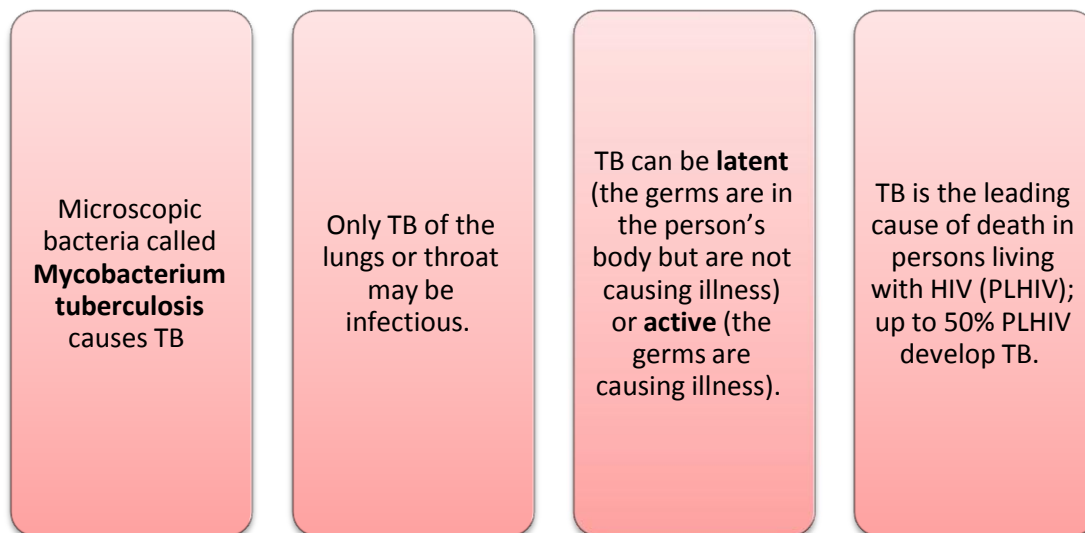


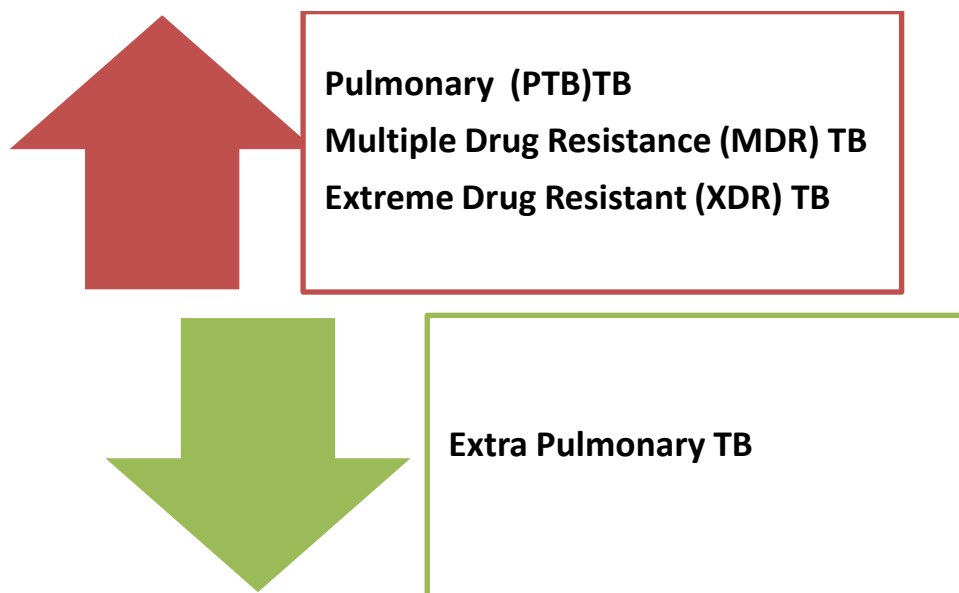
## **SWABCHA Fact Sheet: Tuberculosis (TB)**

