INTRODUCTION

According to the WHO, it is estimated that one-third of the 33 million people living with HIV and AIDS worldwide are co-infected with tuberculosis (TB). Sub-Saharan Africa is the hardest hit region, with a 70% co-infection rate. If TB is left unaddressed, in the next 20 years almost one billion people will become newly infected, and 35 million will die of it.

In response to this concern, the World Health Organisation (WHO) has issued a TB/HIV policy recommending interventions to reduce TB morbidity and mortality in people living with HIV, namely the Three I's for HIV/TB: Infection Control, Intensified Case Finding and Isoniazid Preventive Therapy; which should be integrated into HIV programmes of national health services in addition to the provision of ART.

Immediate and full adoption of the Three I's for HIV/TB is an essential element of the HIV response in high-prevalence countries – however, in-context support is also needed to accelerate implementation of these simple measures that will have a tremendous impact on the HIV/TB co-epidemic. This in turn requires enhanced communication and scaled up dissemination of the WHO's TB/HIV control recommendations to support the efforts of civil society and health workers to accelerate their implementation.

In the spirit of joint responsibility and ownership for a targeted effort to address the dual epidemics, the AIDS and Rights Alliance for Southern Africa (ARASA), with support from the WHO and in collaboration with partner organizations from across the Southern African region, undertook to create accessible and scientifically accurate training and advocacy materials to promote the accelerated implementation of the Three I's for HIV/TB.

The toolkit development process was shaped by the collective participation of TB/HIV community activists, health workers, journalists, traditional healers, government representatives, and WHO/TB technical and medical experts, from seven different Southern African countries.

The process, which included a workshop in December 2010, followed by toolkit design and piloting in 4 countries (Swaziland, Botswana, Lesotho and Zambia) between December and March 2011, provided the opportunity for these key stakeholders to come to grips with the latest recommendations from WHO; understand and brainstorm on initiatives to respond to the current obstacles and identify opportunities as they relate to the implementation of the Three I's for HIV/TB in the region. This process informed the development of the toolkit in accordance with regional needs.

"BE A TB HERO!"

ARASA is delighted to introduce the superhero-themed Three I's HIV/TB Communication and Advocacy Toolkit, which includes a variety of resources intended for use by a wide range of stakeholders at grassroots level. The toolkit includes:

1. Frequently Asked Questions on the *Three I's for HIV/TB* for health workers and communities
2. Glossary to define commonly used terms
3. Congregate settings examples to highlight the impact of HIV/TB in settings outside of health care facilities
4. Posters to promote the adoption of the *Three I's for HIV/TB* to be used both by health care facilities and communities

5. Checklists for patients and communities as well as health care workers to assess the safety of health facilities and the availability of essential HIV/TB services therein;
6. WHO recommendations on the *Three I's for HIV/TB*
7. Presentation on the Three I's for HIV/TB to summarize existing scientific research
8. Best practices of HIV/TB related activities in the region

ARASA will work with country partners to support the use of the toolkit in community settings and with national HIV and TB programmes to advocate for the use of these innovative communication strategies in public health facilities. The toolkit is open for use by any interested parties and can be downloaded from the ARASA website (www.arasa.info).

For Monitoring and Evaluation purposes we kindly request that you notify ARASA about any intended use of this toolkit. This will enable us to record its impact, and to keep you updated on any revisions or similar initiatives that we may undertake in future. As we are committed to constant improvement of our efforts, we also welcome any feedback, positive or negative. Should you require assistance with adaptation, translation and/or dissemination, we will try to connect you with organisations that may be able to support with this.

For further information on the toolkit, please contact lynette@arasa.info

ACKNOWLEDGEMENTS

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For further information or downloading of the Three I's for HIV/ TB Toolkit, please see AIDS and Rights Alliance for Southern Africa: www.arasa.info.

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GLOSSARY

GLOSSARY

Active TB:

The symptoms of active tuberculosis include cough, weakness, weight loss, fever, no appetite, chills and sweating at night. Other symptoms of TB disease depend on where in the body the bacteria are growing. A person is infectious with active tuberculosis disease when they are not on/responding/adhering to TB treatment.

Algorithm:

Recommended patient management strategies designed to assist in direct decision making

Antibodies:

Proteins that are found in blood that are used by the immune system to identify and control infections

Antigen:

Substances from an infectious agent that produce an immune response

Antiretroviral Therapy (ART):

Medication for the treatment of HIV. When several such drugs, are taken in combination, it is known as highly active antiretroviral therapy, or HAART.

BCG:

A vaccine for TB named after the French scientists Calmette and Guerin. This vaccine is currently used to help prevent tuberculosis.

CD4:

A protein on the surface of the cells of the immune system that helps in activating the body's response to infection

Chemoprophylaxis:

The administration of anti-tuberculosis drug(s) to prevent tuberculosis infection.

Chest x-ray:

A picture of the inside of the chest. Chest x-rays are used to determine whether TB bacteria have damaged the lungs.

Congregate setting:

A setting in which three or more usually unrelated persons reside in close physical proximity. These settings may include hospitals, long term care facilities, assisted living facilities, correctional facilities, etc.

Contact:

A person who has spent time with a person with infectious TB.

GLOSSARY

Culture:

TB bacteria obtained from fluid from the lungs mixed with saliva that is grown and identified.

Directly observed therapy (DOT):

A way of helping patients take their medicine for TB in which the patient meets with a health care worker or sometimes a friend or family member, and is observed taking their TB medication.

Extra-pulmonary TB:

TB disease in any part of the body other than the lungs

First line treatment:

Therapy that is recommended for the initial treatment of disease

Hepatitis:

An inflammation of the liver caused by certain viruses and other factors such as alcohol abuse, some medications and trauma. Symptoms of early hepatitis infection: decreased appetite, fatigue, abdominal pain, nausea, vomiting, jaundice, itching, and flu-like symptoms.

HIV infection:

Infection with human immunodeficiency virus, the virus that causes AIDS (acquired immunodeficiency syndrome).

Immunocompromised:

A condition in which an person's ability to fight infection is weaker or absent

Incidence:

The risk of developing a new infection over a particular period of time. Incidence is used to measure the number of new infections over a particular period of time.

Infectious TB:

Active tuberculosis disease which presents a risk of transmission of infection to others.

Infectious person:

A person who can spread TB to others because he or she is coughing TB bacteria into the air.

Interferon-Gamma Release Assays IGRA:

A test to measure a person's immune response to M. Tuberculosis. When an individual is infected with M. Tuberculosis, their white blood cells will release a substance called interferon gamma. The level of interferon gamma is measured by this test.

Isoniazid:

A drug used to prevent TB disease in people who have TB infection. Isoniazid is also one of the five drugs used to treat TB disease.

GLOSSARY

Latent TB:

A state in which mycobacteria are present in the body without causing active TB disease but have the potential to reactivate and cause disease. People with latent TB do not show symptoms are noninfectious.

Multi-drug resistant TB (MDR TB):

Tuberculosis resistant to isoniazid and rifampicin, with or without any other resistance.

Mycobacteria:

The classification of bacteria which includes the organisms which cause tuberculosis, but also includes bacteria which are not transmitted person-to-person.

Mycobacteria tuberculosis:

A group of closely related mycobacterial species which can cause tuberculosis.

Nosocomial transmission:

Infection that occurs while in a health facility

Prevalence:

The number of people with a particular disease within a population

Pulmonary TB:

TB disease that occurs in the lungs. Symptoms usually include a cough that lasts longer than 2 weeks. Most TB disease is pulmonary.

Reactivated tuberculosis:

Old tuberculosis infection which has become active.

Re-infection:

Active tuberculosis due to new infection in someone who has had previous tuberculosis infection.

Resistant bacteria:

Bacteria that can no longer be killed by a certain drug.

Respirator:

Protective mask with a filter to protect the wearer from inhaling harmful objects in the air.

Rifampicin:

A drug used to prevent TB disease in people who have TB infection. Rifampicin is also one of the five drugs used to treat TB disease.

Second line treatment:

Treatment that is given when first line treatment doest work or stops working

GLOSSARY

Sputum:

Substance coughed up from inside the lungs. Sputum is examined for TB bacteria under a microscope; part of the sputum can also be used to do a culture.

Surgical masks:

Disposable masks that cover the nose and mouth designed to protect others from bacteria released from the wearer. Surgical masks and not respirators offer only minimal protection for the wearer.

Triage :

The process of prioritizing patients based on their condition. Triaging TB patients consists of screening patients as they come into the health facility and fast-tracking patients for diagnosis when they are suspected to have TB or asking them to wait near an open window away from other patients

Tuberculosis (TB):

Disease due to infection with Mycobacterium tuberculosis.

Tuberculosis infection:

A condition in which M. tuberculosis organisms are present in the body without necessarily causing active tuberculosis disease.

Tuberculin:

Parts of the tubercle bacilli that is injected under the skin on the lower part of your arm in doing a TB skin test.

