What Is XDR TB?

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The student will be able to...

list three signs of XDR TB
recall how XDR TB is transmitted
explain who needs to have a TB test
describe how XDR TB affects the body
define what XDR TB is
What is tuberculosis (TB)?

TB, or tuberculosis, is a disease caused by bacteria called *Mycobacterium tuberculosis*.

The bacteria can attack any part of your body, but they usually attack the lungs.

TB bacteria become active if the immune system can't stop them from growing.

People who are infected with TB do not feel sick, do not have any symptoms, and cannot spread TB.

**TB disease was once the leading cause of death in the United States.**
What is XDR TB?

Extensively drug-resistant tuberculosis

(XDR TB) is a relatively rare type of multi-drug-resistant tuberculosis (MDR TB).

It is resistant to almost all drugs used to treat TB, including the two best first-line drugs: XDR TB is also resistant to the best second-line medications: and at least one of three injectable drugs.
Countries with XDR-TB
Confirmed cases to date

Argentina
Armenia
Bangladesh
Brazil
Chile
Czech Republic
Ecuador
Georgia
Germany
Rep of Korea
Latvia
Mexico
Peru
Portugal
Russian Federation
South Africa
Spain
Thailand
UK
USA

Based on MMWR March 2006 data, and information provided to WHO Stop TB Department. December 2006
How is XDR TB spread?

Drug-susceptible (regular) TB and XDR 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.
Probability TB Will Be Transmitted

- Infectiousness of person with TB
- Environment in which exposure occurred
- Duration of exposure
- How strong is the organism
XDR TB is not spread by

- Shaking someone’s hand
- Sharing food or drink
- Touching bed linens or toilet seats
- Sharing toothbrushes
- Kissing
- Smoking or sharing cigarettes
What are the symptoms of XDR TB?

The general symptoms of TB disease include:
- Feelings of sickness
- Weakness
- Weight loss
- Fever
- Night sweats

The symptoms of TB disease of the lungs may also include:
- Coughing
- Chest pain
- Coughing up blood
Who is at risk for developing XDR TB?

- Do not take their TB medicine regularly
- Do not take all of their TB medicines 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

In the United States, 49 cases of XDR TB have been reported between 1993 and 2006. (CDC)
Why is XDR TB so serious?

Because XDR TB is resistant to the most powerful first-line and second-line drugs, patients are left with treatment options that are much less effective and often have worse treatment outcomes. XDR TB is of special concern for persons with HIV infection or other conditions that can weaken the immune system.
Groups that should be tested for TB:

Persons at higher risk for exposure to TB:

- Close contacts of a person known or suspected to have TB
- Foreign-born persons from areas where TB is common
- Residents and employees of high-risk congregate settings
- Health care workers who serve high-risk clients
Groups that should be tested for TB:

Persons at higher risk for exposure to TB:

- Persons with HIV infections
- Persons recently infected with *M. tuberculosis*
- Persons with certain medical conditions
- Persons who inject illicit drugs
- Persons with a history of inadequately treated TB
Tuberculin skin test (20 mm in diameter) was seen within 72 hours.
X-Ray of a normal healthy chest.

Healthy Lung
X-Ray of an infected chest with Tuberculosis
How can I prevent myself from developing TB?

Avoid close contact or prolonged time with known TB patients in crowded, enclosed environments like clinics, hospitals, prisons, or homeless shelters.

50% of those who contract XDR (TB) will die… (CDC)
What should I do if I have been exposed to someone who has XDR TB?

If you think you have been exposed to someone with TB disease, you should contact your doctor or local health department about getting a TB skin test or the QuantiFERON-TB Gold test (QFT-G), a blood test.
Can XDR TB be treated?

- TB control programs have shown that cure is possible for up to 30% of affected people.

- Successful outcomes also depend greatly on the extent of the drug resistance, the severity of the disease and whether the patient’s immune system is compromised.

- Treatment requires that all six classes of second-line drugs are available to doctors who have special expertise in treating XDR TB.

Source: WHO
XDR TB and HIV?

- TB is one of the most common infections in people living with HIV/AIDS.

- In places where XDR-TB is most common, people living with HIV are at greater risk of becoming infected with XDR-TB.

- There will be a strong link between XDR-TB and HIV. Fortunately, in most of the places with high rates of HIV, 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.
Resources...

- American Lung Association
  www.lungusa.org

- Centers for Disease Control
  www.cdc.gov

- Indiana State Department of Health
  www.in.gov/isdh

- World Health Organization
  www.who.int/en