

# What Is XDR TB ?

James R. Ginder, MS, WEMT,PI, CHES  
Health Education Specialist

Jeremy D. Hamilton  
Health Education Intern

Hamilton County Health Department  
[www.co.hamilton.in.us](http://www.co.hamilton.in.us)



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 effects the body

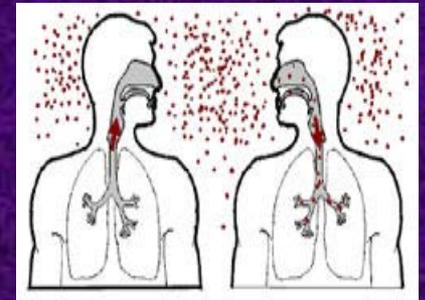
define what XDR TB is



# What is tuberculosis (TB)?

- TB, or tuberculosis, is a disease caused a **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

XDR TB

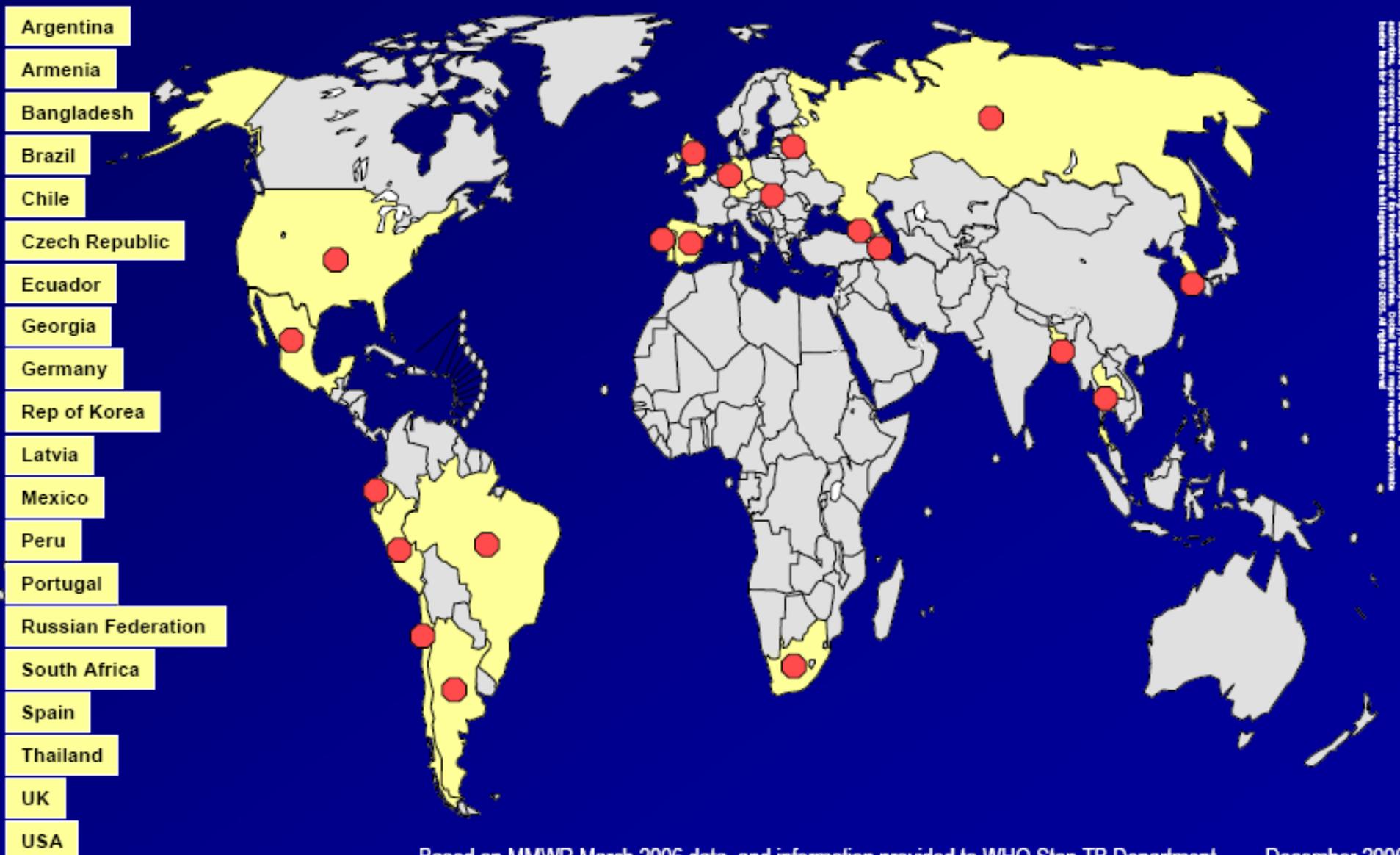


Non XDR TB



# Countries with XDR-TB

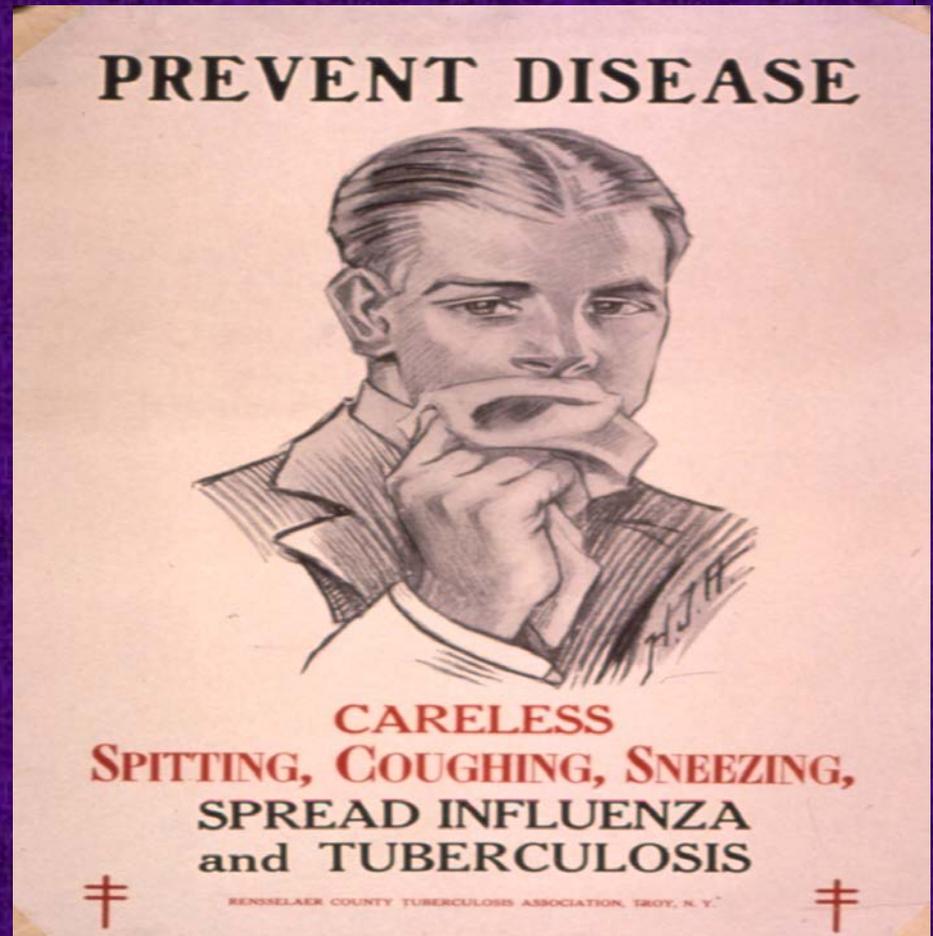
