

# Tuberculosis



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## The Challenge

Tuberculosis (TB) is an airborne, bacterial, infectious disease mainly affecting the lungs. Those with the bacteria in their lungs can infect others when they cough, which makes the disease highly contagious. On average, someone is newly infected with *TB bacilli* (the bacteria that causes tuberculosis) every second.

With more than 95% of TB cases occurring in low- and middle-income countries, those least equipped to fight the disease are the most affected. Poor health systems hinder efforts to stop the spread of TB and to treat those already infected. And because HIV/AIDS weakens the immune system, those who are HIV-positive are 26-31 times more likely to develop the disease than someone without HIV. TB is a leading cause of death for AIDS patients, as TB bacteria can take advantage of an individual's immune system compromised by HIV. Of the 9.6 million individuals newly infected with TB in 2014, 12% were also HIV-positive.

TB causes 1.5 million deaths each year (400,000 of whom are also HIV-positive) and is a leading cause of death in low- and middle-income countries. The toll comprised 890,000 men, 480,000 women and 140,000 children. Over 95% of TB deaths occur in low- and middle-income countries, and it is among the top 5 causes of death for women aged 15 to 44.

Only one preventive vaccine exists, and it is only partially-effective for children. The vaccine, *Bacilli Calmette-Guerin* (BCG) is used to vaccinate children against childhood tuberculosis meningitis in countries where TB is endemic. The vaccine is less effective for adults, who usually contract pulmonary TB, against which this vaccine has little effect. A successful adult TB vaccine has not yet been developed.

The evolution of the disease, along with misuse of the drugs used to treat it, has led to the development of drug-resistant forms of TB. Multidrug-resistant TB (MDR-TB) is difficult and expensive to treat, often failing to respond to standard first-line drugs. MDR-TB infected about 480,000 people and killed 190,000 people in 2014. More recently, an even more deadly strain of the disease has emerged, called Extensively Drug Resistant Tuberculosis (XDR-TB), which responds to even fewer available medicines, including the most effective second-line anti-TB drugs.

## **The Opportunity**

TB is treatable and curable. In many endemic countries, \$20 will buy a full six-month drug course of TB treatments; when administered properly (including with information, supervision and support to the patient by a health worker or trained volunteer), success rates are high. Between 2000 and 2014, an estimated 43 million lives were saved through TB diagnosis and treatment, with treatment success improving each year.

The global response to TB has made significant inroads against the disease. Since 1990, TB mortality has fallen by 47%, and as of 2015, the MDG target to halt and reverse TB incidence has been achieved on a worldwide basis, in each of the six WHO regions and in 16 of the 22 high-burden countries that collectively account for 80% of TB cases. .

The Global Fund to Fight AIDS, Tuberculosis and Malaria has supported the detection and treatment of 13.2 million cases of TB, providing 80% or more of the world's external funding for TB. Despite this progress, much more remains to be done. While funding for TB control has increased, funding for TB in 2014 amounted to only \$1.5 billion, a 9% decrease from the previous year.

From 2016, the goal is to end the global TB epidemic by implementing the End TB Strategy. Ratified by the World Health Assembly in May 2014 and (with targets) linked to the newly adopted Sustainable Development Goals (SDGs), the strategy serves provides a platform and a framework for countries to reduce the number of TB deaths by 90% by 2030 (compared with 2015 levels), cut new cases by 80% and ensure that no family is burdened with catastrophic costs due to TB.