

ADVANCING TUBERCULOSIS PREVENTION

ISSUE BRIEF

ADVANCING TB PREVENTION

Ensuring people have access to diagnosis and appropriate care at the earliest stage after exposure to tuberculosis (TB) is critical to reducing TB transmission and ending the epidemic. There are no scenarios in which we can end the global TB epidemic without a much greater focus on TB prevention.

Through the Sustainable Development Goals, the world's governments have committed to ending the global TB epidemic by 2030. Recognising that countries were not making fast enough progress against TB to achieve that goal, in 2018 the United Nations convened the first-ever High-Level Meeting on TB (UN HLM) in order to catalyse high-level political activity that could accelerate the response to TB.

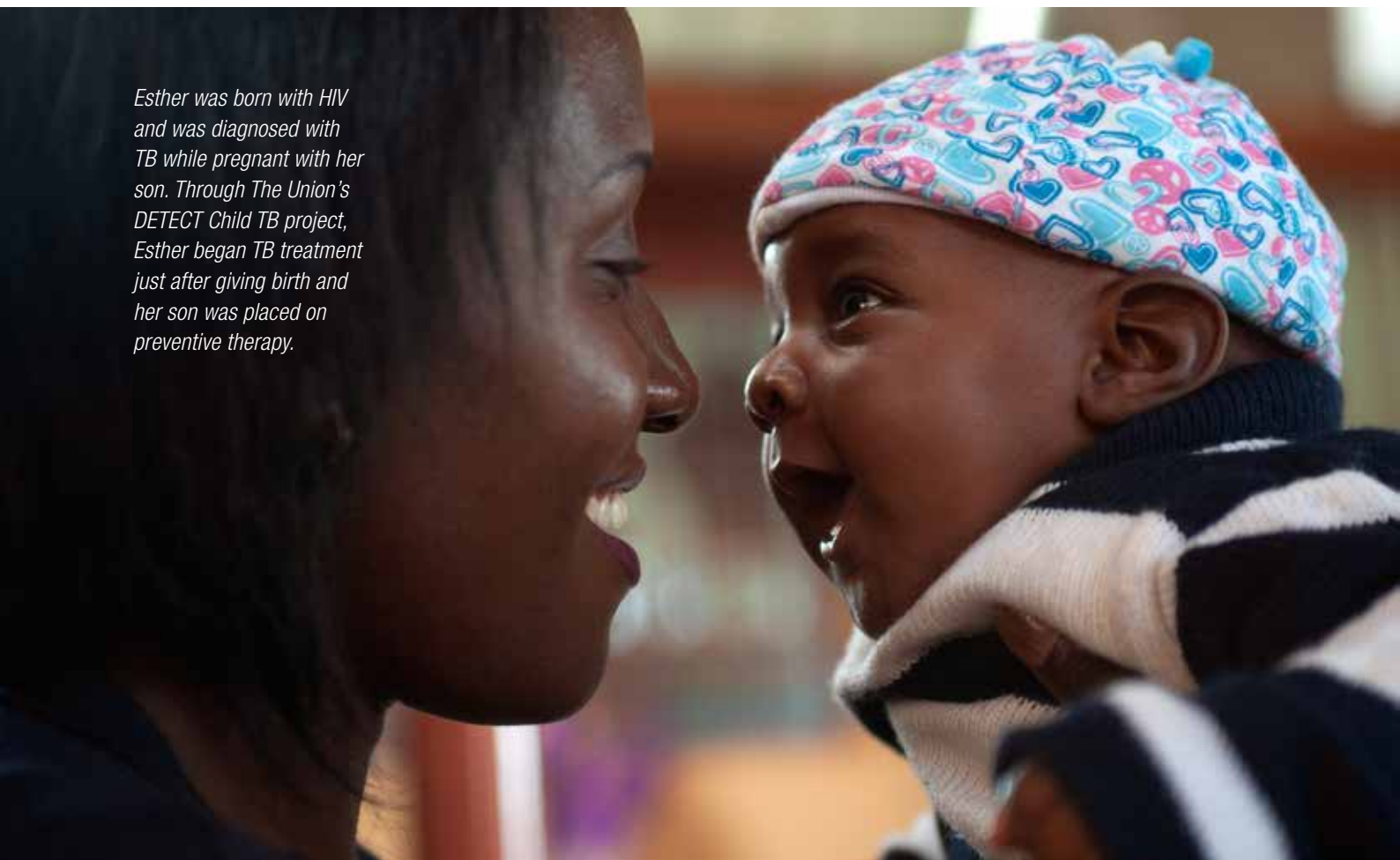
After many years in which the management of TB prevention has been a neglected issue, there is now high-level political commitment to prevent TB. In the UN HLM Political Declaration on the Fight Against TB, governments recognised that “the

