



Investment Case for the Global Fund's 2017-2019 Replenishment

The Right Side of the Tipping Point For AIDS, Tuberculosis and Malaria

Presented on 17 December 2015 at the Global Fund's Fifth Replenishment Preparatory Meeting in Tokyo, Japan.

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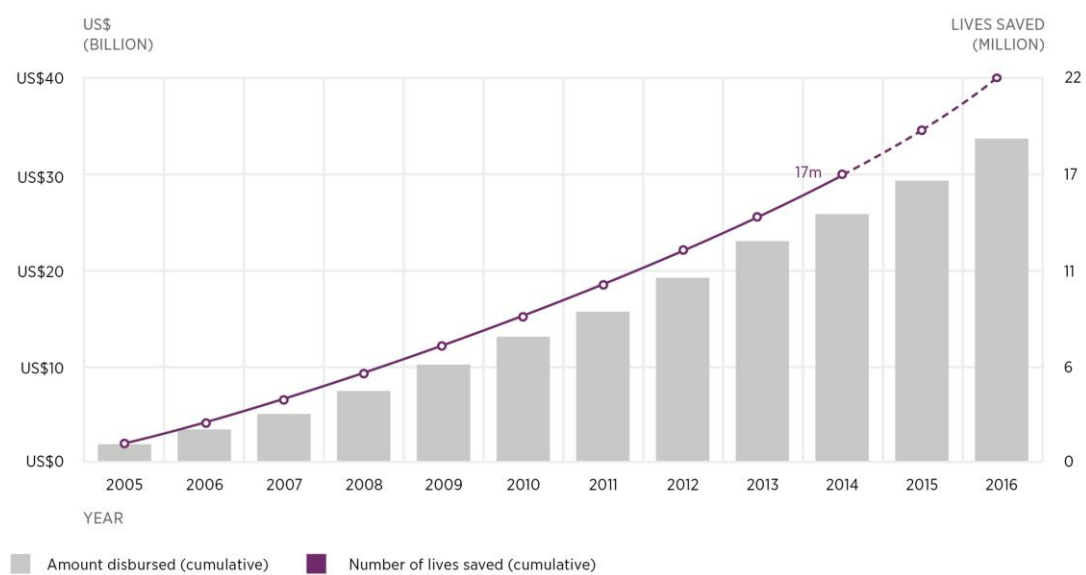
Executive Summary

The Global Fund partnership, with an innovative 21st-century approach, joins countries that are leading a transformational change by accelerating the end of AIDS, tuberculosis and malaria as epidemics while building resilient and sustainable systems for health. Together, we are challenging barriers to human rights, common dignity and basic equity. As a strong partnership of governments, civil society, technical experts, the private sector and people affected by the diseases, the Global Fund is a mechanism for global solidarity that supports countries to do great things. With financing, implementation and community engagement, all partners contribute to enabling local experts to save the lives of people who would otherwise die and treat people who would otherwise suffer. Working together, we are allowing communities to thrive, and creating opportunity and prosperity on a scale that few thought possible 15 years ago.

Programs supported by the Global Fund have saved **17 million lives** since 2002, when the first disbursements were made. By leveraging advances in science and applying innovative solutions, the partnership is on track to reach **22 million lives** saved by the end of 2016, the eve of a new Replenishment period.

Lives Saved

NUMBER OF LIVES SAVED THROUGH GLOBAL FUND-SUPPORTED PROGRAMS



The Opportunity

In the three-year period beginning 2017, the global community will have an opportunity to accelerate change and go beyond the significant progress already underway. The Millennium Development Goal target of reversing the spread of HIV, TB and malaria has been met and exceeded in most countries where the Global Fund invests. Deaths from the three diseases are declining, as are new infections, bolstering strong evidence that the partnership model is the most effective way to deliver global health. Innovation engenders the ability to build upon recent advances, many achieved during the current Replenishment cycle of 2014-2016, and enable countries to achieve the target identified in the Sustainable Development Goals: ending the epidemics by 2030.

With all of the tremendous progress of recent years, we are on **the right side of the tipping point** to control and ultimately eliminate HIV, TB and malaria. However, we need renewed investments and effective implementation to use those investments more effectively. Without strong investment, that trajectory could fall off, and there could be an alarming resurgence of the diseases, with potentially huge economic and social costs. Maintaining current levels of investment will not allow us to succeed.

