



An Epidemiological Profile of HIV/AIDS, Tuberculosis and Malaria in Sub-Saharan Africa

Since its establishment in 2002, investments by the Global Fund to Fight AIDS, TB and Malaria have contributed to saving an estimated 22 million lives worldwide. Nowhere has the Global Fund made more of an impact than in sub-Saharan Africa, which has the world's highest burdens of the disease epidemics. Despite some \$29 billion invested since 2002, the epidemics continue to take an unacceptably high toll on populations: both in terms of their health and wellbeing and the attendant impact on economic development.

Purpose

The Africa Constituencies of the Global Fund Board commissioned African Population and Health Research Center to conduct an analysis of epidemiological trends in disease burden across the sub-Saharan African region's 47 countries, collating the most timely data from a variety of sources to guide and target future investments, in two contexts: 1) trends in disease burden over the past decade and 2) levels of investment, their impacts and estimates of unmet need in the response to each of the epidemics.

This integrated analysis aims to assess the progression of disease as well as the concomitant investments and impact of those investments in fighting the three epidemics.

Putting The Global Fund's Impact Into Context: How Has Sub-Saharan Africa Changed Since The Global Fund Was Created?

Rapid growth and urbanization have characterized population trends in sub-Saharan Africa over the reporting period 2000-2014. World Bank estimates show steady population growth from 664 million to 973 million over the reporting period, representing an average annual population increase of 21 million people, for a total of 309 million over the period. Rapid urbanization has also accompanied that population growth, with an estimated 362 million people living in urban and peri-urban areas by end-2014. This represents a 77% increase in the size of urban populations since 2000. Based on estimates from UN-Habitat, two in three of those urban dwellers reside in informal settlements, or slums. In general, life expectancy has improved modestly. GDP per capita and health expenditure per capita have increased more than three-fold. A remarkable decline in mortality and a modest reduction in fertility were also observed.

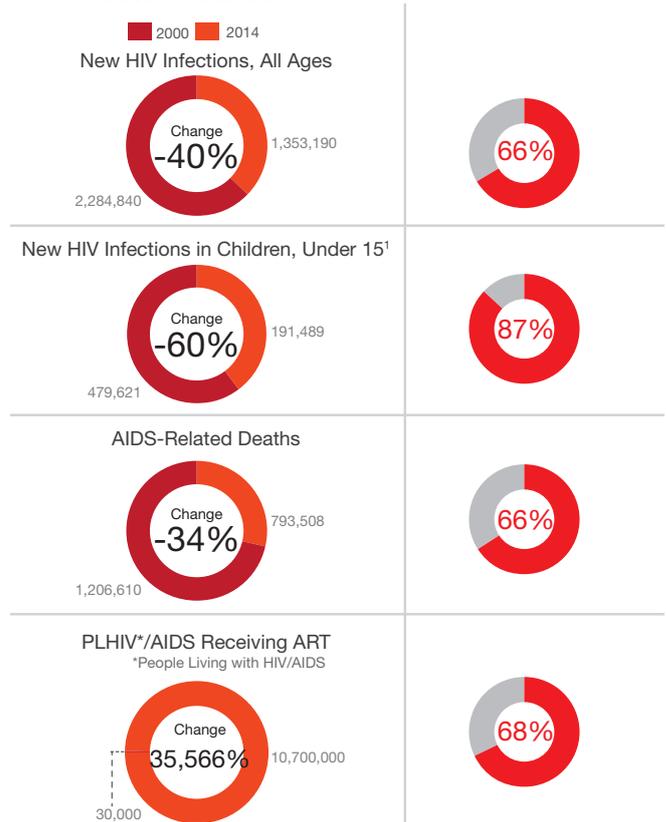
HIV/AIDS

In sub-Saharan Africa, a 66% reduction in HIV incidence rate was observed between 2000 and 2014, and there was a commensurate (60%) reduction in the number of new HIV infections in children (under 15 years). The number of AIDS-related deaths also declined: a sign of greater and more consistent access to anti-retroviral treatment.

Key and vulnerable populations are now the main drivers of the global HIV epidemic. For the Global Fund, these key populations have been identified as commercial sex workers, men who have sex with men and people who inject drugs; young women and girls are also highly vulnerable and represent the fastest-growing group of new infections. Currently more than 40% of new infections among women occur among those aged 15-24. Though new infections are declining overall, adolescents and young women have disproportionately higher rates of new infections as compared to other population groups.