## Confirmed cases to date



# 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?

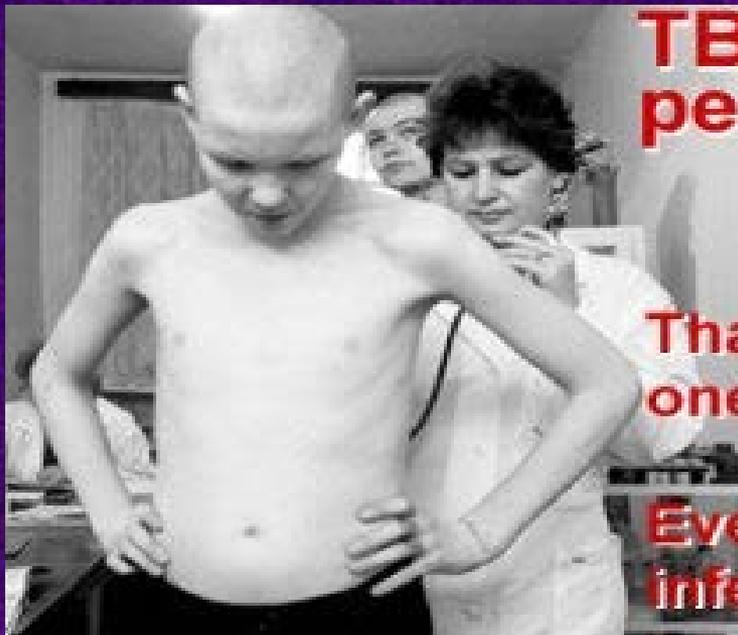
- Do not take their TB medicine regularly
- Do not take all of their TB medicines as told by their doctor or nurse
- Develop active TB disease again, after having taken TB medicine in the past
- Come from areas of the world where drug-resistant TB is common
- Have spent time with someone known to have 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**.



**TB kills over 2 million people every year.**

**That's 10,000 people every day—  
one person every 10 seconds.**