*Text sourced from the SWABCHA Change Agent Training Guide - 2012*

### **Introduction to TB**



### **Types of TB**

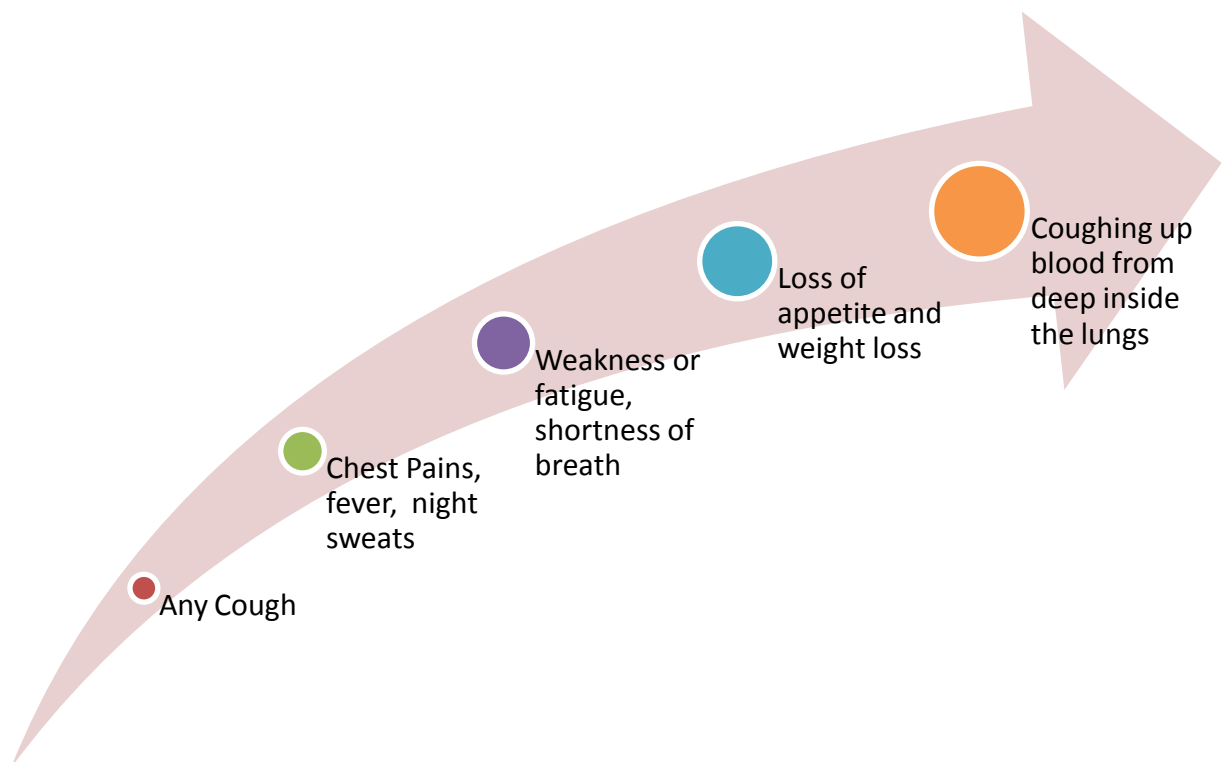


## Two major types of TB

There are two major types which include, the Pulmonary TB that complicates to MDR and XDR TB and it is highly infectious. The second one being the Extra-pulmonary TB that is when the disease develops outside the lungs where it can affect the following sites;

- Lymph nodes-tuberculosis lymphadenitis-the most common form
- Pleural cavity around the lungs-pleural TB-most common in PLHIV
- Bones and joints-skeletal TB
- Central nervous system (CNS)-i.e. tuberculosis meningitis
- GI tract-gastrointestinal TB
- Genitourinary-genitourinary TB
- Pelvic cavity (peritoneum)-tuberculosis peritonitis
- Membrane around the heart (pericardium)-tuberculosis pericarditis

## Pulmonary TB Signs and Symptoms



## TB Transmission

1. TB is transmitted through the air from exposure to **bacilli** in the sputum.

2. When an infected person coughs or sneezes (or strongly expels air from their lungs) tiny drops which contain the **TB bacilli** are released and can be inhaled by

3. TB bacilli inhaled through the nose or mouth can reach the windpipe (**trachea**) and the dividing tubes (**bronchi**) that lead to the lungs

4. After entering lungs, TB initially infects two important immune system cells, **dendritic cells**- which patrol the body looking for foreign invaders (antigens) and **macrophages**-ingests the pathogens. TB hijacks this

5. As part of this process dendritic cells and macrophages transport the TB to the immune system control centers called **lymph nodes**

6. **Lymph nodes** are located throughout the body in a network, largely around the neck, armpits, abdomen and groin. They serve as a meeting place and communication center for immune system cells

7. In the lymph nodes the TB bacilli is chopped into smaller pieces (**antigens**) and presented to **T and B** cells. T cells coordinate the immune system response to TB

8. When TB is presented to the immune system, TB specific **CD4 cells and CD8 T cells** begin to make copies of themselves in thousands, to target the TB trafficking back to the lungs to try and contain

9. The immune system response that occurs when someone is first exposed to TB is called **primary TB**, it is rare to cause illness at this point but if it does it is called **progressive primary**

10. The TB bacilli that cannot be eliminated is trapped in **granuloma**-an enclosed structure with TB infected cells in the middle and TB specific CD4 and CD8 T cells surrounding them. This is called **Latent TB Infection** (LTBI)

11. Progressive primary TB disease is manifested in the lungs (**pulmonary TB**) or in other organs (**extra pulmonary TB**). Usually the TB spread to multiple organs (**miliary TB**).

