



Curbing and Ending Pandemics: the pivotal role of the GFATM

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COVID-19 Update -The Global Fund to end AIDS, Tuberculosis and Malaria estimates that the volume of HIV testing has dropped by 50% in some places and new TB case notifications have dropped by up to 75%¹. This translates into in new infections as people unaware of their status continue to transmit the diseases to others, which combined with disruptions in treatment, could result in as many as 1.3 million additional deaths from tuberculosis² and more than 300,000 additional deaths from AIDS³. For malaria, the good news is that bednet distributions have continued in many countries, leading to only minimal backsliding so far.

¹<https://www.theglobalfund.org/en/news/2020-09-14-global-fund-partnership-has-saved-38-million-lives>

²http://www.stoptb.org/assets/documents/news/Modeling%20Report_1%20May%202020_FINAL.pdf

³ for Africa alone, http://www.stoptb.org/assets/documents/news/Modeling_Report_1_May_2020_FINAL.pdf

Background

Extreme poverty comes in most cases with a very limited access to health care. Indeed, health outcomes is one of the ways to measure a household's degree of poverty (see our analysis *What is Poverty?*).

In practice, in the developing world, ill health is both a consequence and a cause of economic poverty, and this creates a downward spiral: economically poor people do not have the resources to pay for health care or even when health care is free, for the transportation and/or child care costs associated with care; conversely, people in poor health tend to be less employable and when employed or self-employed, they are often less productive.

Among the main preventable causes of poor health among children and adults are infectious diseases, in particular AIDS, TB and Malaria.¹

The Global Fund against AIDS, TB and Malaria is the leading organization tasked by the international community to accelerate the end of AIDS, tuberculosis and malaria as epidemics, and one of the most effective organizations in the field of international development.

The Pandemics meet their match: The Global Fund against AIDS TB and Malaria

The Global Fund was founded in 2002 as a partnership governed by representatives of donor and implementing governments, civil society, the private sector and people affected by the diseases. The idea for the Global Fund arose from a wellspring of political advocacy coming face-to-face with the imperatives of global leadership. AIDS, TB and malaria are all preventable and treatable – but solving this problem requires the commitment not only of world leaders but all stakeholders.

The Global Fund raises and invests nearly US\$4 billion a year to support programs run by local experts in countries and communities most in need. As of May 2019, Canada had contributed a cumulated US\$2.4 billion to the fund, i.e. 5.4% of total contributions.

Since its creation, the Global Fund has turned around a situation that appeared hopeless and in the process, saved 27 million lives. Over the years, it has helped millions regain their dignity and revitalized entire economies.

"The Global Fund is one of the best and kindest things people have ever done for one another. It is a fantastic vehicle for scaling up the treatments and preventive tools we have today – to make sure they reach the people who need them."

Bill Gates at the Opening Ceremony of the 16th International AIDS Conference

The Global Fund operates on two key principles:

- **Country ownership**, meaning that countries affected by the pandemics determine what their priorities are.
- **Performance-based funding**: specific time-bound results have to be achieved in order to receive continued funding. Program performance is monitored locally.