vast majority of those in need still lack access to high-quality prevention...”, and in response committed “to prevent tuberculosis for those most at risk of falling ill through the rapid scale-up of access to testing for tuberculosis infection, according to the domestic situation, and provision of preventive treatment, with a focus on high burden countries”, setting a target to reach at least 30 million people with preventive therapy by 2022, including:

- Four million children under five years of age
- 20 million other household contacts of people affected by tuberculosis
- Six million people living with HIV and AIDS (PLHIV)

Reaching 30 million people with preventive therapy is actually a base minimum; the declaration explicitly envisions reaching “millions more”. Governments addressed the other two ways to prevent TB as well, committing to develop new TB vaccines and to enact other prevention strategies, including infection control and measures to prevent TB transmission in “work places, schools, transportation systems, incarceration systems, and other congregate settings.”

Esther was born with HIV and was diagnosed with TB while pregnant with her son. Through The Union's DETECT Child TB project, Esther began TB treatment just after giving birth and her son was placed on preventive therapy.



WHAT IS TUBERCULOSIS?

TB is an infectious disease caused by *Mycobacterium tuberculosis* bacteria. While TB typically affects the lungs, it can affect any part of the body.

TB spreads from person to person through the air when someone sick with the disease coughs, sneezes or spits. Another person needs only to inhale a few of these germs in order to become infected. Typically, each person infected with TB bacteria will live with the infection, but have a 5–10 percent lifetime chance of developing TB disease over their lifetime. People with impaired immunity, such as people living with HIV, children under five years and those on certain medications that affect the immune system have a much higher risk of developing TB disease. Key to TB prevention is reaching people with preventive therapy before the infection develops into active, infectious disease.

TB INFECTION: KEY FACTS

- People living with TB infection have been infected by TB bacteria but are not presently ill with TB disease, nor can the bacteria pass from them to others. In some instances, however, TB infection develops into TB disease. When this happens people become sick, and the bacteria are then able to be passed to others.
- About one quarter of the world's population¹ is living with TB infection.²
- Individuals in close contact with someone who is sick with pulmonary TB disease³ are at higher risk of TB infection versus individuals who have more casual contact.
- Among people living with TB infection, those with weakened immune systems are at higher risk of developing TB disease – particularly children under five years and and people living with diabetes or HIV.
- People are at highest risk of developing TB disease one to two years after acquiring TB infection.
- Those living with TB infection who receive TB preventive treatment are 60 to 90 percent less likely to develop TB disease.⁴

PROVIDING TB PREVENTIVE TREATMENT: THE STATE OF PLAY

Health systems are supposed to actively identify and promptly provide care for people with TB disease. They should then carry out a routine process of identifying at least household contacts, provide them screening for TB infection, and offer preventive treatment for those with or at risk of TB infection. Given the sheer absolute number of people living with TB infection, combined with the fact that some groups of people face relatively higher risks of developing TB disease than others, WHO provides guidelines recommending which groups of people health systems should prioritise in providing TB preventive treatment: people living with HIV, household contacts of people, including children, diagnosed with pulmonary TB disease, and people within clinical risk groups (e.g., people receiving dialysis).⁵

National TB guidelines typically call for greater access to TB prevention, but with the notable exception of South Africa, implementation is weak across low-income countries where TB is common.

49%

The global percentage of PLHIV newly enrolled in HIV treatment who received TB preventive treatment in 2018. Coverage ranged from 10 percent in Indonesia to 97 percent in the Russian Federation.

27%

The global percentage of eligible children under five years who received TB preventive treatment in 2018.

