with XDR TB, particularly those who may be HIV positive themselves?

To protect health-care workers who may have come into contact with infectious TB patients, appropriate and strict infection control measures must be implemented in health-care facilities at all times. Health care workers are also encouraged to make sure they are aware of their HIV status so that they can avoid putting themselves at risk of exposure.

What is the link between XDR TB and HIV/AIDS?

In places where XDR TB is most common, people living with HIV are at greater risk for developing the disease and dying because of their weakened immunity.

If there are a lot of HIV-infected people in these places, then there will be a strong link between XDR TB and HIV. Fortunately, XDR TB is not widespread. For this reason, the majority of people with HIV who develop TB will have drug-susceptible or ordinary TB, and can be treated with standard first-line anti-

TB drugs. For those with HIV infection, treatment with antiretroviral drugs will likely reduce the risk of developing XDR TB, just as it does with ordinary TB.

What Is The Evidence Relating To XDR TB?

Findings from a joint WHO/U.S. Centers for Disease Control and Prevention (CDC) survey of 14 supranational TB reference laboratories using samples from 48 countries were published in CDC's Morbidity and Mortality Weekly Report in March 2006. It documented XDR TB in all regions of the world, with high rates in some former Soviet Union countries and parts of Asia.