Global plans developed to end the AIDS, TB and malaria epidemics by technical partners – WHO, UNAIDS, the Stop TB Partnership and the Roll Back Malaria Partnership – demonstrate that striking gains that have already put us on a positive trajectory can now be “fast-tracked” to significantly reduce new infections and deaths. By providing resources aligned with highest-impact priorities identified in partner plans, we can reach historically low levels of HIV, TB and malaria.

Strategic plans by partners to end the epidemics by 2030 have developed targets that include overall assessments of the costs required to reach them, defined here as the funding needs. Working together, the combined domestic and external funding need for HIV, TB and malaria is estimated at **US\$97 billion** for the three-year period beginning in 2017, in countries where the Global Fund invests.

Leverage and Innovation

The Global Fund plays a catalytic role in spurring greater investment, which is needed to face many steep but achievable challenges in HIV, TB and malaria. Domestic financing is significantly increasing and already accounts for more than half of funding for HIV, more than three-quarters for TB and around a quarter for malaria. The proportion of investments in health that come from domestic financing is growing each year, as explained, below. But external financing remains essential if the world is to seize the opportunity to end the epidemics. The Global Fund’s multilateral approach not only grows the resource pool, it allows innovation and value for money. By pooling procurement, the Global Fund saved US\$500 million over two years. By starting an e-Marketplace, we are using innovation together with partners to leapfrog obstacles and improve the effective delivery of health products in the most reliable, cost-effective and transparent way. Working across a portfolio provides important opportunities to identify and share quality improvements for a higher return on investment. Collectively, we are changing the paradigm of how countries think about and invest in global health.

\$13 Billion for Replenishment

The Global Fund seeks to mobilize **US\$13 billion** for the Fifth Replenishment. Analysis shows that this level of investment, combined with significant increases in domestic financing, with other external funding remaining steady, and with advances in implementation, would reach 80 percent of the total need projected by partners. To enable implementing countries to deliver a transformative change and

achieve the trajectory required to achieve the 2030 global plan targets, this level of investment can galvanize the collective effort of all partners to maximize and optimize implementation with the highest-impact interventions. Every step closer to – or above and beyond – the overall US\$97 billion funding need can accelerate progress even faster. We can do more with more.

Overall, a **US\$13 billion** contribution for the Fifth Replenishment would:

- Save up to **8 million lives** through programs supported by the Global Fund, leading to **30-32 million** lives saved cumulatively by 2020;
- Avert up to **300 million** new infections across the three diseases;
- Allow the Global Fund to make substantial contributions towards building resilient and sustainable systems for health;
- Support partners in domestic investment of **US\$41 billion** toward the three diseases;
- Support strengthened responses for women and girls, key populations and human rights;
- Lead to broad economic gains of up to **US\$290 billion** over the coming years and decades, based on partner estimates.

Projected economic gains of US\$290 billion are based on estimates by partners on the return on investment for implementing each of the global plans. These estimates assess the economic value of better health and a more productive society by trying to capture productivity and consumption gains, including through household savings, and calculating that each person who goes on lifesaving treatment is a potential contributor to the economic health of a community. The totals – broad estimates, not scientific projections – come from applying collective estimates from each of the partner plans. Overall, they estimate that every dollar invested brings a high return: 17:1 for HIV, 27:1 for TB, and 28 to 40:1 for malaria.

Our success in the Fifth Replenishment will be built upon the foundation of the many contributions that have been made so far. Displaying extraordinary leadership in global health, the governments of the United States, France, the United Kingdom, Germany, Japan, the European Commission, Canada, Italy, Sweden, the Netherlands, Norway, Australia, and many others have contributed generously, and not only with finances. The Bill & Melinda Gates Foundation and Product (RED) have also provided highly significant contributions, and innovative approaches to expanding them.

For Every \$100 Million

Every contribution matters. Every partner able to contribute funding must be encouraged to take part in the progress underway and share in the excitement of collective action. Some can achieve greater impact by leveraging matching funds. Others can spur increased commitment, with knock-on benefits in the social and economic health of affected communities. Every contribution can make a difference, and we have performed calculations to determine what every contribution of US\$100 million can achieve in global health and related sectors.

