Q&A for media – Tuberculosis preventive treatment: Access and challenges

Médecins Sans Frontières/Doctors Without Borders (MSF)
15 June 2021

Are we all at risk of contracting TB?

Despite being preventable and curable, tuberculosis (TB) remains one of the world's top infectious disease killers. In 2019 alone, the World Health Organization (WHO) estimated that 10 million people fell ill with TB and 1.4 million people died, 208,000 of whom were also living with HIV/AIDS.

Although anyone can be infected with TB, the disease disproportionately affects vulnerable populations including socially marginalised people, people living in slums, people who are incarcerated, migrants, people affected by conflict as well as people living with HIV/AIDS. As TB is transmitted by the respiratory route, people living in proximity to TB patients are always at high risk of getting infected. It is estimated that one-fourth of the world's population is currently infected with the TB mycobacterium and of those, 5-10% will develop active TB disease in their lifetime.

Can TB be prevented?

Actively identifying all people currently sick from TB and curing them by providing the best possible treatment can help in preventing further transmission of TB. However, additional key public health measures are needed to further control the spread of the disease. Among them, tuberculosis preventive treatment (TPT) is crucial. This involves providing one or more TB drugs to protect people who have been infected with TB, such as family members and other close contacts of TB patients. When a person is infected with TB but has no symptoms, they have latent TB infection (LTBI). During the period when a person has LTBI but is not yet sick, there is an opportunity for TPT to prevent the progression of LTBI, a simple infection, to full-blown TB disease. Although LTBI is not contagious, its treatment is needed not only to prevent TB for the individual person but also reduce future TB transmission within the community.

Are we doing enough to prevent TB?

During the 2018 United Nations High Level Meeting (UN-HLM) on Tuberculosis, countries agreed on new and bold targets for TB control. The governments also agreed to a target of 30 million people receiving TPT by end of 2022. Unfortunately, while the effectiveness of this preventive treatment has been repeatedly demonstrated, its implementation still lags behind. By 2019, only 20% of the 5-year TPT target had been achieved for contacts of TB patients who were children < 5 years old and, less than 1% had been achieved for older children/adolescents and adults. One of the reasons for this lag is the use of older regimens that last 6-9 months. New and improved regimens for TPT that last 1-3 months exist but are more expensive and difficult to procure. In addition, before providing TPT, the presence of active TB disease needs to be excluded using costly diagnostic tests. Ideally, wide-scale screening for active TB disease should be implemented for all high-risk populations and individuals, however the equipment required, including digital X-rays and computer assisted diagnosis, are out of reach for most countries. Diagnosis of LTBI is also challenging due to complexities and high cost.

Taking into account the insufficient progress in the implementation of TPT, WHO will be convening a virtual meeting on June 16 where health officials and other stakeholders will be gathering to further discuss the barriers to achieve the targets that were set in 2018 and launch a renewed call to action for scaling up TPT and TB screening.

What are the challenges in scaling up of TPT?

All countries are accountable to properly implement TPT activities as agreed in the UN-HLM. To do so they need to have access to adapted tools for screening, diagnosis and treatment of TB disease and LTBI.

While TBT has been recommended by WHO since 1998 with the standard 6-9 months of isoniazid, there are now several shorter regimens available leading to improved outcomes, reduced toxicity, increased treatment completion and similar efficacy than the older regimen. Rifapentine, used in combination with isoniazid, is a key drug in the shortened 1-3-month TPT. However, despite proven advantages, access to these regimens remains a challenge due to the high cost and limited number of suppliers, including for fixed-dose combinations and pediatric formulations.

While 6 months of isoniazid (6H) is estimated to cost around US$3.50, prior to the end of May 2021, the rifapentine plus isoniazid needed for the daily 1 month regimen (1HP) was estimated to cost $26.00 while the 3-month regimen given weekly, rifapentine plus isoniazid (3HP), was estimated to cost around $15.00 based on agreements set in 2019 between Sanofi and UNITAID[5] and in 2021 between Macleods and UNITAID/CHAI. Reduced prices for quality-assured rifapentine is key for ensuring broader preventive treatment scale-up.

