

Tuberculosis and People Living with HIV

The single biggest killer of people living with HIV (PLHIV) is a disease known as tuberculosis (TB). You need to know the facts about TB.



In 2016, TB sickened 1 million PLHIV, killing an estimated 374,000. TB is not only life-threatening, it often leads to loss of income and painful stigma and isolation. However, TB is preventable and usually curable, if properly diagnosed and treated.

TB is spread through the air when a person with active, untreated TB is coughing, usually indoors or in enclosed spaces. It is only spread through the air, not by touch or sharing food. TB is not inherited, and falling ill with TB does not mean someone did something wrong. Catching it is as simple as breathing in the germs.

How does TB work? Once the bacteria are breathed in, the immune system usually responds by walling it off to protect the body. TB can remain like this for many years without causing any symptoms or being infectious. In this state it is known as latent TB infection (or LTBI).

But, in PLHIV the immune system is weakened, and the TB infection is much more likely to progress to active disease (causing illness and becoming infectious). Even when taking anti-retroviral medications, PLHIV are more likely to have a TB infection become active and life threatening. People who are malnourished, diabetic, or who are smokers, use drugs or abuse alcohol are also more likely to develop TB, and children under five are especially vulnerable. Additionally, when a woman becomes pregnant, her risk of developing active TB doubles.

Can TB be Prevented?

Everyone, including PLHIV, can take steps to prevent TB infection. The best way to prevent TB from spreading is to ensure that people who have TB have timely access to good treatment—once someone starts on the right treatment for their TB, it rapidly (within a couple weeks) becomes non-infectious.

Note: there is no adequate vaccine against TB – the only TB vaccine available, called BCG, provides some protection for children against the most severe forms of TB, but does not protect against TB into adulthood. BCG cannot be given to infants with HIV.

Early diagnosis and medication for HIV with antiretroviral therapy is crucial in TB prevention. A systematic review of trials has found that ART reduces the risk of developing TB by 65%. Starting ART immediately once diagnosed with HIV, and continuing it, is vital, along with good nutrition to strengthen the immune system to fight off TB.

In addition, PLHIV who do not have TB should take a course of antibiotics for TB prevention. This is called TB Preventive Treatment. It should be given to PLHIV in whom active TB has been ruled

out. There are a few different regimens that can be used for TB preventive treatment, including daily isoniazid for at least 6 months, called Isoniazid Preventive Therapy or IPT. Another newer option is just 12, once-weekly doses of rifapentine and isoniazid, called 3HP.

TB Preventive Treatment can save the lives of PLHIV

In 2008, the WHO recommended TB Preventive Treatment as a public health priority for people with HIV in high-burden settings. Six-year follow-up of a recent study called TEMPRANO found that PLHIV with high CD4 counts, who took a course of six months had a 37% lower risk of death after five years. This reduction in risk was shown to be independent of the benefit provided by early initiation of ART.ⁱ Children under five years of age, regardless of HIV status, who are household contacts of someone with active TB should also receive TB Preventive Treatment, because they face a very high risk of developing TB.

About 1.3 million PLHIV are now taking TB Preventive Treatment, and it has been shown to be a safe medication. It is taken with vitamin B6 (pyridoxine) to help prevent peripheral neuropathy (painful nerve damage).

South Africa and Kenya have been leaders in scaling up access to TB Preventive Treatment, and in 2016 scale up accelerated in 2016 in Mozambique, Nigeria and Zimbabwe. Yet, in Africa overall, coverage has reached only 46% of PLHIV in care. In South-east Asia coverage is much worse, at only 4.1% of PLHIV in care.ⁱⁱ

Fortunately, PEPFAR now requires country programs to report on the scale up of TB preventive treatment, and this should be included in all country operational plans (COPs), with specific targets.

“If a new ART regimen were shown, like IPT in TEMPRANO, to reduce mortality by 37%, the demand for immediate access from clinicians, programmes, international agencies, and the advocacy community would be deafening. The faint whispers for IPT must be amplified and action must be taken to reduce deaths from such an eminently preventable disease.” -- Richard E. Chaisson, Jonathan E Golub, Johns Hopkins University

Current Coverage of TB Preventive Therapy in Selected Countries (data from WHO, 2017)

	Number of People Living with HIV Newly Enrolled in Care in 2016 (A)	Number receiving TB Preventive Therapy (B)	TB Preventive Therapy Coverage % (B*100/A)
UR Tanzania	49,351	4,202	8.5
Liberia	4,528	390	8.6
Swaziland	138,016	21,320	15
Sierra Leone	17,843	3,609	20
Nigeria	216,293	62,781	29
Malawi	145,117	72,446	50
South Africa	751,620	385,932	51
Ethiopia	36,761	19,244	52
Mozambique	315,712	162,646	52
Zimbabwe	168,968	123,846	73

Additional preventive steps

Opening windows and doors and using fans, when properly placed, can increase circulation of fresh air. UV light, such as from the sun or from special artificial lights, can kill TB germs. Someone who has active, infectious TB and is coughing should cover their mouth when coughing or wear a mask to prevent the spread to others. People who are around someone with active, infectious TB can wear a special N-95 respirator mask to protect themselves from the germs. Good nutrition and avoiding smoking also support TB prevention.

