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

Lead Writer: Donela Besada

Designers: Doret Ferreira and Merylle Cornelson

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Ellen Scout, Partners in Health, Lesotho

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Mara Kardas-Nelson, NAM/HATIP, South Africa

Paula Akugizibwe, ARASA, South Africa

Boniswa Seti, ARASA, South Africa

Lynette Mabote, ARASA, South Africa

Juliet Nanfuka, ARASA, South Africa

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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

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

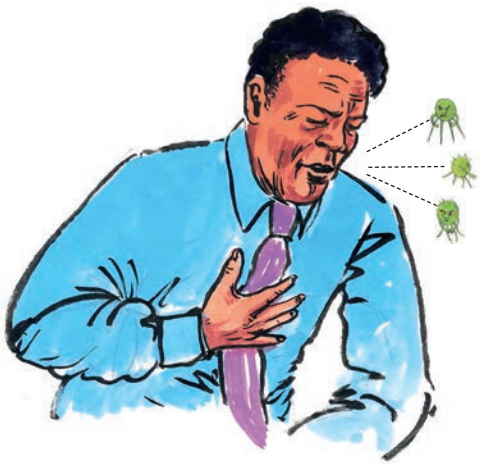
BACKGROUND ON TB & TB/HIV

1. What is TB

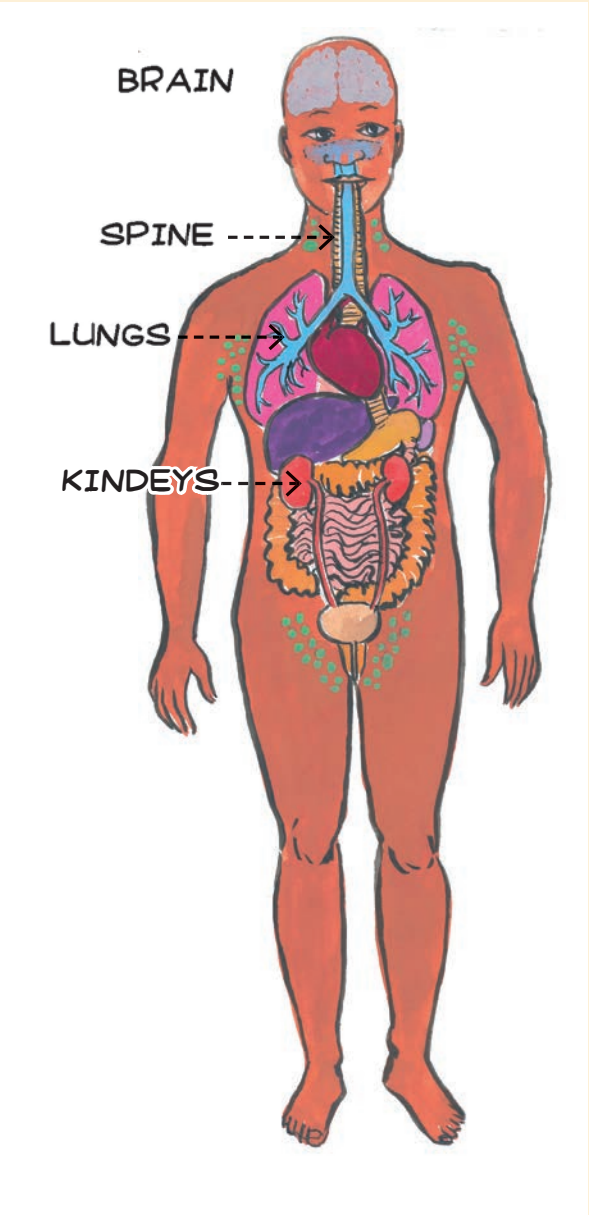
Tuberculosis or TB (short for tubercles bacillus) is an infectious disease caused by various strains of mycobacteria; most often Mycobacterium tuberculosis.

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?



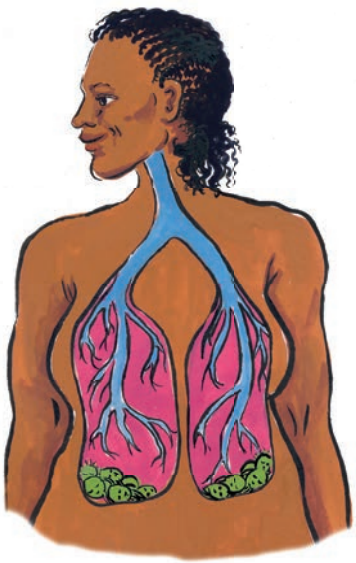
TB is transmitted in the air so most often attacks the lungs but may also affect other parts of the body such as the kidney, spine or brain. People living with HIV and are infected with TB develop extra-pulmonary disease much more often because of their weakened immune system. Infection with M. tuberculosis 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.