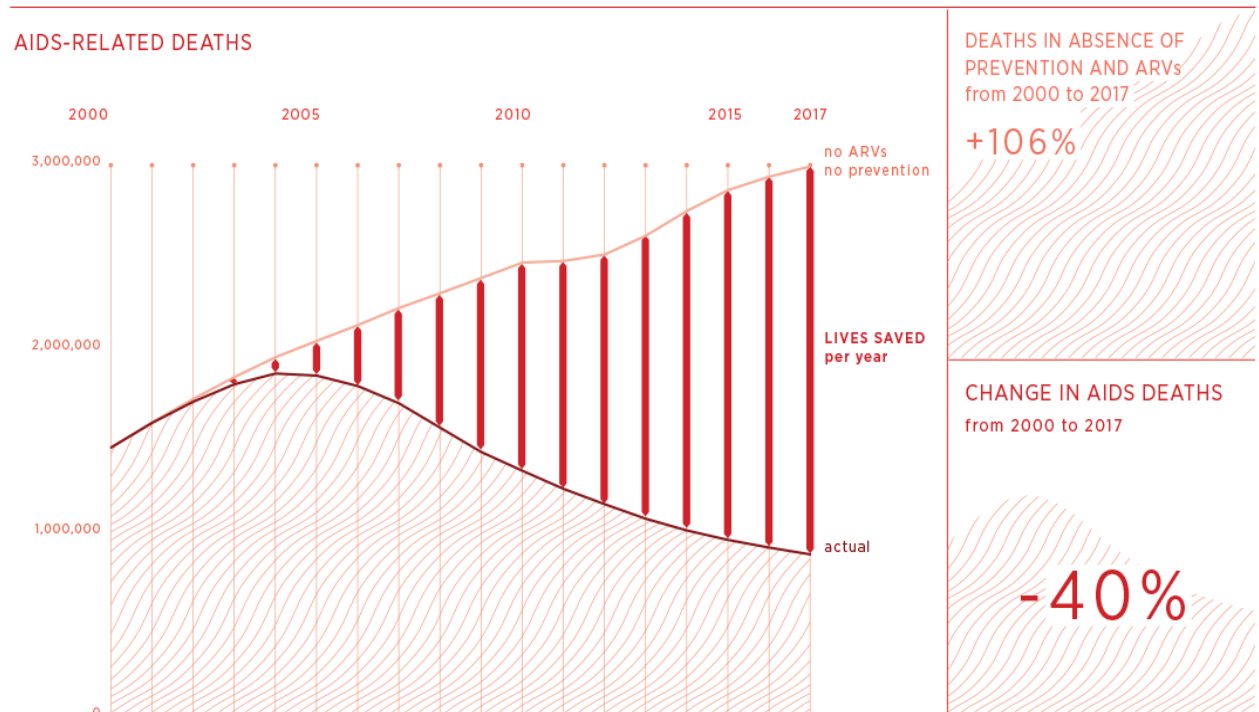
HIV-AIDS

Barely more than a decade ago, AIDS was responsible for nearly two million deaths per year. Although AIDS is not curable, AIDS can be treated with anti-retrovirals (ARVs), and thanks in large part to the Global Fund, AIDS-related deaths are now down to under 1 million per year². Today, with access to treatment, an HIV-positive person can expect to have the same lifespan as someone who is HIV-negative. Furthermore, ARV treatment reduces the chance that an HIV-positive person will pass the

¹ For an interesting analysis of causes of death by age group, refer to <https://ourworldindata.org/causes-of-death>

² <http://www.unaids.org/en/resources/fact-sheet>

virus to someone else by 97 percent, which explains the drop in new infections since the inception of the Global Fund by over one third.



Above graphic taken from www.theglobalfund.org/en/hivaids/

In order to reduce new infections and further reduce mortality from AIDS, the Global Fund operates in very diverse ways:

-it combats the stigma and discrimination that often discourage people from even seeking a diagnosis for this life-threatening treatment.

-It attempts to stop the transmission from mothers to newborns (it treated 700,000 mothers who gave birth in 2017). Worldwide, 80% of HIV-positive mothers now receive treatment to stop the virus from infecting their babies³.

-It focuses with specific segments of the population who are at special risk: girls and women aged 15-24 in sub-Saharan Africa represent 75 percent of new HIV infections among young people and are encouraged to stay in school where they are safer; similarly, it focuses efforts on men who have sex with men, sex workers and injectable drug users

-It promotes promising new interventions like adult male circumcision, which prevents 60 out of every 100 HIV infections

³ <https://www.who.int/news-room/fact-sheets/detail/hiv-aids>

Malaria

No other disease in history has had as profound an effect on human development as malaria. Hundreds of millions of people have died from this mosquito-borne disease through the centuries. Recent data indicates that at least 435,000 people die annually from malaria, 90% of them in Africa⁴. This disease affects mostly the poor, especially children (who account for 70% of all deaths⁵) and pregnant women who have a weaker immune system. Yet it is preventable and, unlike AIDS, curable. Moreover, both bed nets and malaria drugs are inexpensive.