**Every second someone is newly  
infected with TB.**

# Groups that should be tested for TB..

## Persons at higher risk for exposure to TB:

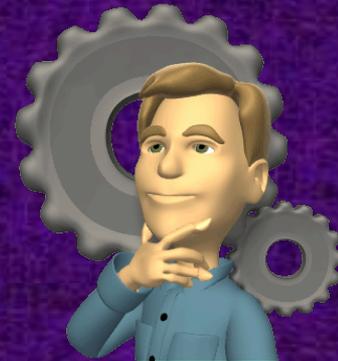
- ↑ Close contacts of a person known or suspected to have TB
- ↑ Foreign-born persons from areas where TB is common
- ↑ Residents and employees of high-risk congregate settings
- ↑ Health care workers who serve high-risk clients



# 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



# TB Skin Test

PPD (taken from dead TB bacteria) is injected into the area

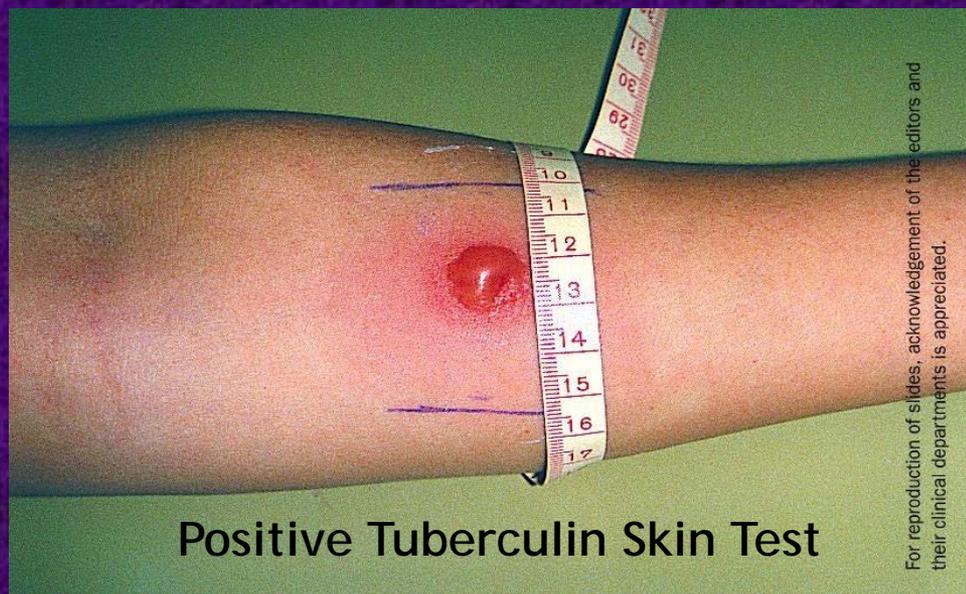
Purified Protein Derivative Standard (PPD)