Diagnostic tools are needed to screen widely for active TB and to exclude active disease before initiation of TPT. Radiography technologies for the screening of active TB disease adapted to field conditions, especially with the help of computer-assisted diagnosis, are expensive and not widely available in the field.

WHO approved molecular tests to confirm active TB disease, including drug resistant TB (DR-TB), are also essential. Indeed, another reason for insufficient TPT implementation is that healthcare workers fear providing TPT to someone who is already sick with TB. Cepheid's GeneXpert MTB/RIF Ultra cartridge is the most common test in developing countries, but access remains limited due to the high cost of cartridges. Cepheid currently sells the TB test for $9.80, but MSF has long demanded that the company reduce the price of the test to $5 based on MSF's analysis that it costs Cepheid less than $5 to produce the test. A profit margin of more than 200% from sales to countries' TB control programmes is not acceptable.

Currently, two types of tests exist for screening LBTI. The older tests such as the tuberculin skin test (TST), although cheaper, are time consuming and more complicated to implement. The interferon release gamma assays (IGRAs) are more precise but also more expensive and need to be carried out in sophisticated laboratories. To ensure effective screening at point of care, simple and inexpensive alternatives are needed.

For more information on WHO guidelines, please consult:

- WHO consolidated guidelines on tuberculosis Module 1: TB preventive treatment
- WHO consolidated guidelines on tuberculosis Module 2: Screening – Systematic screening for tuberculosis disease
- WHO consolidated guidelines on tuberculosis Module 3: Diagnosis - Rapid diagnostics for tuberculosis detection

What has been MSF's engagement with TPT?

In MSF projects, TPT is an important part of our response to TB that includes providing preventive treatment to all those in need and developing innovative patient-centered programmes. For example, MSF developed a comprehensive TB prison programme in Blantyre, Malawi, which included not only screening and treatment for TB disease but also provision of TPT for all those in need including people living with HIV/AIDS and people shown to have LTBI after a tuberculosis skin test. Of almost 1,500 individuals screened in 2019, 666 non-HIV infected individuals were started on TPT with almost 90% completion, while 324 prisoners living with HIV were also started on TPT. In Khayelitsha, South Africa, MSF is providing TPT for children who are contacts of people having DR-TB. Even in the midst of the COVID-19 outbreak, adaptations towards models of care for the provision of TPT closer to beneficiaries allowed more than 100 household contacts to be started on TPT (in comparison with less than 40 before programme adaptations).

What are our recommendations to ensure scale-up of TPT?

MSF calls on all stakeholders including national governments, implementing partners and funding agencies to:

- Support wider implementation of TPT, with mechanisms established for financial support for resource limited countries.
- Ensure coverage of key populations including people living with HIV, refugees, household contacts including adults and people who are incarcerated.
- Prioritise community-based initiation of TPT. Ensure screening of families so that when a person has TB disease, their entire family is screened for TB disease and those who are sick receive treatment while those without active TB disease receive TPT.
- Ensure continuum of care – appropriate screening and diagnostic packages to rule out active TB and LTBI. Ensure affordability, accessibility and availability of essential diagnostics including chest radiography (with computer assisted diagnosis), molecular tests to diagnose TB and rifampicin resistance and point of care alternatives for IGRA tests. These tests are essential to establish the link between TPT, case finding, TB treatment and contact tracing activities.
- Ensure universal screening and comprehensive TB care including TPT in settings such as prisons.
- Integrate TB and COVID-19 activities (e.g. COVID-19 diagnostic testing, COVID-19 vaccination).

MSF calls on manufacturers and donors to take the necessary steps to ensure:

- Affordable prices for rifapentine and further development of alternative formulations for children and fixed dose combinations with isoniazid. Steps should be taken to ensure proper marketing approval of the drugs and their combination in all countries.
- Affordable prices for levofloxacin, used for DR-TB prevention, including for formulations for smaller children.
- Availability of GeneXpert cartridges at $5 per test.
- Development of field adapted cheaper alternatives for radiography/CAD and IGRAs as point of care tests.
- Support the academic community in research and development (R&D) of shorter TPT regimens including long-acting formulations of TB drugs.