Until recently, a vicious cycle of disease and poverty was gripping malaria endemic countries. Africa had up to one billion clinical cases of malaria annually, resulting in huge amounts of lost income and missed school. According to the World Health Organization, US\$12 billion was lost in productivity each year in Africa due to malaria, or 1.3% of the continent's GDP. In malaria-endemic countries the disease could account for up to 40% of public health expenditures.

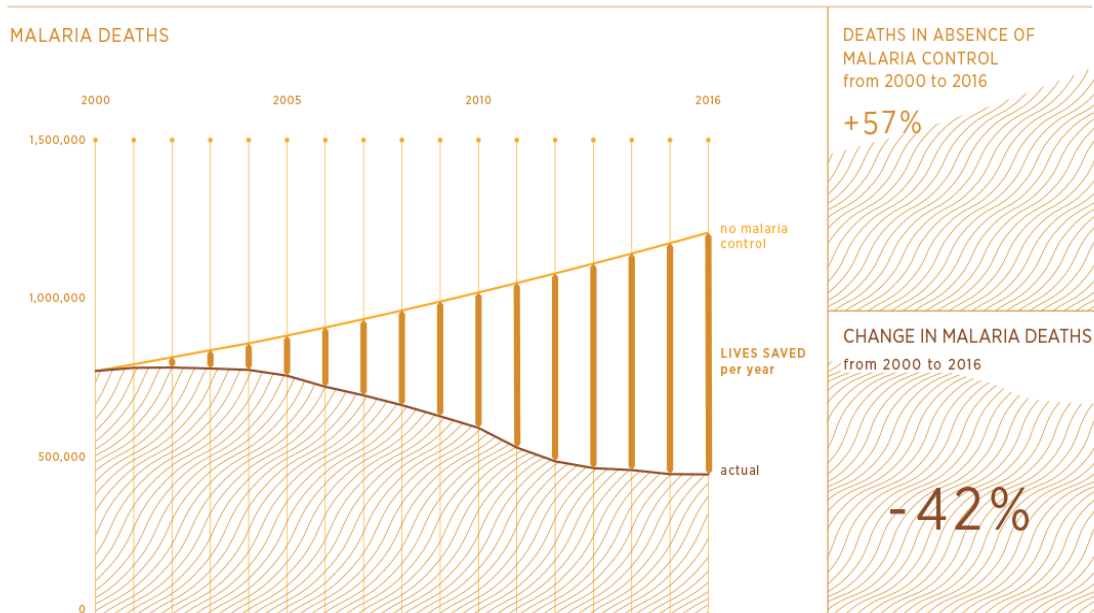
In no small part due to the Global Fund, the situation was turned around, as shown on the graph below: mortality was nearly halved in barely more than a decade. The Global Fund, which is the source of 60 percent of all international financing for malaria, was able to contribute more than US\$10.5 billion in malaria control programs from 2002-2017, thus bringing the world closer to eliminating malaria in at least 35 by 2030 as called for by the Sustainable Development Goals.

Efforts need however to be intensified. First, 47% of those at risk of malaria still do not sleep under a bednet⁶, which shows that a lot of work remains to be done. Furthermore, there are important trends which are building up against the elimination of malaria: climate change which is expanding the potential geographical coverage of the disease, the emergence of drug resistant strains in Asia and the presence of insecticide-resistant mosquitoes in Africa. Accelerating fight against malaria will allow us to get ahead of these trends.

⁴ <https://www.who.int/malaria/media/world-malaria-report-2018/en/>

⁵ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5879044/>

⁶ Ibid.