12. **Post Primary TB** is when the TB breaks out of latency and causes disease or when a person is re-infected. Mostly pulmonary TB, damaging the lung tissues, connecting to the air passages (bronchi), expelled into the air causing onward

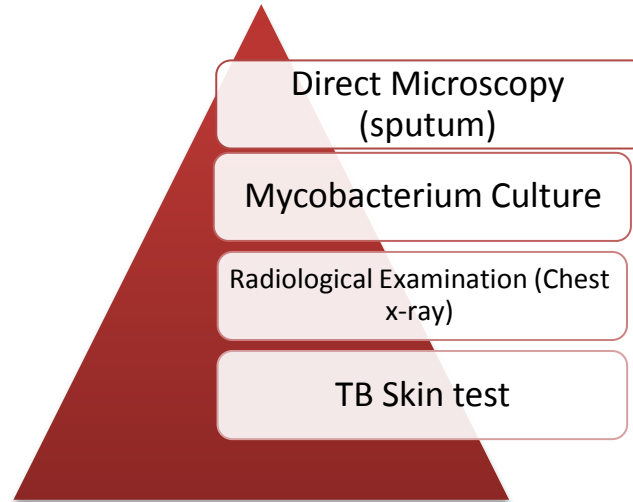
## TB and HIV

HIV weakens the immune system and gives chance to the latent TB germ to grow, multiply and cause active TB then you will be ill. This is the TB that is infectious.

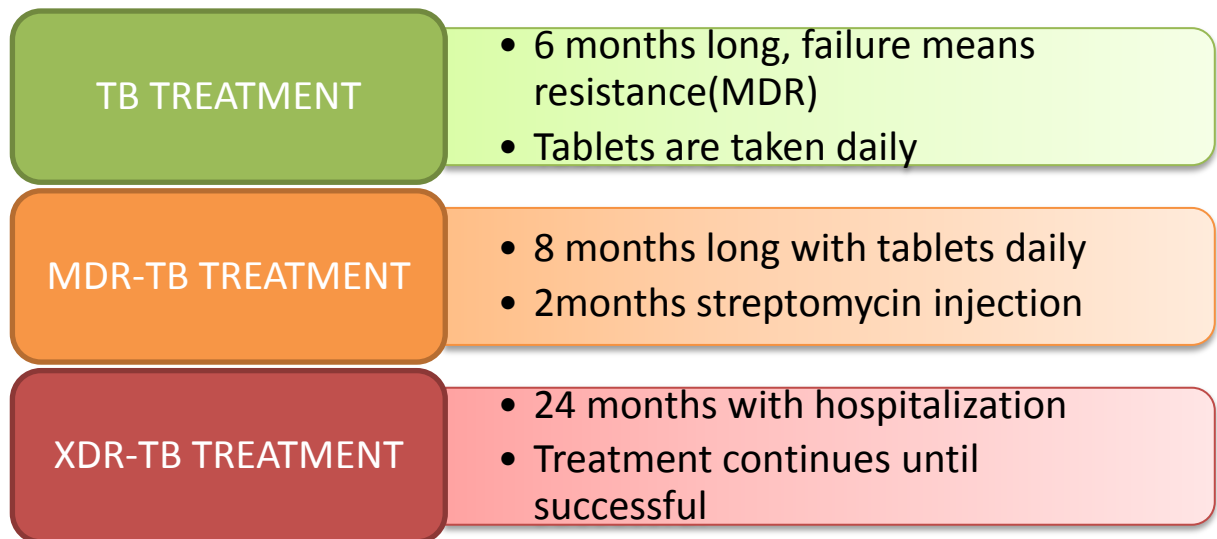
- HIV increase the rate of TB recurrence in PLHIV
- TB is the leading opportunistic infection
- TB is responsible for up to 50% AIDS related deaths
- Two thirds of PLHIV in Africa lack access to effective TB diagnosis, prevention and treatment
- Our bodies do not easily allow latent TB to grow into active TB
- TB patients who are on treatment may not transmit it
- Early identification of signs and symptoms of TB is important to effective diagnosis, treatment and reduces transmission of TB

<b>TB</b>	<b>HIV</b>
Mycobacterium tuberculosis is a big bacteria made of DNA	HIV is a tiny retrovirus made of RNA
TB has about 4 000 genes	HIV has nine genes
TB reproduces by dividing into two in a process called binary fission	HIV needs to take over our own cells machinery to replicate
TB has been infecting humans for millions of years	HIV has been around for about 70 years
TB bacilli reproduce very slowly, once every 16-20 hours	
Anti TB drugs work by interfering with different steps of the TB copying process	
Develop mutations which lessen the effectiveness of anti-TB drugs	
TB treatment involves combination therapy, targeting the TB at multiple places and making it harder for TB to develop resistance	

## TB Diagnosis options



## TB Treatment



## TB Prevention Measures