79,195

The total number of people in all other age groups (not including PLHIV) who received TB preventive treatment in 2018 – a 30 percent decrease from 2017.⁶

It is feasible to reach far more people with preventive treatment. The Union has conducted operational research in several countries in Africa and found that providing people with TB preventive care is feasible even in settings with limited resources.^{7,8} And the number of PLHIV who are known to have received TB preventive treatment increased from one million in 2017 to 1.8 million in 2018, meaning the target to reach six million PLHIV by 2022 is within reach.⁹

TB PREVENTIVE TREATMENT OPTIONS ARE IMPROVING

For years, the standard treatment for TB infection that people could take to prevent TB disease has been six months of daily treatment of the medicine isoniazid. In recent years a number of new treatment options have been tested and shown to be as effective in treating TB infection, while also requiring less treatment time.

3RH

World Health Organization (WHO) guidelines for treating TB infection describe 3RH – three months of daily treatment with a combination of isoniazid and rifampicin – as an alternative option to six months of isoniazid when providing TB preventive treatment for children and adolescents under 15 years of age in countries with a high incidence of TB.

3HP and 1HP

These two regimens contain a newer drug that has allowed considerable shortening. 3HP involves weekly doses of a combination of isoniazid and rifapentine taken over three months. 1HP involves daily doses of

isoniazid and rifapentine taken over four weeks – though has so far only been tested among PLHIV. Despite being on the WHO's Essential Medicines List, however, rifapentine is often unavailable or difficult to find in low-income countries. The medicine has also been significantly more expensive than isoniazid. At the 50th Union World Conference on Lung Health in Hyderabad, India, it was announced that Unitaid and the Global Fund had reached an agreement with Sanofi SA to reduce the price of rifapentine by 66 percent – from €13.60 to €4.62 – for a one-month supply for the public sectors of low- and middle-income countries and upper-middle-income countries with a high burden of TB and TB-HIV. The announcement came at a time when the Aurum Institute, based in South Africa, and its partners prepare to roll out 3HP in 12 high-TB-burden countries with plans to reach 400,000 people living with TB infection.

4R

A regimen that involves daily treatment with rifampicin is another option for treating TB infection. But because rifampicin has many drug-drug interactions, this regimen requires caution to be exercised, especially among PLHIV who are taking antiretroviral therapy.



ACTIONS THE UNION IS TAKING TO ADVANCE TB PREVENTION

Developing new models of preventing TB in children

Starting in 2014, The Union piloted DETECT Child TB in two districts in Uganda, testing the model in both rural and urban environments. Working directly with Uganda's public health system, The Union trains health workers to recognise signs and symptoms of TB so that children who have been exposed to TB can be evaluated closest to where they live. Children are supported by community health workers to complete their preventive treatment. Community health workers receive smart phones where they can enter treatment data, which are then automatically centralised and used to monitor outcomes. Using this approach, the uptake of preventive therapy among children increased from five percent to 72 percent in these two districts in just two years.

In the TITI study, The Union tested a similar approach in Benin, Burkina Faso, Cameroon and the Central African Republic, showing that providing preventive therapy to children was feasible, with high rates of treatment completion, in settings with limited resources. The TITI study specifically tested the feasibility and outcomes associated with treating children with preventative treatment, including a shorter treatment of three months of rifampicin and isoniazid (3HR) versus the standard six months of daily treatment with isoniazid (see Box: TB preventive treatment is improving).

Building capacity of health workers through new training programs and resources

The Union has developed a free online training on TB prevention for health workers that is geared for national TB and AIDS programme staff and clinicians, including pediatricians, pneumologists, general practice physicians, clinical officers, nurses and paramedical staff, and other health care workers involved in TB services.

The training course is designed to improve knowledge in all aspects of management of TB infection, with the aim of increasing country-level implementation of TB prevention services. The course's purpose is to support public health systems to improve TB preventive care for persons who have been exposed to TB bacteria, with emphasis on children under five years, people living with HIV and people who are household contacts of people with pulmonary TB and are at risk to develop TB disease. Learners who successfully complete the course receive an accredited certificate of



Image shows (top) a community health worker with the DETECT Child TB project visiting a family affected by TB; and (bottom) Ansek, photographed during a visit with a nurse to initiate preventive treatment following his uncle's TB diagnosis, as part of the TITI study.

completion. The course includes six modules that together provide a comprehensive training on TB prevention:

- Module 1: Introduction to TB
- Module 2: Pathogenesis of TB
- Module 3: At-risk populations
- Module 4: Identifying TB infection
- Module 5: TB prevention therapy (TPT)
- Module 6: Implementation of TB prevention

Launched at the 50th Union World Conference on Lung Health, in 2019 The Union published the 7th edition of the *Management of Tuberculosis: A Guide to Essential Practice*. Popularly known as the “Orange Guide”, the publication is a widely used reference for health workers worldwide. The latest edition includes a revised chapter on TB prevention that provides clear guidance regarding critical questions such as:

- What measures should be taken for TB infection prevention and care?
- How to identify person with TB infection?
- What is TB infection and how is it treated?
- How does the BCG vaccine work?