While the number of new infections is steadily declining, the total number of people living with HIV has increased; this is attributable in large part to the wider coverage rates of anti-retroviral treatment that is prolonging lives globally.

Changes in HIV/AIDS Indicators in SSA Between 2000 versus 2014



¹ Almost entirely the result of mother-to-child transmission, which is nearly always preventable with proper treatment, care and prevention.

Key points – HIV/AIDS

- Young women and girls have been, and remain, the most vulnerable to HIV infection. Sex disparity in new HIV infections and AIDS-related deaths persisted over the period.
- A significant increase in ART coverage would lead to longer, healthier lives for PLHIV. However, long-term use of anti-retroviral drugs carries with it considerable side effects, putting users at higher risk of chronic diseases due to the combined effects of aging, HIV and ART drug toxicity.
- There has been considerable decline in new HIV infections and AIDS-related deaths over the last decade as a result of substantial and sustained investment in HIV prevention and treatment.
- **Domestic resources account for less than half of the investment in the HIV response in SSA. Without a significant increase in domestic investment, progress may not be sustained.**

TUBERCULOSIS

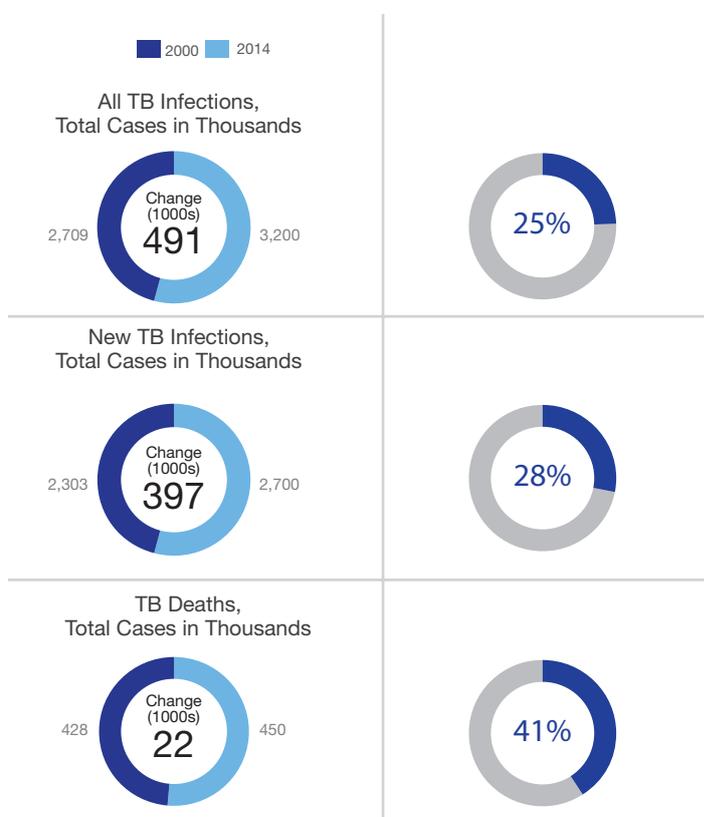
The World Health Organization has classified eight countries in sub-Saharan Africa as high risk for tuberculosis. Regionally, there are more than 2.5 million cases recorded annually, and the decline over the past 14 years has been painfully slow.

Even though it accounts for one in four of the globally reported TB cases every year, WHO African region contributes 41% of global TB deaths and 80% of TB/HIV deaths. There is very high incidence of TB-HIV co-infection because of the increased risk of opportunistic infection among those whose immune systems are compromised by HIV. WHO calculates that the risk of contracting TB is 27 times higher for people living with HIV than those who are not. Complications from TB are responsible for one in three AIDS-related deaths.

TB-related deaths among people with AIDS exceeded mortality attributed solely to TB between 2002 and 2007; around the same time that AIDS-related deaths were at their peak. From 2008 onwards, deaths attributed to TB-HIV co-infection began to decline at a faster pace than TB deaths.