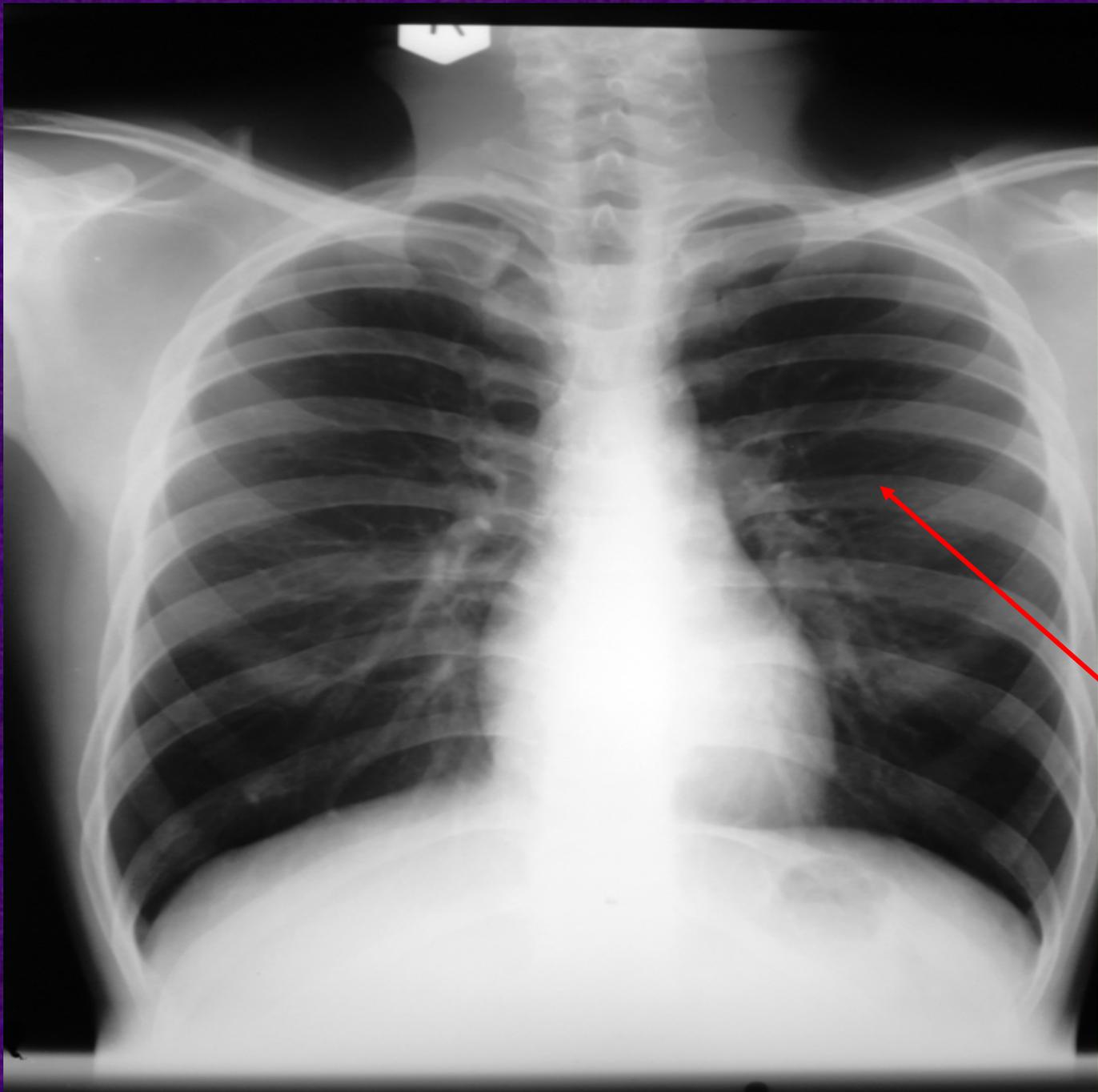
Mantoux Skin Test



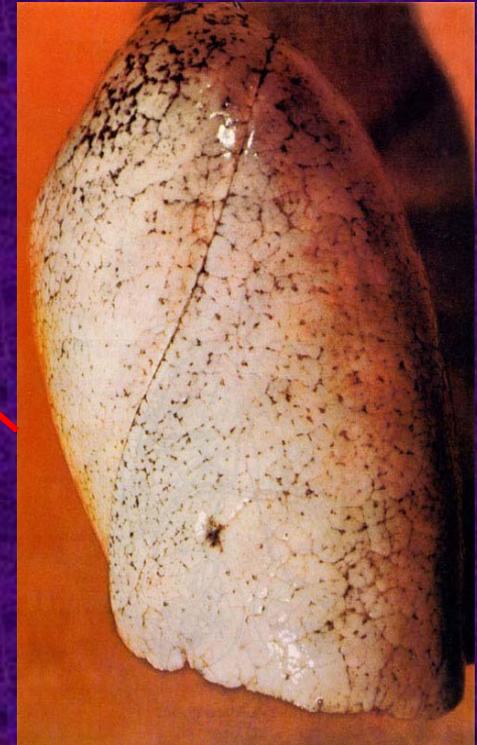
Tuberculin skin test (20 mm in diameter) was seen within 72 hours.



Positive Tuberculin Skin Test

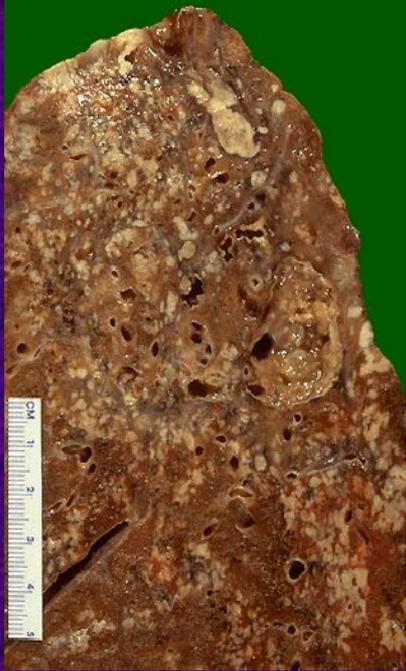


X-Ray of a  
normal healthy  
chest.