Tuberculin skin tests:

A skin test is carried out to determine whether an individual is infected tuberculosis. A 'positive' skin test occurs when a person is infected with tuberculosis and the formation of a hard red bump where the individual has been injected within 48-72 hours can be seen.

UVGI:

A system that uses ultraviolet light to break down the bacteria in the air.

World Health Organization (WHO):

A global agency linked to the United Nations responsible for the coordination of international health activities and helping governments improve health services.

XDR-TB:

Extensively drug-resistant tuberculosis (XDR-TB) is TB that is resistant to rifampicin and isoniazid (Multi-drug-resistant tuberculosis or MDR-TB), as well as to any member of the quinolene family and at least one of the following second-line anti-TB injectable drugs: kanamycin, capreomycin, or amikacin.

MEET PEOPLE IN YOUR COMMUNITY

HOSPITAL

Hello, my name is Phumla and I am a health care worker at the clinic.

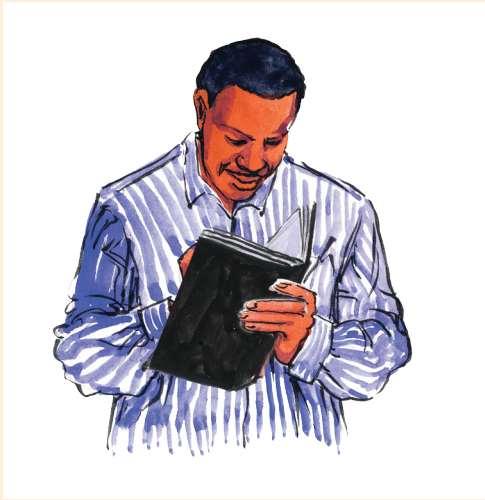
The risk of TB transmission in hospitals can be but should not be higher than in the general population. TB infection in hospitals can be high when facilities are overcrowded and TB infection control measures are not in place. People living with HIV are at an increased risk of TB infection because of weakened immune systems as are hospital staff who can have frequent contact with TB patients.

Rapid diagnosis and management of TB cases, training and education for hospital staff and patients on cough etiquette and respiratory hygiene and the implementation of appropriate environmental and physical controls are key to ensuring that our hospitals are TB transmission free zones and as such are safe places for us to come to.

CHURCH

Hello, my name is Pastor Loyiso.

TB transmission can take place in churches if there are a large number of people sitting closely together, people with TB disease are coughing and the windows are closed. It is important when we are in church to cover our mouths when we cough and to open windows so that there is good ventilation in the church. Many treatment literacy programs take place in the Church in which TB related information is shared with the congregation.



SCHOOL

Hello, my name is Linda and I am a school teacher.

TB is a problem amongst children. Every year, over 250,000 children develop TB and 100,000 die from it. Young children are at a high risk of developing active TB because of their less developed immune systems. Diagnosing TB in children under the age of 10 is a challenge because of difficulties in getting sputum samples and unclear chest x-rays. Diagnosing TB in children depends on symptoms including cough, weight loss, fever and night sweats as well as a history of close contact with an infectious adult. TB infection can spread in schools because of the close interaction school children have with each other.

TB education in schools provides an opportunity for information to be given to children which in turn can be relayed back to family members.

REFUGEE CAMPS

Hello, my name is Nomazizi and I am a nurse working at the refugee camp.

TB transmission is a problem in refugee camps. Over 85% of refugees come from and remain in settings with a high burden of TB. As many as 50% of refugees may be infected with TB.

The risk of TB transmission in refugee camps is high because of:

Overcrowding, poor nutrition, high prevalence and transmission of HIV, a high level of other diseases, high levels of stress, challenges to access and quality of health care, an unstable and frequently mobile environment.

PRISONS

Hello, my name is John and I am a prison warden.

TB transmission in prisons is a very big problem, and has been found to be up to 100 times higher than that in the general population. TB transmission in prisons is a problem because of a number of reasons including:

Late diagnosis of TB, inadequate treatment, poor ventilation and frequent prison transfers.

Other factors that lead to the development of active TB and increased TB transmission include:

HIV infection, malnutrition and substance abuse.

Multi drug resistant TB (MDR-TB) in prisons is also a problem, making up 24% of cases in some settings. Causes of MDR-TB in prisons are multiple-a poor TB program probably means that many people living with HIV are not on earlier ART, develop TB, and then are mis-managed. Others without HIV may also be mismanaged. Some people are infected with MDR-TB in prisons. Others who develop TB there are mis-managed with mono or dual therapy and no access to second line treatment.

TB in prisons spreads to the general population through prison staff, visitors and former inmates. Prisoners also have the right to the same level of TB treatment and care as the general population.

TB in prisons should be addressed by:

- Reducing delays in the detection and treatment of TB
- Ensuring a constant supply of TB-drugs
- Ensuring that prisoners who are released continue their TB treatment
- Reducing overcrowding and improving the general living conditions for all prisoners

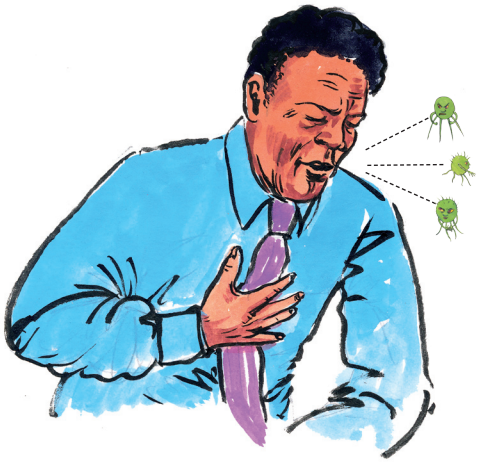
BACKGROUND ON TB & TB/HIV

1. What is TB

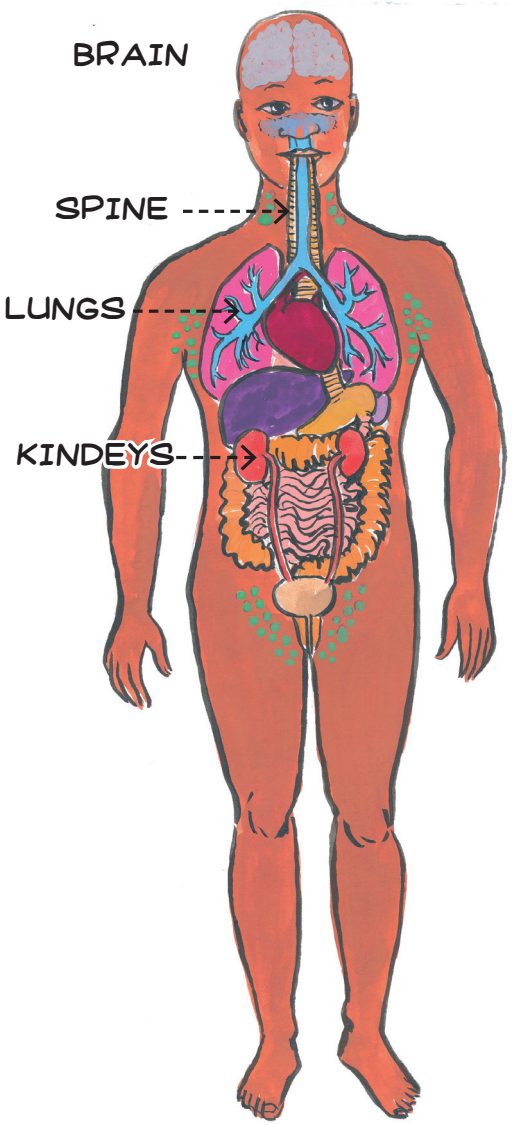
Tuberculosis or TB (short for tubercles bacillus) is an infectious disease caused by various strains of mycobacteria; most often Mycobacterium tuberculosis.

2. How is TB spread?

TB is spread when people with active TB disease cough, sneeze, speak or spit droplets that contain the mycobacteria, which are then inhaled by surrounding people. Less than ten droplets may cause infection, but a single sneeze can release up to 40,000 droplets. Taking TB treatment rapidly removes a person's ability to spread TB, but someone with active TB, if untreated, can infect 10-15 other people per year.



3. Where does TB infection happen in the body?



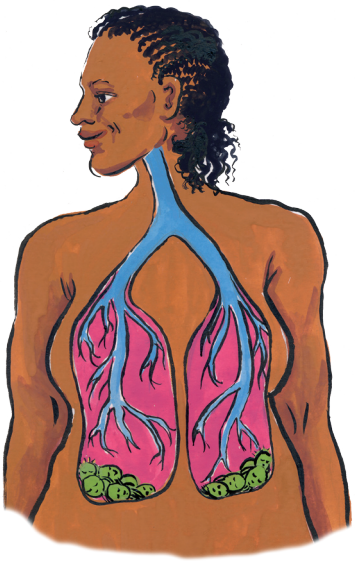
TB is transmitted in the air so most often attacks the lungs but may also affect other parts of the body such as the kidney, spine or brain. People living with HIV and are infected with TB develop extra-pulmonary disease much more often because of their weakened immune system. Infection with M. tuberculosis triggers an inflammatory response from a human's immune system, and damages the site of infection through the formation of tubercules – hard, round structures.