Estimated TB Burden in SSA, 2000 versus 2014

Africa's Share Of The Global Burden, 2014



Key points – TB

- Even though new TB infections, total infections and death rates are slowly declining, the actual numbers of reported incident and prevalent TB cases and TB deaths have increased. This may be a reflection of the improved rates of case detection, and demonstrates the need to maintain or even increase investment in TB diagnostics.
- While case detection rates have improved, the need for a comprehensive assessment of the true TB burden remains. Approximately half of the estimated TB cases in sub-Saharan Africa remain undetected. The challenges, however, are not only with detection; among those cases that are detected, one in five people who begin treatment fail to complete it successfully.
- Despite accounting for only 25% of globally recorded TB cases, SSA accounts for far more than its share of TB deaths (41%), TB-HIV co-infections (73%), and TB-HIV deaths (80%). One reason for this is the comparatively low coverage and quality of TB prevention, treatment and care programs in Africa.

- While domestic funding represents roughly one-third of the annual \$1 billion budgeted for TB programs, another third of that budget (37%) remains unfunded. There is an urgent need to close this gap.
- More rapid advancements in TB treatment, care and prevention are needed to help stem the tide of drug-resistant TB.

MALARIA

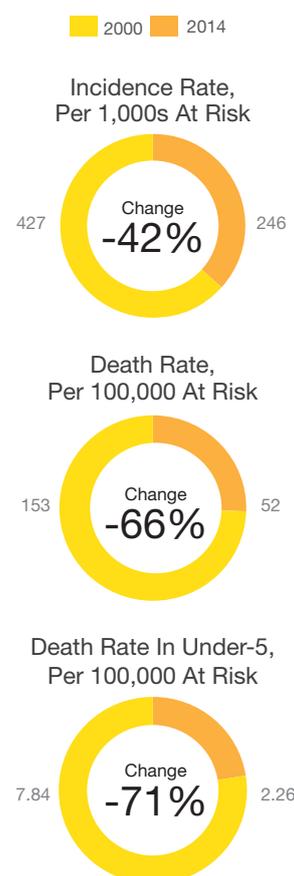
Malaria remains a major public health concern across the region. Nearly nine in ten of the malaria cases diagnosed every year are among people in Africa. Nine in ten of all malaria-related deaths are in Africa and 95% of every death among a child under age five from malaria occurs in the region. The infographic provides details on the estimated² burden for malaria.

Household coverage by insecticide-treated nets (ITNs) increased from under 2% in 2000 to about 55% by 2014. An estimated 154 million ITNs were delivered in 2014 and 2015, meeting about half of the estimated need. About 53% of the 834 million people in sub-Saharan Africa at risk of malaria sleep under an ITN or live in a household that has received indoor residual spraying (IRS) to kill the mosquitoes that transmit the parasite. The proportion of pregnant women receiving intermittent preventive treatment in pregnancy (IPTp) reached 52% in 2014.

Between 2005 and 2014, levels of malaria diagnostic testing of suspected cases increased from 36% to 65%. The proportion of children under five with malaria who received artemisinin combination therapy (ACT) increased from less than 1% to 16%. Overall, malaria interventions (2001-2014) contributed to a 76% reduction in parasite prevalence and averted some 663 million (70%) of potential malaria cases (69%, 21%, and 10% due to ITNs, ACT and IRS, respectively). During the same period, malaria interventions resulted in \$900 million in savings from averted case management costs (68%, 17%, and 15% due to ITNs, ACT and IRS, respectively).

It should be noted that there was no observable change in the number of reported deaths from malaria over the time period; this could be attributed in some part to improvements in case detection and reporting; as more malaria cases were identified and treated, the number of reported cases increased over time.

Burden of Malaria in SSA, 2002 versus 2014



Key points – Malaria

- Between 2000 and 2014, estimated annual deaths from malaria have decreased by 48% (58% among children under age 5). However, during the same period, the annual number of malaria cases decreased by only 12%. Though an increase in the size of the exposed population may have contributed to the slow decline in actual numbers, it also demonstrates the need for greater investment in **malaria elimination** programs in Africa.
- While efforts to date have resulted in a significant increase in coverage by ITN, about 45% of the eligible population in malaria endemic areas—about 146 million people—remains without a net.
- **Funding allocation is well-aligned with the disease burden in the region. However, the annual average growth rate of domestic spending is outpaced by a factor of five in terms of international support to malaria. This means that the sustainability of existing malaria programs – and their expansion – is vulnerable to foreign aid flows.**