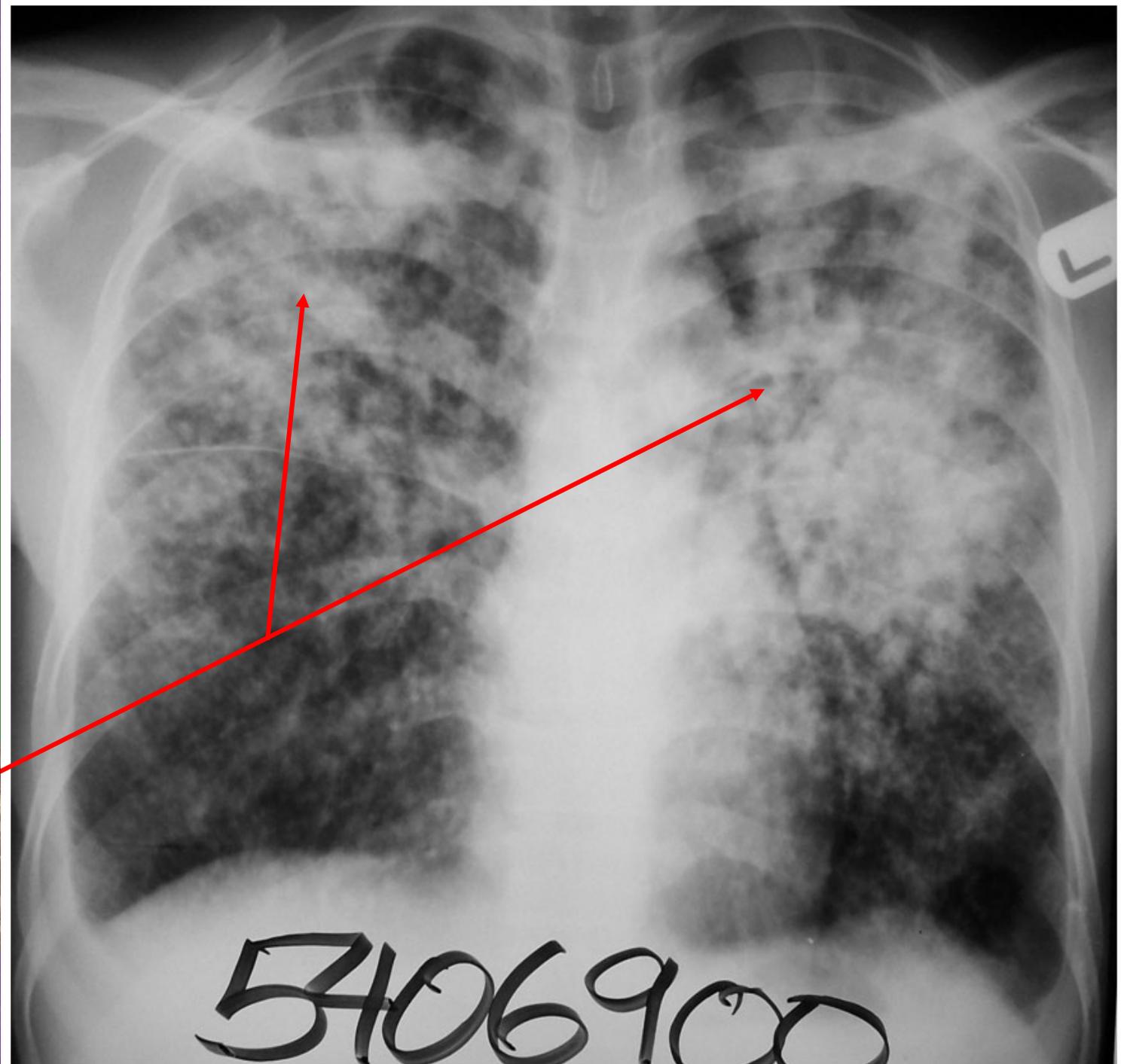


*Healthy Lung*

X-Ray of an  
infected  
chest with  
Tuberculosis



*TB Infected Lung*



# 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



# 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](http://www.lungusa.org)
- Centers for Disease Control  
[www.cdc.gov](http://www.cdc.gov)
- Indiana State Department of Health  
[www.in.gov/isdh](http://www.in.gov/isdh)
- World Health Organization  
[www.who.int/en](http://www.who.int/en)