4. What is extrapulmonary TB? What is disseminated TB?

Extrapulmonary TB is when the bacteria have moved outside of the lungs to other parts of the body. The most common areas for TB to spread includes the lymph nodes and kidney, but TB can also spread to the brain, bones, abdomen and area surrounding the heart, and reproductive organs. Disseminated or miliary TB is a serious form of extrapulmonary TB, where the bacteria have infected several organs at the same time. Symptoms of disseminated TB are specific to the location of the body that is infected. Generally, extrapulmonary TB is rare, making up 15% of cases, however, up to 50% of people living with HIV develop extrapulmonary TB.[1]

[1] Golden MP, Vikram HR. Extrapulmonary tuberculosis: an overview. Am Fam Physician. 2005 Nov 1;72(9):1761-8.

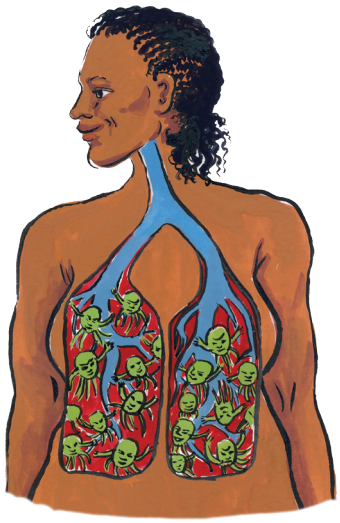
5. What is latent TB?



Latent TB (LTB) is when a person is infected with M. tuberculosis without becoming sick. With latent infection, a person's immune system is able to fight the bacteria and stop them from growing and spreading in the lungs.

What is active TB?

Active TB or TB disease occurs if the immune system is not able to stop the TB bacteria from multiplying in the body. TB disease makes people sick, and they can spread the infection to others. Active TB disease can develop soon after becoming infected before the immune system can fight the bacteria or many years later when the immune system becomes weak because of ageing or because of another sickness, such as HIV. Among the general population, 5-10% of people will develop active TB in their life time while in people living with HIV the risk of developing active TB is 10-15% per year.



The Difference between Latent TB Infection and TB Disease

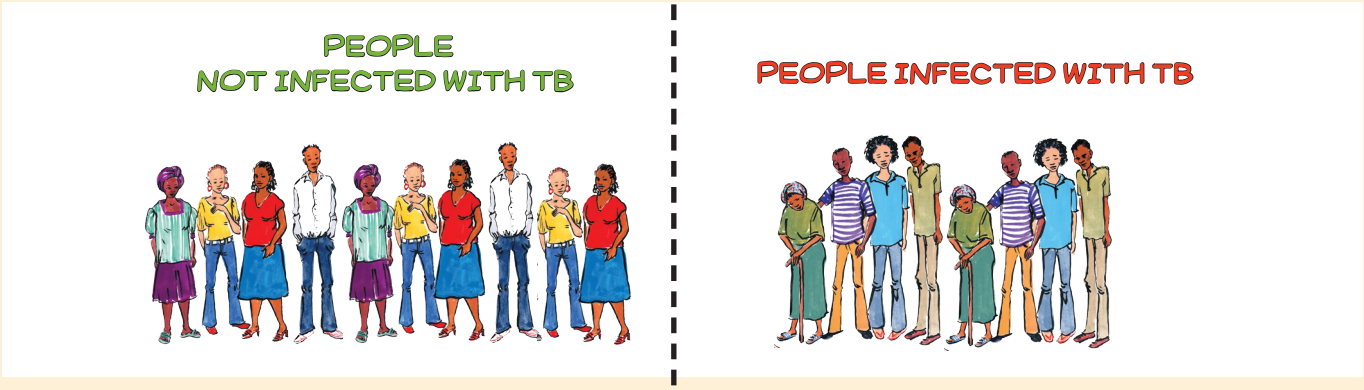
A PERSON WITH LATENT TB	A PERSON WITH TB DISEASE
• Has no symptons	• Has symptoms that may include: - a chronic cough (2-3 weeks) - pain in the chest - coughing up blood or sputum - weakness or fatigue - weight loss - no appetite - chills - fever - sweating at night
• Does not feel sick	• Feels sick
• Cannot spread TB bacteria	• Can spread TB bacteria to others
	

6. How is active TB treated

TB is treatable and curable among people living with HIV. First line treatment for active TB involves a combination of 4 drugs including: Rifampicin (R), Isoniazid (H), Ethambutol (E), Pyrazinamide (Z) for 6 months. The aim of TB treatment is to cure TB and decrease transmission to others.

7. What is the epidemiology of HIV and TB?

- Approximately 33 million people are HIV-infected and almost one-third are also infected with TB[2]
- There were 9.4 million new TB cases in 2009, including 1.2 million cases among people with HIV[3]
- 1.7 million people died from TB in 2009, including 380 000 people with HIV, equal to 4700 deaths a day[3]
- In the African region, 80% of those infected with TB are co-infected with HIV, with only 26% of patients with TB having tested for HIV infection.[3]



[2] WHO, UNAIDS and UNICEF, Towards universal access: scaling up priority HIV/AIDS interventions in the health sector: progress report, World Health Organization, Geneva, Switzerland (2009).

[3] World Health Organization. Global tuberculosis control: a short update to the 2009 report. December 2009. Geneva: World Health Organization, 2010.

8. Why is TB a problem for people living with HIV?

HIV infection weakens the human immune system by damaging the CD4 cells which helps the body fight infection. As a result, HIV is the strongest risk factor for developing TB disease in those with latent or new M. tuberculosis infection. The risk of developing TB is at least 20 times greater in people living with HIV.[4]

9. What is BCG?

The Bacillus Calmette-Guerin (BCG), is a vaccine against TB for HIV positive infants. It works by activating the body's immune response to the bacteria without causing disease, and protecting against future infection. BCG is not safe in individuals with HIV because it relies on the body's ability to control the spread of the bacteria in the body, and people with HIV who receive BCG have a high risk of infection spreading in the body.

The WHO recommends that in countries with a high burden of TB, a single dose of the vaccine should be given to infants as soon as possible after birth unless they are HIV positive. The vaccine may be as effective as 80% in children, but is unable to prevent TB in adults as the immunity wears off with age.

10. What are the "Three I's for HIV/TB"?

There are three essential interventions that the WHO recommends for all HIV programmes in order to protect people with HIV from TB infection, help prevent active disease from developing, and identify active TB disease early and improve the chances of cure — the "Three I's for HIV/TB". These are:

- Intensified case finding (ICF) for active TB: '4 questions could save your life'
  Involves active screening that leads to early diagnosis of TB, the provision of treatment and reduced spread of infection to others. It also protects people living with HIV from new infection by:
- Giving them Isoniazid preventive treatment (IPT): 'Get TB while it's still sleeping'
  An antibiotic that reduces their risk of developing active TB since the bacteria are killed before they have had a chance to establish an infection

[4] Getahun H, Gunneberg C, Granich R, Nunn P. HIV infection–associated tuberculosis: the epidemiology and the response. Clin Infect Dis 2010; 50(Suppl 3):S201–S207

- TB Infection Control(IC)- 'Are you in a TB factory?'
  Involves different measures that can be taken to reduce the airborne spread of TB to people living with HIV, health care workers and the community which include:
  - Managerial-The planning stage
  - Administrative-The service delivery stage
  - Environmental-What's floating in your air?
  - Physical-Are you protected?

INTENSIFIED TB CASE FINDING

11. What is Intensified Case Finding (ICF) for TB?

Intensified Case Finding (ICF) for TB means regularly screening all people with or at high risk of HIV for the symptoms of TB. Symptom screening ensures that people without active TB are provided with IPT and the implementation of appropriate infection control measures to reduce the spread of TB. Those with symptoms of TB should be rapidly diagnosed and treated, and the same should be done for household contacts.

Active case finding and the provision of treatment to infected individuals is beneficial because:

- Active TB disease, if left untreated kills more than 50% of people infected.
- TB treatment also reduces the spread of infection; a person on TB treatment for at least 2 weeks can no longer spread TB to others. Even though someone is no longer infectious, full course of treatment must be taken.

Screening for TB should be taking place both in health facilities, when people first seek HIV services and in other congregate settings (mines, prisons, schools, churches, factories, public transportation, and the home); in particular amongst people living with HIV.

12. How often should people living with HIV be screened for TB?

People living with HIV should be screened for TB at every clinic or home visit, regardless of whether they have received or are receiving IPT or ART.

13.What is the WHO recommended screening algorithm for ruling out active TB, including extrapulmonary TB in people living with HIV?