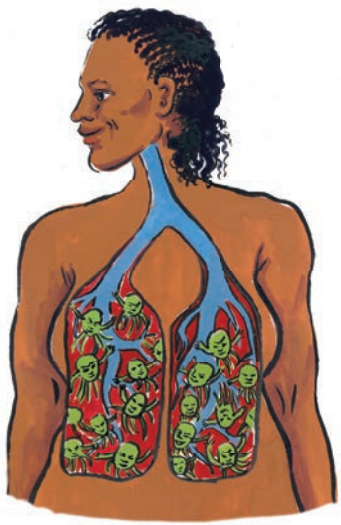
5. What is latent TB?



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

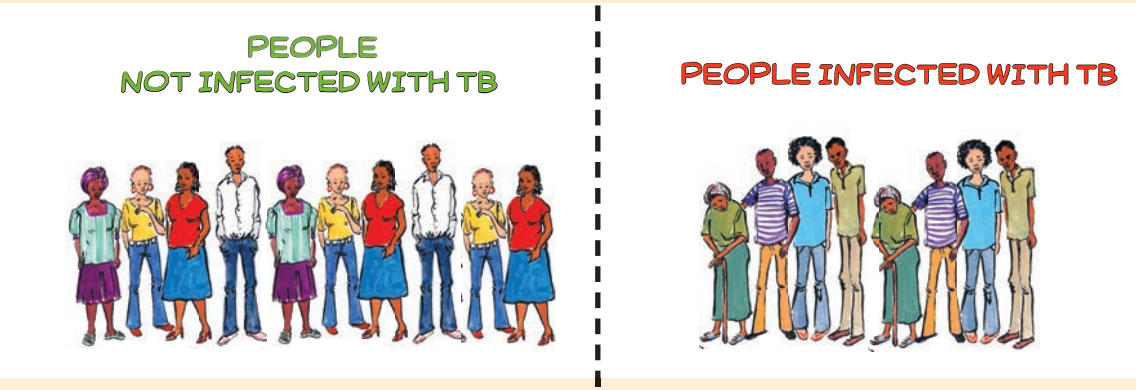
A PERSON WITH LATENT TB	A PERSON WITH TB DISEASE
• Has no symptons	• Has symptoms that may include: - a chronic cough (2-3 weeks) - pain in the chest - coughing up blood or sputum - weakness or fatigue - weight loss - no appetite - chills - fever - sweating at night
• Does not feel sick	• Feels sick
• 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 8.8 million new TB cases in 2010, including 1.1 million cases among people with HIV[3]
- 1.1 million people died from TB in 2010, including 350 000 people with HIV, equal to 959 deaths a day[3]
- In the African region, 76% of those infected with TB are co-infected with HIV, with only 75% 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 Organisation. Global Turberculosis control: World Health Organisation, 2011)

[3] World Health Organization. Global tuberculosis control: a short update to the 2009 report. December 2009. Geneva: World Health Organization, 2011.

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 negative 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"?

The "Three I's for TB" are the 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 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.	- Increased cost and work load. Requires qualified staff. - Non-specific to condition and therefore difficult to accurately intepret.

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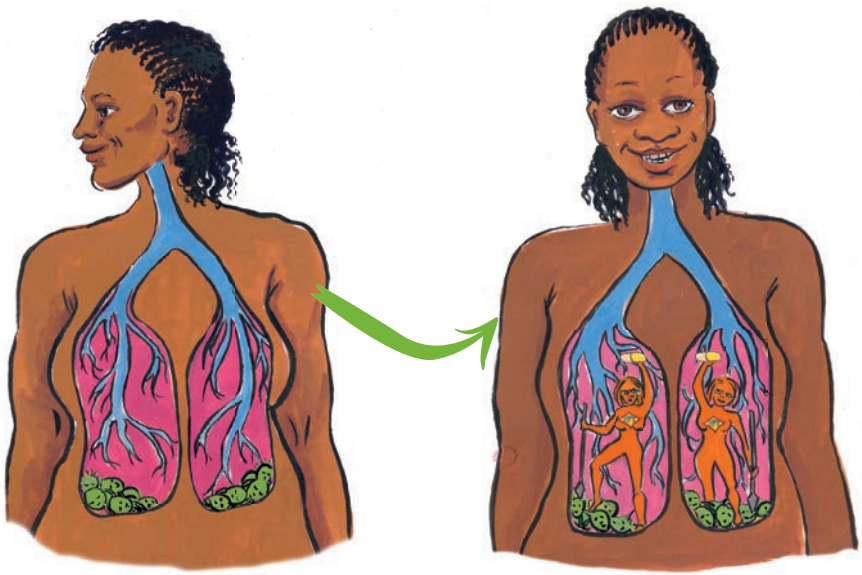
[9] De Cock K, Marston B. The Sound of One Hand Clapping - Tuberculosis and Antiretroviral Therapy in Africa Am. J. Respir. Crit. Care Med. 2005:172(1):3-4.

[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

- There are usually two types of personal protective wear that should be used in health care settings to protect against TB transmission: respirators and masks. It is recommended that N95 respirators be used for health care workers and surgical masks be provided for patients in the waiting area.

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)