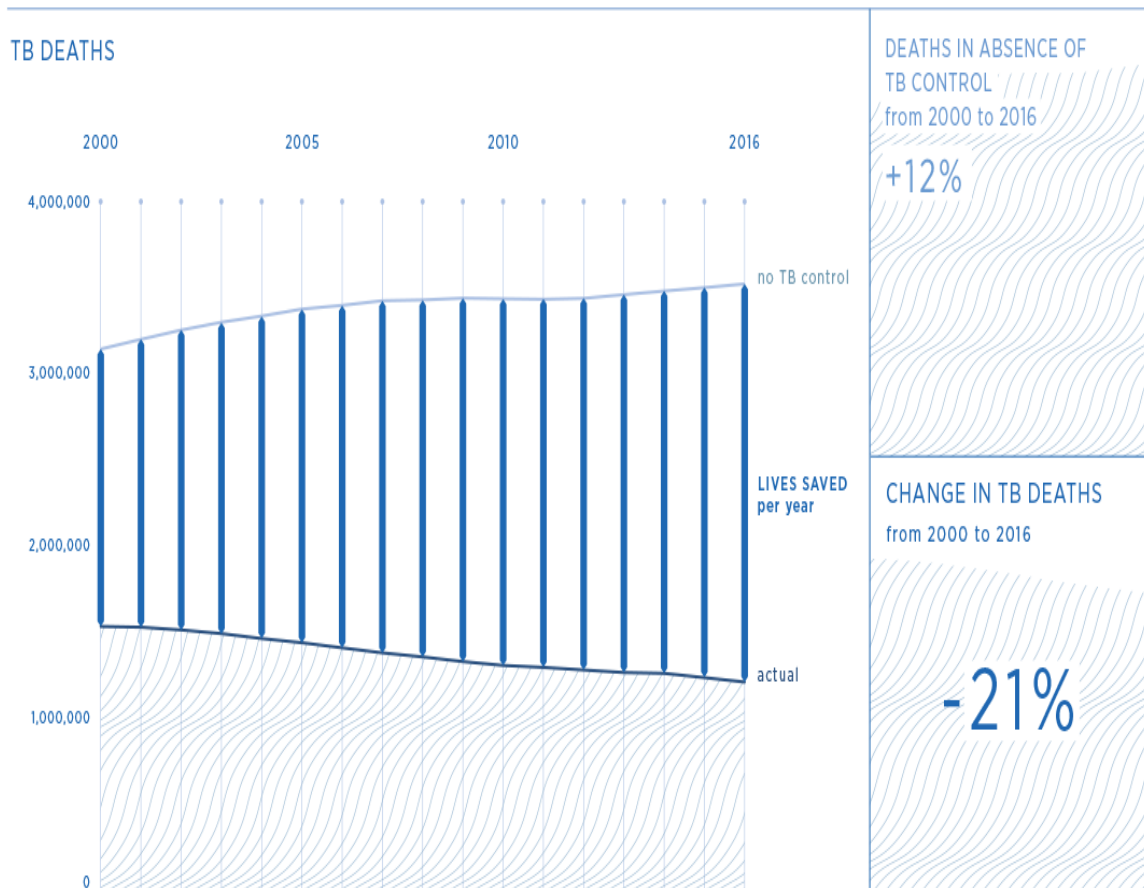
Above graphic taken from www.theglobalfund.org/en/malaria

Tuberculosis

Tuberculosis transmission occurs through droplets containing *Mycobacterium tuberculosis*, which are expelled by pulmonary TB patients when coughing and sneezing, and remain suspended in the air. Inhalation of these droplets may lead to infection. After close contact with an infectious patient, 30–50% of exposed susceptible contacts acquire latent TB infection. More than one quarter of the world population is believed to carry a latent TB infection.

After this first infection, active TB may occur immediately. However, for the majority of cases, the initial infection remains clinically silent and microbiologically latent. Approximately 10% of the infected individuals will progress to active TB during their lives, 5% in the first two years, at which point they become a source of infection for others. These cases disproportionately affect populations in the developing world—where over 90 percent of TB cases occur. TB is an airborne disease—so TB anywhere is TB everywhere.

TB is a curable disease, and the drugs involved in the cure are off-patent and inexpensive. Yet, as the graph below shows, progress in tackling TB has been slow. This is because there are three factors that complicate the fight against, which the Global Fund has been at the forefront to address.



Above graphic taken from <https://www.theglobalfund.org/en/tuberculosis/>

The first complicating factor is the existence of drug-resistant TB. Standard TB treatment is inexpensive but it can be up to six-months long, during which there can be unpleasant side effects. This leads patients to abandon their treatment and leads to drug resistance. The drug resistant strain is passed on to others and there are now over half a million cases of drug resistant TB which are up 1000 times more expensive to treat and therefore increase mortality statistics.