Every US\$100 million contribution to the Global Fund would:

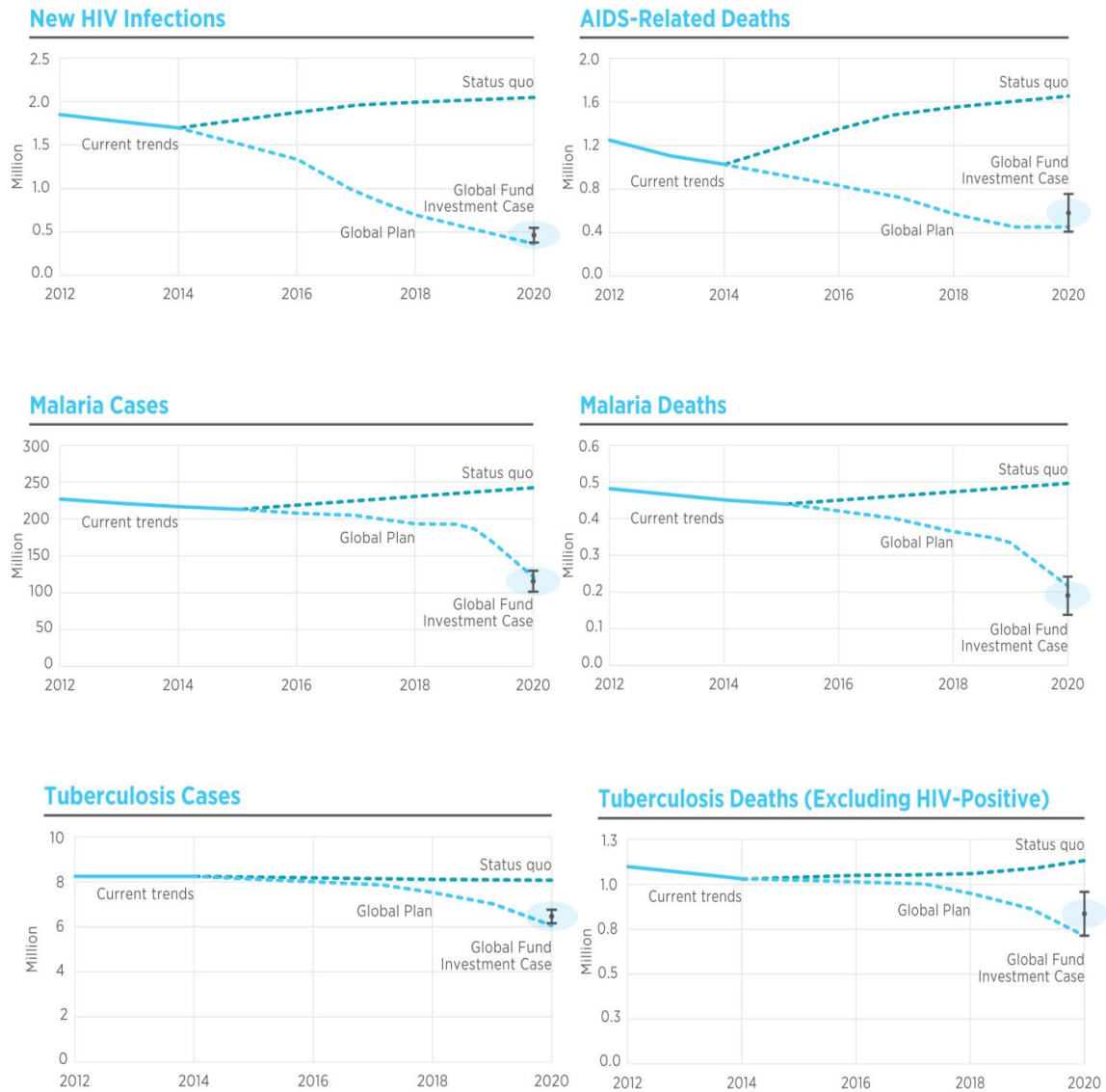
- Save up to **60,000** lives through programs supported by the Global Fund;
- Avert up to **2.3 million** new infections across the three diseases;
- Support partners in domestic investment of **US\$300 million** toward the three diseases;
- Spur **US\$2.2 billion** in long-term economic gains.