Advocating for TB prevention

Governments need to accelerate access to TB prevention in order to fulfill their UN HLM commitment to reach at least 30 million people. To that end, The Union is involved a range of activities that promote solutions and mobilise action across various sectors:

Promoting models of prevention among policymakers and the news media

In the summer of 2018, The Union led delegations of journalists and, in partnership with the Global TB Caucus, parliamentarians from five countries in Africa, all of whom travelled to Uganda to learn about the DETECT Child TB approach.

Mobilising business leaders

Through activities like the Corporate Roundtable on TB Prevention, co-hosted with the Government of India and Apollo Hospitals at the 50th Union World Conference on Lung Health, The Union has begun conducting new outreach to major business leaders. The aim is to co-create new private sector solutions including workplace TB prevention programmes, public communications campaigns focussed on TB prevention, and efforts that help to eliminate stigma associated with TB.

Proposing innovative solutions

In a speech delivered by The Union’s president, Dr Jeremiah Chakaya Muhwa, at the UN HLM on TB and in a subsequent article in the *International Journal Against Tuberculosis and Lung Disease*, The Union proposed a new idea: designate the month of March as TB Prevention Month. Establishing TB Prevention Month would create new opportunities for advocacy, including making it easier for heads of state and government to participate in highly visible public TB events. TB Prevention Month would also allow for new campaign initiatives that bring advocacy and public health interventions together. With a newly available regimen that treats TB infection in just one month, public health departments, NGOs, and places of work could participate in prevention drives that both raise awareness and support people living with TB infection to complete a full course of preventive therapy.

Placing human rights first

People at risk of TB disease have a right to know their TB status – whether they’re living with TB infection or TB disease – and to make informed decisions in the best interest of their health and their children’s health. Achieving the UN HLM prevention target will require widespread acceptance of people’s rights to information, treatment and care for TB that includes those living with TB infection.

M72 VACCINE CANDIDATE SHOWS PROMISE FOR NEW TB VACCINE DEVELOPMENT

The most powerful tool we could have for TB prevention and elimination is a new vaccine. Currently there is no vaccine available to prevent TB disease in adults who are already living with TB infection or prevent TB infection. In a phase IIb clinical trial, the M72/AS01_E vaccine – more popularly known as M72 – was effective in preventing TB disease in more than half of the adults who received the vaccine. M72 requires further testing in order to advance the vaccine through the research pipeline.

Hasijah, a community health worker with the DETECT Child TB Project.

¹ Global tuberculosis report 2019. Geneva: World Health Organization. 2018. Online. https://www.who.int/tb/publications/global_report/en/

² Also referred to as latent TB infection (LTBI).

³ Pulmonary TB disease is TB that affects the lungs. Most TB is pulmonary, but TB can also affect other organs.

⁴ TB preventive care. Geneva: WHO. 2019. Online. <https://www.who.int/tb/areas-of-work/preventive-care/en/>

⁵ Latent tuberculosis infection: updated and consolidated guidelines for programmatic management. Geneva: World Health Organization. 2018. Online.

⁶ WHO. Global tuberculosis report 2019.

⁷ Schwoebel V, Koura KG, Adjobimey M, Gnanou S, Goupehou Wandji A, Gody J-C, Roggi A, Tr. bucq A. Preventing tuberculosis in child contacts with 3-month rifampicin-isoniazid and 6-month isoniazid preventive therapy in four African countries. 50th Union World Conference on Lung Health, Hyderabad, India, 30 October–2 November 2019.

⁸ Zawedde-Muyanja S, Nakanwagi A, Dongo JP, Sekadde MP, Nyinoburyo R, Ssentongo G, Detjen AK, Mugabe F, Nakawesi J, Karamagi Y, Amuge P, Kekitiinwa A, Graham SG. Decentralisation of child tuberculosis services increases case finding and uptake of preventive therapy in Uganda. *Int J Tuberc Lung Dis* 2018; 22(11): 1314–1321.

⁹ WHO. Global tuberculosis report 2019.

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