The second complicating factor is TB-HIV coinfection. While the risk of developing TB among those latently infected with tuberculosis is about 10% during their lifetime, among HIV positive patients latently infected with tuberculosis, this risk is more than 30 times higher⁷, in the order of the order of 10% annually. Thus, the spread of the HIV infection has contributed to the expansion of TB, which is the leading cause of mortality in HIV patients. 300,000 deaths annually are attributed to this co-infection.

⁷ http://www.stoptb.org/assets/documents/global/plan/TB_GlobalPlanToStopTB2011-2015.pdf

The third and more encompassing factor is the challenge of diagnosing TB. In 2017, 10 million people worldwide fell ill with TB. Thirty-six percent of them were never diagnosed or treated. If people with active TB are not diagnosed, they keep infecting others, and they are likely to die. Sputum microscopy is the technology that is used most frequently to detect TB. This century-old microscopy-based diagnosis usually takes two weeks, which delays treatment and leads to continued TB transmission, which fuels the epidemic. Moreover, the poor quality of diagnostics costs patients and their families valuable time and money, and outright discourages them from seeking the diagnosis in the first place, until it becomes too late.

Sputum microscopy also fails to diagnose many cases of TB, such as:

- TB in HIV-positive individuals
- TB in children (who often do not know how to produce sputum, and whose sputum, in most cases has too little bacilli content)
- Extra-pulmonary TB for which sputum does not contain the TB bacilli

Perhaps more importantly, the old microscopy diagnoses are clinically imprecise in one critical area: they fail to diagnose multi-drug resistant TB, which means that the TB patient who is the most costly to the health system will receive an ineffective treatment and will continue to spread multi-drug resistant TB around him or her.

The Global Fund, which provides 65% of all international financing for TB, has been proactive in supporting the large-scale deployment of GeneXpert Technology which allows for a real-time molecular diagnosis which works in children as well as HIV-positive individuals and identifies multi-drug resistant strains.

Seeking Solutions Beyond the Global Fund – The critical role of R&D

The Global Fund has produced advances in the fight against the three pandemics that exceed most predictions. Yet, to end the pandemics, more research and development will be required. Nowhere is it as clear as in the case of tuberculosis.

The Need for New Drugs

The length of TB treatment, for instance, continues to impose tremendous demands on local healthcare workers, health systems, and on the patients themselves. As mentioned earlier, many patients also feel side effects of the drugs, so as soon as they feel better the temptation to cease treatment is strong, which breeds drug-resistant strains. A new generation of TB drugs is urgently needed that will shorten the duration of treatment, making it easier for patients to complete their course and recover fully.

The Need for a new Vaccine

Today's TB vaccine, the Bacille Calmette-Guérin (BCG) vaccine, which is more than 85 years old, provides some protection against severe forms of TB in children, but is unreliable against pulmonary TB, which accounts for most of the worldwide disease burden and it is widely considered to be ineffective after teen years. Given the very slow progress in curbing mortality due to TB, vaccines must be part of the strategy to control TB, just like they were used successfully to control smallpox, polio and measles. TB vaccines will not be developed and ready for roll-out in the next ten years. But the critical scientific investment must start now if we want to be successful one day.

For information on Canada's Contribution on R&D for neglected diseases see

<http://www.globalpovertysolutions.ca/docs/GPS%20Neglected%20Diseases%20R&D%20Report%20FINAL%20English.pdf> and

<http://www.globalpovertysolutions.ca/docs/GPS%20Neglected%20Diseases%20R&D%20Policy%20Brief%20EN.pdf>

To hear the perspective of TB Patient https://drive.google.com/file/d/1zh_WjH-HL9KCJX5S0osBUaU3gP4E9z6/view

Further reading: <https://www.wsj.com/articles/bill-gates-the-best-investment-ive-ever-made-11547683309>

Self-Directed Learning Questions

What are key characteristics of AIDS, TB and Malaria?

What is the Global Fund?

How successful has it been at saving lives?

What other types of intervention are needed?