FOR EVERY **US\$100 MILLION** TO THE GLOBAL FUND



New Infections/Cases, and Deaths, by Disease

Each graph below shows current trends, projections for acceleration in global plans, and projections if current levels of investment are maintained. The levels identified as the Global Fund Investment Case, drawn here as a circle with a range for outcomes, indicate what can be achieved by 2020 through a successful Replenishment and other key factors.



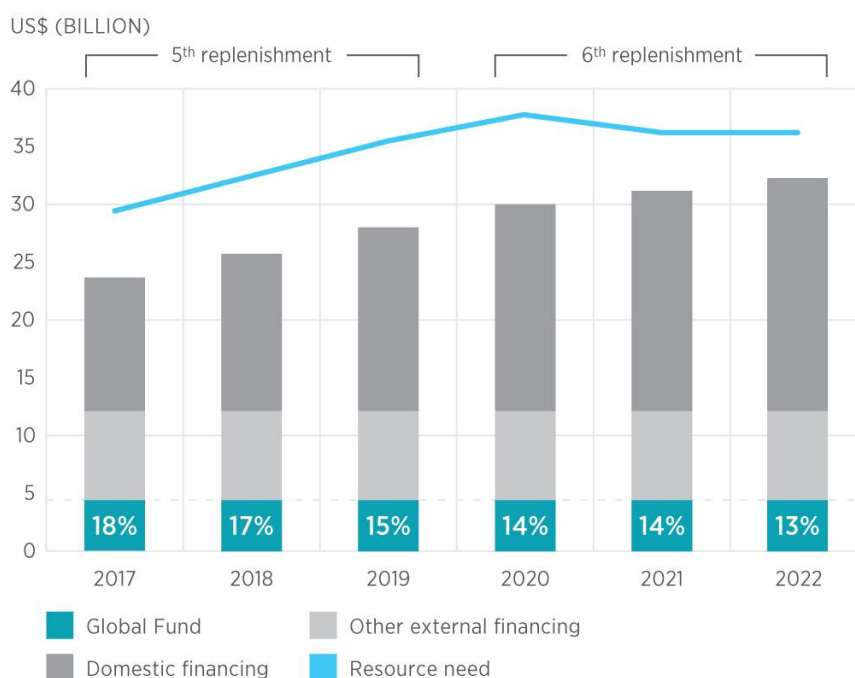
Transition and Domestic Financing

Recognizing that all countries live along a development continuum, from challenging operating environments to self-sufficient states with more equal opportunity for their citizens, we are learning to better support countries as they transition from one stage to the next. Transitions are not only the final stage of moving beyond external financing; they happen all along the way. An increasing number of countries are already preparing to transition from low-income to middle-income status.

Effectively stimulating domestic investments in health is an essential component of moving toward transition and stability. During the Global Fund’s 2014-2016 Replenishment cycle, aggressive assumptions were made about increased domestic finance –projecting an average annual rate of 11 percent. Countries have stepped up and made those commitments. Through a collective effort by the partnership, domestic financing commitments are up by **US\$5.9 billion**, spurred in part by co-financing requirements by the Global Fund. With increasing amounts in domestic finance for the three-year period covered by the next Replenishment, domestic investment in programs related to HIV, TB and malaria is projected to reach US\$41 billion, or more than three times as much investment as comes through the Global Fund.

Overall, the projection is that financing provided by the Global Fund has put the global community on **the right side of the tipping point**, and that the Global Fund’s percentage of the total resources allocated to the three diseases will decline beginning in the Fifth Replenishment. The figure below demonstrates that overall resources *invested* in programs related to HIV, TB and malaria will continue to grow, even as the total resource *needs* are expected to peak in 2020, and then begin to decline.

Overall Projected Investments in Programs for HIV, Tuberculosis and Malaria, 2017-2022



Building Resilient and Sustainable Systems for Health

Ending HIV, TB and malaria as epidemics can only be achieved with stronger systems for health. Investments in the treatment and prevention of HIV, TB, and malaria improve countries' overall health systems while promoting community responses in national decision-making. This mutually reinforcing relationship between funding disease control and overall system improvement typifies Global Fund investments. Nearly **40 percent** of Global Fund investments go toward improving systems for health, and the amount committed to cross-cutting issues has doubled in recent years. Investments in HIV, TB, malaria, and strengthening health systems have a powerful multiplier effect, not only on people's overall health status but also on countries as a whole, and are a powerful component of efforts to implement quality care through **universal health coverage** in many countries. It is important, however, to understand that a health system encompasses more than just the clinical setting, but also reaches deep into the community. Community systems provide key prevention and behavioral programs, contribute to treatment and service delivery, and should be empowered to reach even more vulnerable and marginalized people – so no one is left behind.