As recommended by the WHO, all people living with HIV should be regularly screened for TB at every visit using a clinical algorithm wherever they are receiving care. At the minimum HIV infected people should be screened for common TB signs and symptoms for all types of TB disease. The WHO recommended screening algorithm for adults and adolescents living with HIV include a set of four symptoms: current cough, fever, weight loss and night sweats. WHO recommends that adults and adolescents living with HIV who do not have any of these four symptoms are unlikely to have active TB and should be offered IPT. However, if any of these four symptoms are present, it may indicate the presence of active TB and the patient should be further evaluated for TB and other diseases.

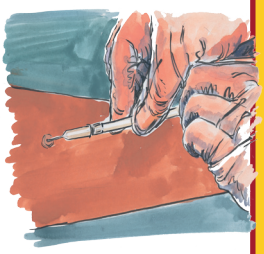

Night Sweats


Fever


Weight loss


Current Cough

14. What diagnostic tests exist to detect latent TB infection and confirm active TB disease? [5]

DIAGNOSTIC TEST	HOW DOES IT WORK	ADVANTAGES	DISADVANTAGES
Tubercilin Skin Test (TST) 	Small amount of TB protein injected into the skin-If a person is infected with TB then a firm red bump will develop on the skin within 48-72 hours	Allows detection of latent TB	- Inaccurate positive results for patients who: received (BCG) or exposed to a different mycobacteria - Inaccurate negative results: in people living with HIV, people with poor nutrition and those with disseminated TB. - Difficult to administer and interpret, costly, and has to be stored in cool temperatures.
Chest X-rays 	TB creates cavities in the lungs that may be visible through x-rays.	Addition of abnormal chest radiographic findings to the four symptom based rule increases accuracy of diagnosis	- Requires higher level of lab sophistication than TST (blood need to be processed within 24 hours) - More useful in low burden settings - Expensive, therefore recommended by WHO to be used as a confirmatory test in patients with positive TST results, particularly in areas with high rates of BCG vaccination.

[5] Al-Orainey IO. Diagnosis of latent tuberculosis: Can we do better?. Ann Thorac Med 2009;4:5-9

DIAGNOSTIC TEST	HOW DOES IT WORK	ADVANTAGES	DISADVANTAGES
Interferon Gamma Release Assays (IGRA)	Detects an individual's immune response by measuring the release of the interferon-gamma substance by the body's white blood cells after being exposed to M. tuberculosis.	More accurate than the TST in detecting LTBI and is not affected by having received a BCG vaccination.	Expensive, therefore recommended to be used as a confirmatory test in patients with positive TST results, particularly in areas with high rates of BCG vaccination.[5]
Sputum Test 	Sputum is matter that is released from the lungs The test examines the sputum under a microscope for bacteria.	- Tests results can be received rapidly	Cannot always differentiate between TB and other types of infections. The test usually only identified 35% of patients with TB disease.
Culture Test 	Test conducted by placing a sample of sputum in a container with substances that promote the growth of the bacteria. If no bacteria grow, then the culture is negative.	- Can help determine the best antibiotic to treat the infection (drug sensitivity test) - High accuracy in TB detection	- Difficult to obtain specimens from individuals, especially children or those with disseminated TB - Length of time to obtain a result may take anywhere between 2-6 weeks.

[5] Al-Orainey IO. Diagnosis of latent tuberculosis: Can we do better?. Ann Thorac Med 2009;4:5-9

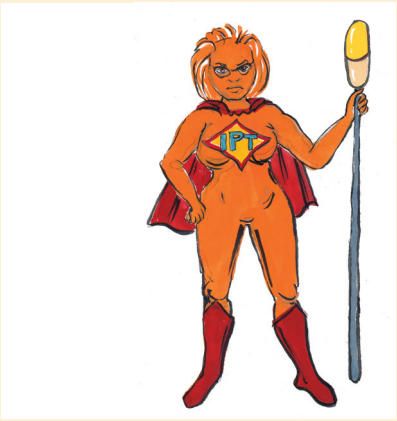
15. Should a positive skin test result be a requirement for administering IPT to people living with HIV?

According to the WHO TST is not a requirement for administering IPT to people living with HIV. Symptom screening to exclude those with active TB should be the method used to administer IPT. However, where it is feasible TST should be used as people with a positive TST benefit more from IPT than those with a negative test.

16. Do the 2011 WHO IPT ICF Guidelines recommend IGRA for the screening of people living with HIV for IPT?

IGRA are not recommended by the WHO for the screening of people living with HIV for IPT. These tests are expensive and there is limited evidence on their use in patients with HIV to identify latent TB.

INH PREVENTATIVE THERAPHY



17. What is TB chemoprophylaxis and why is it recommended by the WHO for people living with HIV? What drug is used for TB chemoprophylaxis?

TB chemoprophylaxis (also known as Isoniazid preventive therapy IPT) is giving an anti-TB drug to people with latent infection to kill off the bacteria before it develops into active disease. The drug being used for IPT is Isoniazid (INH) at 300mg/day. IPT is also safe for children and should be given at a dose at 10mg/kg/day (not to exceed a maximum daily dose of 300mg). Many studies around the world have shown that IPT reduces the risk of TB disease by 33%-67% in people living with HIV for up to 5 years.[6]

18. What is the optimal duration of IPT?

In Southern Africa, with a high prevalence of HIV/TB co-infection, IPT is recommended by the WHO for adults and adolescents for 36 months where feasible, but should be given for at least 6 months. IPT is recommended by the WHO for 6 months for children over 12 months of age.

19. How long does the protective value of IPT last? Should repeated courses of IPT be administered?

The protective benefit of IPT ranges from 6 months to 5 years. The loss in protective benefit could be due to the high prevalence of TB in the community and re-infection or within high risk populations including health care workers, household contacts of TB patients, prisoners, and miners. Despite the loss in the protective benefit, current WHO recommendations are for a single daily dose of IPT for a minimum of 6 months because of concerns with lifelong or periodic treatment with IPT that include risks of the development of toxicity or high costs.

[6] Akolo C, Adetifa I, Shepperd S, Volmink J. Treatment of Latent Tuberculosis Infection in HIV Infected Persons (Review). The Cochrane Collaboration. Wiley Publishers. 2010

20. How important is adherence to IPT?

Various studies have shown that adherence rates for IPT vary significantly from 34%-98%, however, there is no data indicating that poor adherence results in resistance to isoniazid.

It is important that patients adhere to IPT for the prevention of active TB. Patients on IPT should go for regular clinical follow up, prompt evaluation for TB if symptoms appear and/or stop IPT if signs of toxicity appear.

21. Is it safe to administer IPT together with ART?

Isoniazid has potential adverse effects, including nausea, vomiting, rash, fever, hepatitis, and peripheral neuropathy. Hepatoxicity, sometimes severe and even fatal, has been found in a very small proportion of individuals receiving isoniazid treatment. It is important to inform clinicians and patients about this possibility and be aware of the signs and symptoms of hepatitis, especially if the person taking IPT has other risk factors for liver disease such as regular alcohol consumption. Among patients receiving both ART and IPT, the risk of peripheral neuropathy is increased if stavudine or didanosine is used, although the addition of vitamin B6 (pyridoxine) may provide some protection.[7]

Symptoms of early hepatitis infection: decreased appetite, fatigue, abdominal pain, nausea, vomiting, jaundice, itching, and flu-like symptoms.

When using IPT it is important to provide patients with careful counseling, clinical monitoring, and good patient education regarding when to stop treatment and seek advice in order to reduce the risk of toxicity.[8]

[7] Landry J, Menzies D. Preventive chemotherapy. Where has it got us? Where to go next? Int J Tuberc Lung Dis 2008; 12:1352–1364.

[8] Granich R, Akolo C, Gunneberg C, Getahun H, Williams P, Williams B. Prevention of tuberculosis in people living with HIV. Clin Infect Dis 2010; 50(Suppl 3):S215–S222

22. Does IPT have any added benefit in people whose immune systems are already strengthened by ART?

TB incidence rates, even though significantly reduced by ART, is unable to eliminate the risk of getting TB among people living with HIV entirely.[9] The use of both IPT and ART in HIV-infected patients has been shown to significantly reduce TB incidence in comparison to using them separately. A study on the effects of using IPT with ART found that while patients receiving HAART had a 64% decreased risk for TB, patients receiving HAART after IPT had a 89% reduced risk. [10]Therefore, it is recommended by the WHO that IPT be given regardless of whether a patient is on ART and being on IPT should not delay starting ART in eligible people living with HIV.

23. Is there a certain CD4 count below which people should not be started on IPT?

IPT should be provided to patients regardless of CD4 count.

24. Does IPT increase the risk of isoniazid resistance in people with latent TB?

IPT is only recommended by the WHO for patients with latent TB and it is very important that a patient not have active TB disease when given IPT. Therefore, it is important to thoroughly screen people for symptoms to eliminate the possibility of active TB before beginning IPT. In individuals with latent TB, few bacilli exist in the lungs which are slowly dividing, making the likelihood of developing drug resistance low. There is still a small possibility that the use of isoniazid alone for the treatment of latent TB infection {LTBI} may result in of isoniazid resistance, however, this should not prevent the use of IPT amongst those living with HIV. IPT cannot be used in people who have drug resistance. The WHO recommends regular TB screening for those taking IPT in order to help identify those who develop active TB. People who develop isoniazid resistance can still be successfully treated with standard TB treatment.