Rapid Diagnosis of TB

TB symptoms can be any of these: coughing; night sweats; weight loss; fever or coughing up blood.

All PLHIV should be aware of these symptoms and should be screened for active TB at every encounter with a health facility. Screening is also important for children, especially if they may have been exposed to someone with TB. Unfortunately, many people are diagnosed late or not at all! The most common test for active TB is sputum microscopy, but this time-consuming approach does not work well, especially for PLHIV, and many cases are missed. One reason is that PLHIV are more likely to have fewer TB bacteria in the sputum and often have TB outside the lungs.

We must end the reliance on the microscope to diagnose TB. A much better approach is to incorporate two, modern tests to determine an accurate and rapid diagnosis, while also assessing clinical signs. These new tests are Urine LAM and Xpert.

The urine LAM test was first recommended by WHO in 2015, yet few countries are using it. It is a simple, cheap and rapid test that detects the presence of lipoarabinomannan (LAM), a small protein the TB germ gives off, which can then be found in urine. It gives a result in just 25 minutes, at a cost of \$3.50 per test. It works well with people who have advanced HIV. If the test indicates TB, treatment for TB should be started **immediately**. Uganda and South Africa have been leading in the adoption of this test, and Kenya plans to launch it in 2018.

“Everyone has the right to health and to benefit from scientific progress. People with advanced HIV have a right to access this life-saving test. It is a violation of their rights that LAM testing is largely unavailable.” – Treatment Action Group, *An Activist’s Guide to the TB LAM Test*ⁱⁱⁱ

The LAM test can miss cases, so in people with advanced illness who test negative there should be a follow up test using Xpert/MTB-RIF.

Xpert is a test that uses sputum, or other samples, and it detects the genetic material of the TB germ. It is much more accurate than sputum microscopy and provides a result in under two hours, while also indicating if the germ is Multi-Drug Resistant TB, which is a major killer of PLHIV. It can also be used to rapidly detect TB outside the lungs, and so works much better for PLHIV, including children.

But the Xpert test is not just for PLHIV. In 2017 WHO recommended Xpert as the initial diagnostic test for all adults and children with signs and symptoms of TB, but **the Xpert test is still underutilized.**

^{iv} For instance, in South Africa in 2016, 69% of TB cases were tested with Xpert; while in Uganda only 24% were tested with Xpert; in Kenya, 26% and, in Tanzania, 8.2%.^v

ACTION STEPS:

- Be “TB Aware” – know the facts about TB and educate your community.
- If you or someone you care for is receiving HIV care, insist on these effective approaches to TB prevention and diagnosis.
- If you or someone you care for is not receiving TB Preventive Therapy, ask for it.
- If you or someone you care for is being screened for TB, ask about access to LAM and Xpert.

Advocacy:

- Ask HIV and TB program implementers in your country about access to TB Preventive Therapy. Ask them about TB screening for PLHIV and rapid diagnosis with LAM and Xpert.
- Urge Ministers of Health to prioritize faster adoption of these life-saving technologies! Share your concerns with Parliamentarians, including members of the Global TB Caucus.
- PEPFAR Dialogue: PEPFAR consults with civil society groups about what should be prioritized in Country Operational Plans. Insist on bold targets for TB-HIV services, including TB Preventive Therapy and rapid diagnosis with LAM and Xpert.
- Global Fund processes: as Country Coordinating Mechanisms develop proposals to the Global Fund, urge that proposals include funding for these effective approaches, as well as for human resources to support faster scaleup.

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More information:

- RESULTS – www.results.org
- Treatment Action Group – www.treatmentactiongroup.org
- Global TB Community Advisory Board (TB CAB) – <http://www.tbonline.info/>
- ARASA – www.arasa.info

ⁱ [http://www.thelancet.com/pdfs/journals/langlo/PIIS2214-109X\(17\)30390-X.pdf](http://www.thelancet.com/pdfs/journals/langlo/PIIS2214-109X(17)30390-X.pdf)

ⁱⁱ http://www.who.int/tb/publications/global_report/gtbr2017_main_text.pdf?ua=1

ⁱⁱⁱ <http://treatmentactiongroup.org/content/activists-guide-tb-lam-test>

^{iv} <http://www.treatmentactiongroup.org/tb/diagnostic-tools>

^v http://www.who.int/tb/publications/global_report/gtbr2017_main_text.pdf?ua=1