Investing in Gender Equality, Key Populations and Human Rights

The Global Fund partnership has been an important investor in improving the health of women and girls and serving key populations, and is increasingly investing in human rights programs. The Global Fund was among the earliest and strongest advocates for addressing gender inequality, with 55-60 percent of Global Fund investment benefiting women and girls. Through collective commitment working with multilateral and bilateral programs, the Global Fund continues to strive for more advances to address the fundamental inequality of and discrimination against women and girls, a key driver of HIV infection in many parts of Africa. The marginalized and left behind – the LGBTI community, sex workers, persons who inject drugs, migrants, prisoners and the urban poor – are heavily affected by HIV and tuberculosis. Malaria most threatens children under five and pregnant women.

We have to find innovative solutions to end the epidemics. Investing in programs that increase access to critical HIV prevention and treatment services is not enough; we also have to support programs that seek to change environmental and social factors that put women and girls at increased risk. Blanketing a country with mosquito nets is not enough; we have to take a comprehensive approach toward malaria. Diagnosing and treating TB cases in the same way is not enough; we have to dramatically expand outreach.

In middle-income countries, the Global Fund is refocusing investments from commodities and disease-specific services so that they can increasingly flow to human rights and civil society programs, addressing the needs of key populations. Collectively, the Global Fund is making progress in increasing investment in the programs that reduce human rights barriers to access.

A person-centered approach, recognizing that the fabric of humanity is made of diverse yet interconnected threads, has to guide our collective work. Keeping girls in schools can be tremendously effective in preventing HIV and promoting gender equality. Providing cash incentives, doing interventions for vulnerable young women to attend vocational colleges, stressing programs with a family-centered approach, including boys and men in the response to gender inequality – these are all efforts we support and need to expand. When our collective efforts can help create a critical mass of healthy, educated and financially independent women who make well-informed decisions about their lives, we know we are on the right track.

Conclusion

Funding the Global Fund partnership to achieve the impact and results described in this investment case will be critically important. Through its direct investments and through its ability to support countries to mobilize even greater domestic resources, the Global Fund partnership can catalyze further work so that all HIV, TB and malaria funding is optimally used to achieve transformative impact to end the epidemics. In addition, the Global Fund can leverage further innovation through scientific advances, better implementation, improved data and private sector know-how to unlock improvements in disease prevention, treatment and care. These bold goals cannot be achieved without resilient and sustainable systems for health, and focus on the dignity and rights of every person to create an inclusive human family. The Global Fund's new strategy for 2017 to 2022, "Investing to End Epidemics," will take up this challenge.

I. The Opportunity

In the three-year period beginning 2017, the global community has an opportunity to build on recent progress and accelerate the transformational change in global health that is currently underway. The Millennium Development Goal target of reversing the spread of HIV, TB and malaria has been met and exceeded in most countries where the Global Fund invests. Deaths from the three diseases are declining, as are new infections, bolstering strong evidence that the partnership model is the most effective way to deliver global health. Building on significant advances during the current Replenishment cycle of 2014-2016, further acceleration is needed in order to enable countries to achieve the target identified in the Sustainable Development Goals: ending the epidemics by 2030.

Analysis performed together with partners, based on their global plans, demonstrates that striking gains that put us on a positive trajectory can now be “fast-tracked” to significantly reduce new infections and deaths. By aligning with partner projections in their global plans for 2020, the world can reach historically low levels of HIV and TB and malaria.