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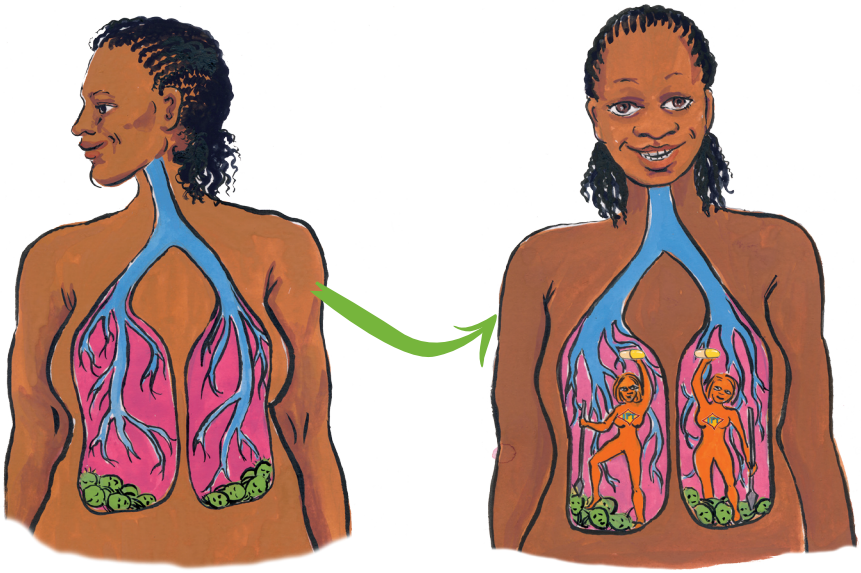
[9] De Cock K, Marston B. The Sound of One Hand Clapping - Tuberculosis and Antiretroviral Therapy in Africa Am. J. Respir. Crit. Care Med. 2005:172(1):3-4.

[10] Golub JE, Pronyk P, Mohapi L, et al. Isoniazid preventive therapy, HAART and tuberculosis risk in HIV-infected adults in South Africa: a prospective cohort. Aids 2009,23:631-636



25. Is IPT safe in pregnant women?

The existing evidence suggests that IPT is safe in pregnant women. It is recommended by the WHO that pregnancy should not exclude women living with HIV from symptom based TB screening and receiving IPT.

26. When is IPT not recommended by the WHO for patients?

Patients with active hepatitis (acute or chronic), regular and heavy alcohol consumption and symptoms of peripheral neuropathy are not recommended to start IPT. However, past history of TB and current pregnancy should not prevent from starting IPT.

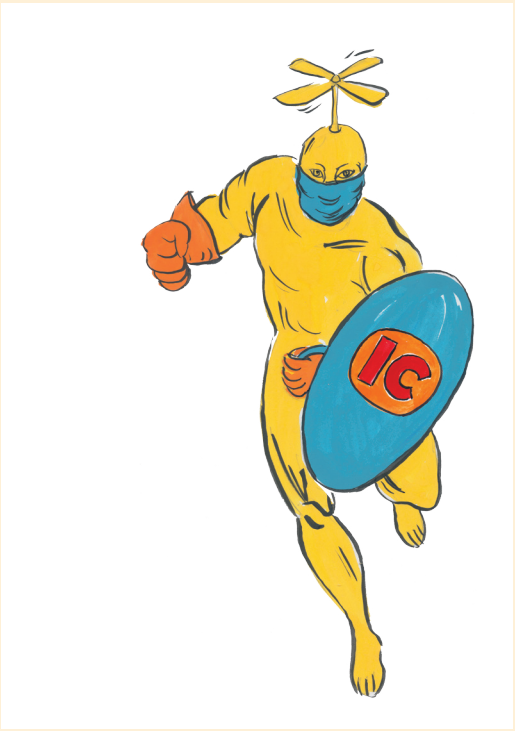
27. Can IPT be administered safely in children? How would active TB be excluded in children?

IPT is an important intervention for preventing and reducing TB amongst people living with HIV. IPT is proven to be effective and safe in both adults and adolescents as well as children. All available data suggest that INH is not toxic for children, even in those receiving ART. HIV-infected children, over one year of age who present with no evidence of active TB, despite the availability of contact history should be given IPT. Children living with HIV without poor weight gain, fever, or current cough are unlikely to have active tuberculosis. IPT in children should be given at a dose at 10mg/kg/day for 6 months (not to exceed a maximum daily dose of 300mg). Simultaneous administration of vitamin B6 25 mg daily is recommended by the WHO.

28. Is IPT recommended by the WHO for HIV infected people with MDR/XDR TB after they are successfully treated?

The use of IPT in patients who have successfully completed treatment for MDR or XDR TB is not recommended by the WHO.

TB INFECTION CONTROL



29.What is meant by TB infection control? Why is it important?

TB infection control is a combination of measures aimed at minimizing the risk of TB transmission within populations. Successful infection control requires widespread knowledge in the community around the signs and symptoms of TB and ways to control and treat it. TB Infection Control measures are essential to prevent the spread of M. tuberculosis to vulnerable patients, health care workers, the community and those living in congregate settings. With the increasing numbers of people with drug resistant TB, establishing facilities that are safe from TB has become an emergency situation for health services, prisons and other congregate settings, in general, but especially for HIV programmes.

30.What is nosocomial transmission and what is the risk of nosocomial transmission of TB?

Nosocomial transmission is TB infection that happens in a hospital or health care facility. The risk of TB among health workers in health-care facilities is higher than the risk among the general population. Various studies have shown that as compared to the general population, health care workers were 6 to 10 times more likely to develop latent TB infection, and 2 to 6 times more likely to develop TB disease. The greatest risk of transmission occurs when patients remain undiagnosed and untreated.

31. What are congregate settings? Why are there increased chances of spread of TB in congregate settings?

Congregate settings are places where people live close to each other. They range from correctional facilities and military barracks, to homeless shelters, refugee camps, dormitories, public transportation, factories, and nursing homes. The risk of TB in congregate settings is higher than other settings because of the crowded living conditions, poor nutrition and other illnesses that weakens the immune system and make people in congregate settings more vulnerable to developing active TB.[11]

32. What are the different levels of infection control in health care settings?

All health-care settings need a TB infection control program designed to detect and treat people for TB (or referral of persons to health facilities who have suspected TB disease in other settings), as well as ensuring clean breathing air. There is a need for similar measures for infection control in other congregate settings to prevent the spread of TB.

[11] Getahun H, Gunneberg C, Granich R, Nunn P. HIV infection–associated tuberculosis: the epidemiology and the response. Clin Infect Dis 2010; 50(Suppl 3):S201–S207

The following levels of TB infection control measures are recommended by the WHO in health care settings:

Facility-level measures

- Develop an infection control plan for the health facility and identify a person responsible for its implementation
- If possible, rethink the use of available spaces and consider renovation to improve infection control.
- Monitor TB disease among health workers and patients.
- Promote and educate health workers, patients and visitors on infection control.
- Monitor and evaluate the implementation of TB infection control measures

Administrative controls

- Promptly identify people with TB symptoms, separate infectious patients, control the spread of TB (cough etiquette and respiratory hygiene) , and minimize time spent in health-care facilities.
- Provide a package of prevention and care interventions for health workers, including HIV prevention, antiretroviral therapy and isoniazid preventive therapy (IPT) for HIV-positive health workers.

Environmental controls

- Use ventilation systems.
- Use ultraviolet germicidal irradiation (UVGI) fixtures when adequate ventilation cannot be achieved.

Personal protective equipment

- Use particulate respirators

33. Should infectious TB patients be separated in health care facilities?

It is important to separate infectious patients after they have been screened and diagnosed for TB. People suspected of having or with confirmed drug-resistant TB should be separated (preferably according to the type of resistance they have from other patients, including other TB patients.

34. How important is cough etiquette in preventing transmission of TB?

Cough etiquette, which includes covering the nose and mouth when sneezing or coughing reduces the spread of droplets that contain TB.

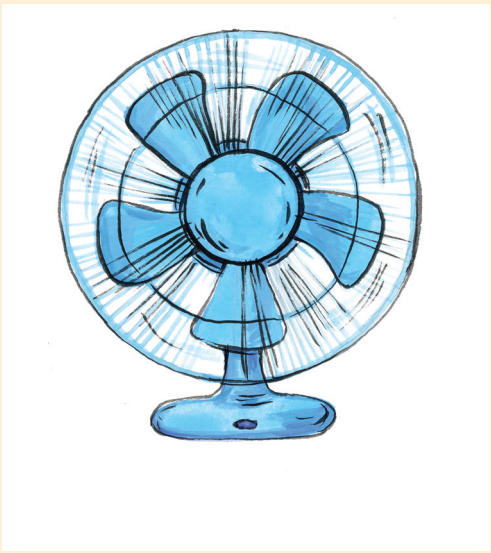
35. Have personal masks and respirators proven to be effective in preventing TB transmission?