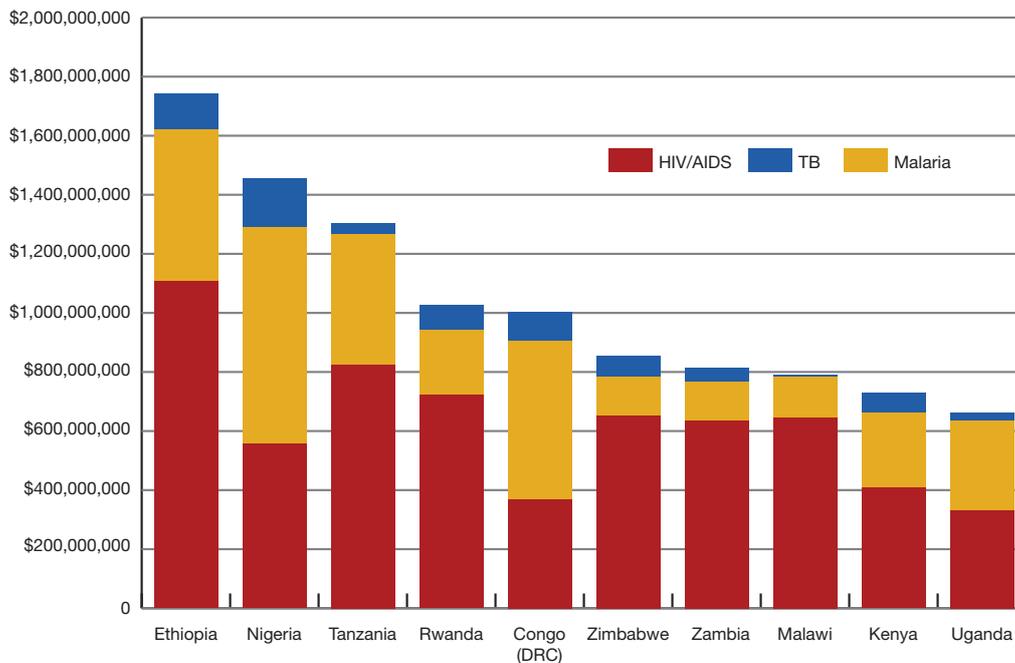
² Reported burden is can be lower than estimated burden because of weaknesses in data such as missing data, under-reporting or mis-reporting.

Global Fund Investments in HIV/AIDS, TB, and Malaria

Since 2002, about 55% of the funding invested by the Global Fund in sub-Saharan Africa was for HIV/AIDS programs, aligning more or less to the prescribed disease split when the Fund was established of 50% for HIV, 32% for malaria and 18% for TB. However, every increase in percentage point for HIV or malaria (from 2002-2014 at 55% and 34% respectively), shifts resources away from TB programs. More than half, or about 55%, of Global Fund grants to SSA were for HIV/AIDS programs. About a third (34%) was invested in malaria. Only 8% was allocated to TB and the remaining 3% was invested in other programming.

Sub-Saharan Africa has received a significant proportion of Global Fund investment since its inception, absorbing 63% of the nearly \$29 billion in grants disbursed as of 2015. The figure shows disbursements by disease area for the ten African countries that have received the largest cumulative funding envelopes.

Cumulative Global Fund Disbursement, 2002-2015:
Top 10 Implementing Countries



A Call to Action

- Lives are being saved, and lengthened, in large part because of Global Fund investments.**
 - There have been significant declines in the burden of the three epidemics between 2000 and 2014:
 - New HIV infections down by 38%
 - TB deaths down by 45%
 - Malaria cases down by 37%
- In the near term, **funding from development partners must continue** in order to maintain current levels of response for each of the three diseases.
 - Increased investment for rapid scale-up** is needed for the region to accelerate progress towards 2030 global targets for each of the disease epidemics.
- Increased domestic funding is crucial** to address unmet needs, improve country ownership, and ensure sustainability of results in the long term.

Data sources: World Bank, WHO, UNAIDS, the US President's Emergency Plan for AIDS Relief (PEPFAR), the US President's Malaria Initiative (PMI), STOP TB Partnership, Rollback Malaria and the Global Fund to Fight AIDS, Tuberculosis and Malaria.

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For more information, please see www.aphrc.org/projects/bringing-african-voices-together.



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