There are usually two types of personal protective wear that are used in health care settings to protect against TB transmission.

The WHO recommends that N95 mask be used for health workers when caring for patients with suspected or confirmed TB, along with other infectious control measures. Particulate respirators should not be used by patients or people suspected of having infectious TB; instead, surgical masks and proper cough etiquette should be used.

TYPE	HOW DOES IT WORK	ADVANTAGES	DISADVANTAGES
Surgical masks 	Provides a physical barrier between the mouth and nose of the person wearing it and their environment	Most effective in limiting the spread of infection from patients with TB to others	Not able to block out small particles spread through coughing and sneezing can only be used once and must be discarded right after use.
Respirators/N95 masks 	Filters out the air breathed in by users	Fluid resistant and able to filter out very small particles.	Disposable, but can be reused (should be stored in a clean, dry location)

36. What are the types of environmental ventilation? How effective is ventilation in TB infection control?

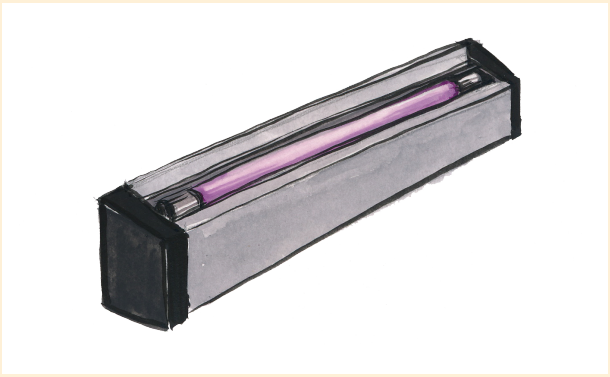


Environmental ventilation is the process of bringing in air from the outside, and/or removing the bacteria from the air. There are three main types of ventilation:

1. Mechanical ventilation uses fans to move air through a building. Mechanical ventilation can be combined filtration systems.
2. Natural ventilation uses as the wind to drive the air flow through a building.
3. Mixed-mode ventilation system combines the use of both mechanical and natural ventilation

Health facilities lacking appropriate ventilation systems have reported TB transmission. Therefore the WHO recommends that health facilities put in place a ventilation system to control the spread of TB. There is a need to maintain the mechanical equipment in order to ensure it is working correctly.

37. Are UVGI devices recommended by the WHO for TB infection control?



Ventilation is essential for preventing transmission of TB in the air. When it is not possible because of climate or building structure, an option is to use upper room or shielded ultraviolet germicidal irradiation (UVGI) devices. These devices use ultraviolet light to break down bacteria in the air. Using a combination of infection control strategies is the most effective way of reducing TB transmission, therefore when possible, open window shades and/or hold support group meetings outside, and use UVGI devices.

38. What specific measures are recommended by the WHO for HIV positive health workers in order to prevent them from getting infected with TB?

HIV positive health workers should be offered a package of prevention, treatment and care that includes:

a. access to antiretroviral therapy (ARV therapy strengthens the immune system and significantly reduces the risk of TB)
b. regular screening for active TB and a full regimen of anti-TB treatment, should they be diagnosed
c. isoniazid preventive therapy (IPT) for latent TB

The WHO recommends that HIV-positive health workers should not be working with patients with known or suspected TB (in particular, they should not be working with patients with MDR-TB and XDR-TB).

39. For persons with infectious TB, what actions can be taken to reduce the risk of transmission of TB to their household members?

Household members of persons with infectious TB are at high risk of becoming infected with TB. Therefore, detecting TB early remains one of the most important interventions for reducing the risk of TB transmission in the household. Potentially infectious people may require some isolation from other household members. Soon after starting TB treatment individuals are no longer infectious.

To reduce exposure in households:

- Houses should be adequately ventilated, particularly rooms where people with infectious TB spend considerable time.
- Anyone who coughs should be educated on cough etiquette and respiratory hygiene, and should follow such practices at all times
- TB patients should

- spend as much time as possible outdoors
- sleep alone in a separate, adequately ventilated room, if possible
- spend as little time as possible in congregate settings or in public transport.
- practice cough etiquette (including use of masks) and respiratory hygiene when in contact with people.

- Ideally, family members living with HIV should not provide care for patients with infectious TB. If there is no alternative, HIV-positive family members should wear respirators, if available.
- Children below five years of age should spend as little time as possible in the same living spaces as infectious TB patients. Such children should be followed up regularly with TB screening.
- Potential renovation of the patient's home should be considered if possible, to improve ventilation (e.g. building of a separate bedroom, or installation of a window).

IMPACT OF ART ON TB PREVENTION

40. What is the role of ART in preventing TB?

Studies have shown that the risk of developing TB is significantly decreased among HIV-infected persons receiving ART because of its effect on reducing HIV replication. [12] ART has been found to reduce TB risk by up to 92% for an individual, and to reduce TB reinfection rates by 50%. [13] [14]

41. What is the role of ART in preventing morbidity and mortality for people living with HIV who develop TB?

Mortality among patients with HIV and TB coinfection is high despite the use of TB treatment. A recent trial has shown that taking antiretroviral therapy during tuberculosis therapy reduced mortality by 56%. [15]

42. What do the 2009 WHO ART guidelines say about when to start ART for someone who has TB?

The 2009 WHO ART guidelines strongly recommend that ART should be started in all HIV-infected individuals with active TB, regardless of CD4 cell count. TB treatment should be started first, followed by ART as soon as possible after starting TB treatment. Efavirenz (EFV) should be the preferred drug in patients starting ART while on TB treatment.

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[12] Kwara A, Flanigaqn TP , Carter EJ. Highly active antiretroviral therapy (HAART) in adults with tuberculosis: current status. Int J Tuberc Lung Dis. 2005 Mar;9(3):248-57.

[13] Ait-Khaled N., Alarcon, E., Bissell, K., Boillot, F., Caminero, J. A., Chiang, C. Y., Clevenbergh, P., Dlodlo, R., Enarson, D. A., Enarson, P., Ferroussier, O., Fujiwara, P. I., Harries, A. D., Heldal, E., Hinderaker, S. G., Kim, S. J., Lienhardt, C., Rieder, H. L., Rusen, I. D., Trebucq, A., Van, Deun A., and Wilson, N. Isoniazid preventive therapy for people living with HIV: public health challenges and implementation issues. Int J Tuberc Lung Dis 2009; 13(8):927–935

[14] SD Lawn, K Kranzer and R Wood, Antiretroviral therapy for control of the HIV-associated tuberculosis epidemic in resource-limited settings, Clin Chest Med 30 (2009), pp. 685–699

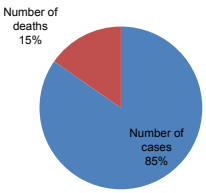
[15] Abdool Karim SS, Naidoo K, Grobler A, Padayatchi N, Baxter C, Gray A, Gengiah T, Nair G, Bamber S, Singh A, Khan M, Pienaar J, El-Sadr W, Friedland G, Abdool Karim Q. Timing of initiation of antiretroviral drugs during tuberculosis therapy. N Engl J Med. 2010 Feb 25;362(8):697-706.

STATISTICS

STATISTICS

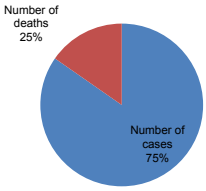
2009 HIV/TB Statistics

All forms of TB



9.4 million cases
1.7 million deaths

HIV related TB



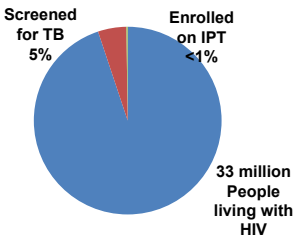
1.2 million cases
0.4 million deaths

One in four

AIDS deaths due to TB

Isoniazid Preventive Therapy: IPT

- 33 million people estimated to be living with HIV in 2009
- An estimated 1.7 million HIV+ people screened for TB (5%)
- An estimated 86,000 enrolled on IPT (less than 1% of HIV+ people without active TB)



STATISTICS

Implementation of IPT in Southern Africa

Country	People living with HIV	HIV-positive people screened for TB	HIV-positive people given IPT
Botswana	300,000	159,112	11,732
Mozambique	1.5 million	24,330	2,429
South Africa	5.6 million	433,662	23,583
Swaziland	190,000	8,427	2,107
Lesotho	270,000	Data unavailable	Data unavailable
Zambia	1.1 million	Data unavailable	Data unavailable
Zimbabwe	1.3 million	Data unavailable	Data unavailable

Source: World Health Organization

Is IPT effective?

- A review of 12 trials which included over 8000 patients found….
  - A 64% reduction in risk of developing active TB among patients on IPT

Source: Akolo C, Adetifa I, Shepperd S, Volmink J. Treatment of Latent Tuberculosis Infection in HIV Infected Persons (Review). *The Cochrane Collaboration.* Wiley Publishers. 2010

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Difficulty of TB screening in people with HIV

- HIV-infected TB patients do not often show symptoms of infection
  - Up to 30% of HIV-infected TB patients with pulmonary TB have a normal chest radiograph
  - Sputum smears may be negative in 50% or more

Sources

- Lucas SB, De Cock KM, Hounnou A, Peacock C, Diomande M, Honde M, Beaumel A, Kestens L, Kadio A. Contribution of tuberculosis to slim disease in Africa. BMJ. 1994;308:1531–3.
- Jones BE, Young SM, Antoniskis D, Davidson PT, Kramer F, Barnes PF. Relationship of the manifestations of tuberculosis to CD4 cell counts in patients with human immunodeficiency virus infection. Am Rev Respir Dis. 1993;148:1292–7.

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STATISTICS

Resistance

- There may be concern that IPT promotes drug resistant disease and makes first-line therapy less effective when active TB occurs
  - There is no strong evidence that IPT promotes drug resistant disease. When active TB occurs among those given IPT, standard four-drug first-line therapy works
  - A trial of community wide IPT of South African gold miners found that the levels of of INH resistance among those exposed to IPT is similar to the rest of the population

- Sources:
  - Balcells ME, Thomas SL, Godfrey-Faussett P, Grant AD. Isoniazid preventive therapy and risk for resistant tuberculosis. Emerg Infect Dis 2006; 12:744–751.
  - *Cattamanchi A, Dantes RB, Metcalfe JZ et al. Clinical characteristics and treatment outcomes of patients with isoniazid-monoresistant tuberculosis. Clin. Infect. Dis. 2009; 48: 179–85.*
  - van Halsema, C. L., Fielding, K. L., Chihota, V. N., Russell, E. C., Lewis, J. J., Churchyard, G. J., et al. (2010).Tuberculosis outcomes and drug susceptibility in individuals exposed to isoniazid preventive therapy in a high HIV prevalence setting. *AIDS , 1051-1055.*

IPT does not increase resistance

- If an individual has latent TB, there are only a few bacteria in the lungs and there is a low risk of selecting DR-TB
- Most resistance comes from poor adherence to treatment of active disease, so preventing active disease will reduce resistance
- There is a need to closely monitor those on IPT for the development of active TB

STATISTICS

IPT & ART

- Because ART reduces the incidence of TB, some feel that IPT is no longer required
- IPT and ART work together to reduce TB incidence among people with HIV
  - A study looking to analyze the effect of ART and IPT on the incidence of TB found that ART alone was associated with a 59% reduction in tuberculosis incidence, while the use of both IPT and ART further reduced the incidence to approximately 24% in comparison to patients who were receiving neither.

- Source: Golub JE, Saraceni V, Cavalcante SC, et al. The impact of antiretroviral therapy and isoniazid preventive therapy on tuberculosis incidence in HIV-infected patients in Rio de Janeiro, Brazil. AIDS 2007;21:1441-1448

Toxicity

- IPT is far less toxic than the standard first line 4 drug regimen for TB treatment (HRZE) and has far fewer interactions with ART than Rifampicin
  - Trial in Uganda to determine the efficacy of three different regiments for the prevention of TB found no serious toxic effects were reported with six months of isoniazid

Source:

Whalen, C. C., J. L. Johnson, A. Okwera, D. L. Hom, R. Huebner, P. Mugyenyi, R. D. Mugerwa, and J. J. Ellner. 1997. A trial of three regimens to prevent tuberculosis in Ugandan adults infected with the human immunodeficiency virus: Uganda-Case Western Reserve University Research Collaboration. N. Engl. J. Med. 337:801–808.

STATISTICS

Cost-Effectiveness of prevention vs. treatment of TB

- A study looking to measure the costs and estimate the cost-effectiveness of a package of TB/HIV interventions in primary health care facilities in South Africa found:

- Cost per TB case prevented through…
  - **VCT** (through preventing HIV) :US$ 129–215
  - **ICF**: US$ 323–664
  - **IPT** :US$486–962

- Cost of treating a new case of TB: US$ 823–1362

- Not using chest X-rays for screening for IPT decreased the cost per TB case prevented by 36%

Source:
Hausler, Harry Peter et al. Costs of measures to control tuberculosis/HIV in public primary care facilities in Cape Town, South Africa. *Bull World Health Organ* [online]. 2006, vol.84, n.7, pp. 528-536

Infection control in health facilities

- TB transmission in health facilities is a big problem and patients and other health care workers are at an increased risk of infection.

- A review of a range of studies found that the risk of TB transmission varied across work location.

STATISTICS

Association between work location and risk of TB

Work location	TB rate in comparison to general population
Outpatient facilities	4.2 – 11.6
General medical wards	3.9 – 36.6
Inpatient facilities	14.6 – 99.0
Emergency rooms	26.6 – 31.9
Laboratories	42.5 to 135.3

Source: Joshi R, Reingold AL, Menzies D, Pai M [2006]. Tuberculosis among health-care workers in low- and middle-income countries: a systematic review. *PLoS Med* 3(12): e494.

Infection Control Measures

Setting	Administrative Measures	Physical Measures	Environmental Measures	Effect
Hospital in Thailand	Early TB detection and treatment	Use of N95 masks by HCWs and air filters in labs	Separate TB wards, ventilation, UVGI devices	Drop in latent infections from 9.3% to 2.2%
Hospitals in Brazil	Rapid diagnosis and treatment Separation of TB patients	Use of N95 masks by HCWs and air filters in labs	Negative pressure rooms and air filters	Significantly lower rates of latent infection in comparison to other hospitals
40 TB hospitals in Malawi	Appropriate Triage	Cough etiquette and masks worn during operations	Ventilated wards, open windows, patients spend time outdoors	Significantly lower rates of TB disease

Sources:

1. Yanai H, Limpakarnjanarat K, Uthaivoravit W, Mastro TD, Mori T, et al. (2003) Risk of *Mycobacterium tuberculosis* infection and disease among health care workers, Chiang Rai, Thailand. Int J Tuberc Lung Dis 7: 36–45
2. Roth VR, Garrett DO, Laserson KF, et al. (2005) A multicenter evaluation of tuberculin skin test positivity and conversion among health care workers in Brazilian hospitals. Int J Tuberc Lung Dis 9: 1335–1342.
3. Harries AD, Hargreaves NJ, Gausi F, Kwanjana JH, Salaniponi FM (2002) Preventing tuberculosis among health workers in Malawi. Bull World Health Organ 80: 526–531.

STATISTICS

Infection Control knowledge and practices among HCWs

- In a study in Malaysia, HCWs with TB disease were 5.9 times more likely to have poor knowledge about TB transmission, and 4.3 times more likely to be unaware of the need for respiratory protection.
- In a study among medical students in Brazil, although 90% were aware of the risk of TB transmission, only 46% reported the use of personal-protection measures.
- In a study from Thailand, although 97% of HCWs were aware of TB infection-control policies, only 52% used personal-protection measures (e.g., respirators)
- Another study in Malawi found that failure to use personal protection was associated with a 2.6 higher risk of TB disease among HCWs

Sources:

- Jelip J, Mathew GG, Yusin Y, et al. (2004) Risk factors of tuberculosis among health care workers in Sabah, Malaysia. Tuberculosis (Edinb) 84: 19–23
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TB IC FOR PATIENTS CHECKLISTS

Patient Management

- Is there a health care worker that has screened you for prolonged (longer than 2 weeks) duration of cough immediately after you and other patients arrive at the facility.
- Are masks available for you and other patients who are coughing?
- Is there an enclosed waste basket where face masks can be discarded?
- Is there a separate waiting area for patients with suspected infectious TB?
- Are patient who are coughing while waiting to be seen:
  - asked whether they have a history of TB and/or TB treatment
  - asked about the duration of their cough
  - asked to wait in a separate waiting area
  - placed in the front of the line
  - educated about cough etiquette and respiratory hygiene
  - provided with face masks to cover their mouth and nose

- Is there a symptom checklist in place to screen patients for TB?
- Are the following items included in the checklist:
  - Chronic cough (2-3 weeks)
  - Weight loss
  - Night sweats for more than 2 weeks
  - Fever for more than 2 weeks
  - Close contact with someone with TB in the past year
  - History of TB treatment
- Is there a designated area away from other patients where sputum specimens are taken?
- Have you been advised by a health care worker on how to produce a sputum specimen if you needed one?
- Does the health care worker use a respirator when retrieving the sputum specimen?

TB treatment and referrals

- Do you or other patients receive TB treatment from the facility?
- If not, are you and other patients referred to another facility to get treatment?

Environmental Infection Control Measures

- Does the facility:
  - Have open windows on different sides of the room
  - Have open windows on one side of the room
  - Open vents
  - High ceilings
- Are windows:
  - Kept open during the day
  - Kept open during the night
  - Kept open in the summer

- Kept open in the winter
- Kept open during the dry season
- Kept open during the wet season
- Kept open when it is windy

- Are fans available and on in the facility?
- Are there other types of mechanical ventilation systems available in the facility (air conditioners, air extraction systems, etc.)
- Are air cleaning methods used in the facility? (ultraviolet germicidal irradiation UVGI)

Personal Respiratory Protection

- Are N95 masks available?

Patient education and awareness

- Have you been taught about:
  - Signs and symptoms of TB?
  - Cough etiquette and respiratory hygiene?
- Have you been given educational materials?
- Are posters displaying cough etiquette and respiratory hygiene displayed?

TB IC CHECKLIST

TB Infection Control Policy

- Does the facility have a written infection control plan that is kept on site?

Patient Management

- Is there a health care worker who screens patients for prolonged (longer than 2 weeks) duration of cough immediately after they arrive at the facility.
- Are masks available for patients who are coughing?
- Is there an enclosed waste basket where face masks can be discarded?
- Is there a separate waiting area for patients with suspected infectious TB?
- Are patient who are coughing while waiting to be seen:
  - asked whether they have a history of TB and/or TB treatment
  - asked about the duration of their cough
  - asked to wait in a separate waiting area
  - placed in the front of the line

  - educated about cough etiquette and respiratory hygiene
  - provided with face masks to cover their mouth and nose
- Is there a symptom checklist in place to screen patients for TB?
- Are the following items included in the checklist:
  - Chronic cough (2-3 weeks)
  - Weight loss
  - Night sweats for more than 2 weeks
  - Fever for more than 2 weeks
  - Close contact with someone with TB in the past year
  - History of TB treatment
- Is there a designated area away from other patients where sputum specimens are taken?
- Are patients advised by a health care worker on how to produce a sputum specimen?
- Does the health care worker use a respirator when retrieving the sputum specimen?

TB treatment and referrals

- Do patients receive TB treatment from the facility?
- If not, are patients referred to another facility to get treatment?

Environmental Infection Control Measures

- Does the facility:
  - Have open windows on different sides of the room
  - Have open windows on one side of the room
  - Open vents
  - High ceilings

- Are windows:
  - Kept open during the day
  - Kept open during the night
  - Kept open in the summer
  - Kept open in the winter
  - Kept open during the dry season
  - Kept open during the wet season
  - Kept open when it is windy
- Are fans available and on in the facility?
- Are there other types of mechanical ventilation systems available in the facility (air conditioners, air extraction systems, etc.)
- Are air cleaning methods used in the facility? (ultraviolet germicidal irradiation UVGI)

Personal Respiratory Protection

- Are N95 masks available?
- Do staff members use any personal respiratory protection when doing sputum induction?

Patient education and awareness

- Are patients taught about:
  - Signs and symptoms of TB?
  - Cough etiquette and respiratory hygiene?
- Are patients given educational materials?
- Are posters displaying cough etiquette and respiratory hygiene displayed?
- Is training on infection control provided to new staff members?
- Is refresher or ongoing training on infection control provided to staff members?

Staff protection

- Are staff members screened for TB?
- Are staff members offered voluntary counseling and testing for HIV?
- Are policies for reassignment in place for staff members?
- Is HIV-related care available for staff members?
- Is IPT available for staff members?

WHO RECOMMENDATIONS FOR TB INFECTION

Set of activities for national and subnational TB infection control

The national and subnational managerial activities listed below provide the managerial framework for the implementation of TB infection control in health-care facilities, congregate settings and households.

1. Identify and strengthen a coordinating body for TB infection control, and develop a comprehensive budgeted plan that includes human resource requirements for implementation of TB infection control at all levels.
2. Ensure that health facility design, construction, renovation and use are appropriate.
3. Conduct surveillance of TB disease among health workers, and conduct assessment at all levels of the health system and in congregate settings.
4. Address TB infection control advocacy, communication and social mobilization (ACSM), including engagement of civil society.
5. Monitor and evaluate the set of TB infection control measures.
6. Enable and conduct operational research

Set of measures for facility-level TB infection control

The measures listed below are specific to health-care facilities.

Facility-level measures

7. Implement the set of facility-level managerial activities:

   a) Identify and strengthen local coordinating bodies for TB infection control, and develop a facility plan (including human resources, and policies and procedures to ensure proper implementation of the controls listed below) for implementation.

   b) Rethink the use of available spaces and consider renovation of existing facilities or construction of new ones to optimize implementation of controls.

   c) Conduct on-site surveillance of TB disease among health workers and assess the facility.

   d) Address advocacy, communication and social mobilization (ACSM) for health workers, patients and visitors.

   e) Monitor and evaluate the set of TB infection control measures.

   f) Participate in research efforts.

Administrative controls a

8. Promptly identify people with TB symptoms (triage), separate infectious patients, control the spread of pathogens (cough etiquette and respiratory hygiene) and minimize time spent in health-care facilities.

9. Provide a package of prevention and care interventions for health workers, including HIV prevention, antiretroviral therapy and isoniazid preventive therapy (IPT) for HIV-positive health workers.

Environmental controls

10. Use ventilation systems.

11. Use ultraviolet germicidal irradiation (UVGI) fixtures, at least when adequate ventilation cannot be achieved.

Personal protective equipment

12. Use particulate respirators.

WHO RECOMMENDATIONS

What are the key recommendations of the 2010 WHO IPT/ICF Guidelines?

- Adults and adolescents living with HIV should be screened with a clinical algorithm and those who do not have current cough, fever, weight loss or night sweats are unlikely to have active TB and should be offered IPT. **(Strong recommendation)** [1]
- Adults and adolescents living with HIV and screened with a clinical algorithm and presenting with current cough, fever, weight loss or night sweats may have active tuberculosis and should be evaluated for TB and other diseases. **(Strong recommendation)**
- Adults and adolescents who are living with HIV, have unknown or positive TST status and are unlikely to have active TB should receive at least 6 months of INH preventive therapy as part of a comprehensive package of HIV care. This includes individuals irrespective of degree of immunosuppression, those on ART, those who have previously been treated for TB, and pregnant women. **(Strong recommendation)**

[1] A **strong recommendation** is one for which the panel is confident that the desirable effects of adherence to a recommendation outweigh the undesirable effects.

- Adults and adolescents, who are living with HIV, have unknown or positive TST status and who are unlikely to have active TB should receive at least 36 months INH preventive therapy. This includes individuals irrespective of degree of immunosuppression, those on ART, those who have previously been treated for TB, and pregnant women. **(Conditional recommendation)** [2]
- Tuberculin skin test is not a requirement for initiating IPT for people living with HIV **(Strong recommendation)**
- Where feasible, TST can be used as people with a positive test benefit more from IPT than those with a negative test **(Strong recommendation)**
- Providing IPT to people living with HIV does not increase the risk of developing INH resistant TB. Therefore concerns regarding the development of INH resistance should not be a barrier to providing IPT **(Strong recommendation)**
- Children living with HIV and present without poor weight gain[3], fever or current cough are unlikely to have active tuberculosis and should be offered IPT **(Strong recommendation)**
- Children living with HIV and presenting with any one of the following: poor weight gain3, fever or current cough may have active tuberculosis and should be evaluated for TB and other conditions **(Strong recommendation)**
- Children over 12 months of age who are living with HIV who are unlikely to have active TB should receive 6 months of INH preventive therapy (10mg/kg) as part of a comprehensive package of HIV **(Strong recommendation)**
- All children over 12 months of age living with HIV after successful completion of treatment for TB disease should receive INH for an additional 6 months. **(Conditional recommendation)**
- All children with a history of contact with a TB case should receive 6 months IPT irrespective of their age. **(Strong recommendation)**

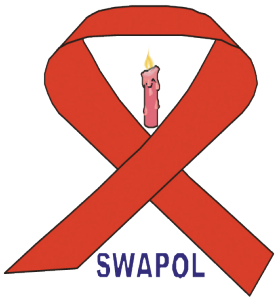
[2] A **conditional recommendation** is one for which the panel concludes that the desirable effects of adherence to a recommendation probably outweigh the undesirable effects. Therefore, the recommendation is only applicable to a specific group, population or setting or new evidence may result in changing the balance of risk to benefit or the benefits may not warrant the cost or resource requirements in all settings

[3] **Poor weight gain** is defined as reported weight loss, **or** very low weight (weight-for-age less than -3 z-score), **or** underweight (weight-for-age less than -2 z-score), **or** confirmed weight loss (>5%) since the last visit, **or** growth curve flattening


ARASA
AIDS & Rights
Alliance
for Southern Africa


ADRA
Adventist Development
and Relief Agency


BONELA
The Botswana
Network on
Ethics, Law
and HIV/AIDS


SWAPOL


TAC
TREATMENT ACTION CAMPAIGN


T A L C


DOTS
for all
Z A P H I T