With all of the progress in recent years, we are on **the right side of the tipping point** to control and ultimately eliminate HIV, TB and malaria. The results are significant:

- Programs supported by the Global Fund partnership had saved **17 million lives** by the end of 2014, and are on track to reach **22 million lives**-saved by the end of 2016. This will keep the Global Fund on track to achieve the target of **10 million lives** saved from 2012 to 2016, as set out in the Global Fund’s strategy.
- Overall deaths caused by AIDS, TB and malaria have been reduced **by more than one-third** since 2002 in countries where the Global Fund invests.
- The number of people on antiretroviral therapy through Global Fund supported programs has reached **8.1 million**, already surpassing the strategy target for 2016 of 7.3 million. This represents coverage of **40 percent** of all those infected worldwide, a rapid acceleration from just 21 percent in 2010.
- **13.2 million** people have received smear-positive testing and treatment for TB since 2002 through support from the Global Fund, an increase of **60 percent** compared with 2010.
- More than **548 million** mosquito nets were distributed through programs supported by the Global Fund. Of those, 219 million nets were distributed between 2012 and 2014 in sub-Saharan Africa.
- The allocation model, implemented in 2014, is delivering on the Board’s strategic focus by investing resources in countries with the highest disease burden and lowest economic capacity. The current allocation delivers more than **90 percent** of investments to low- and lower-middle-income countries, and more than **95 percent** to high-burden countries.

These remarkable gains in the fight against the three diseases go well beyond what was thought possible even a few years ago and are a testament to the collective determination of global health partners, as people affected by HIV, TB and malaria, civil society, governments and private sector work together, pooling their resources and expertise.

However, without renewed investments and strong efforts to use them more effectively, we can fall off the trajectory, and could face an alarming resurgence of the diseases with potentially huge economic and social costs. Many lives remain at risk. Around 2.5 million people die from the three diseases each year in countries where the Global Fund invests. Vulnerable populations continue to be marginalized and gender inequalities prevail. Adolescent girls are contracting HIV at a frightening rate in southern Africa. TB/HIV co-infection remains a threat. Multidrug-resistant TB is on the rise. Gains made against malaria could be rapidly lost unless prevention and treatment programs are expanded and extended.

We now face a choice between accelerating investments – with the sharp gains that can be achieved against HIV, TB and malaria – and the potentially serious cost of inaction. The Global Fund investment case indicates what is possible with the contribution of a successful Replenishment along with the other key factors needed.

In September 2015, world leaders at the United Nations General Assembly in New York adopted the 2030 Agenda for Sustainable Development. This agenda recognizes that eradicating poverty in all its forms is a prerequisite for sustainable development. The new agenda builds on the Millennium Development Goals but is broader in scope. It demands a more integrated and holistic approach given the strong linkages between goals and a focus on the individual. It also squarely recognizes the importance of human rights, gender equality and the empowerment of women and girls, all cornerstones in the fight against HIV, TB and malaria.

Goal 3 of the Sustainable Development agenda seeks to “*Ensure healthy lives and promote well-being for all at all ages*” and in this context specifically targets ending the epidemics of AIDS, TB and malaria¹ by 2030. World leaders also acknowledged **Universal Health Coverage** as a key element of the Sustainable Development agenda. Dr. Margaret Chan, Director-General of the World Health Organization, recognized it as “the single most powerful concept that public health has to offer.”

Global plans developed to end the AIDS, TB and malaria epidemics by technical partners – WHO, UNAIDS, the Stop TB Partnership and the Roll Back Malaria Partnership - fit within this framework and are aligned with the target identified by Sustainable Development Goal 3, to end the epidemics by 2030.² Each plan recognizes the opportunity presented now, building on what has been achieved and capitalizing on scientific advances, new tools, enhanced data and communications to more effectively invest going forward. They outline bold and ambitious strategies for ending the three epidemics and identify resource needs and interim targets for 2020 and 2025.

The global plans also lay out the consequences of inaction or delayed investment. Maintaining current levels of coverage would allow the epidemics to outrun the response, leading to an increase in infections/cases and deaths. The opportunity to avert millions of deaths and infections would be lost.

The Global Fund has a critical role to play in embracing the new 2030 agenda for sustainable development and supporting efforts to end HIV, TB and malaria as epidemics. Investing in resilient and sustainable systems for health - the core of delivering Universal Health Coverage - is critically important to end the epidemics of AIDS, TB and malaria. The Global Fund’s increasing focus on improving systems – through investments in health workers, laboratory services, drug supply chains, monitoring and information systems, community systems and strengthening and other areas as well as through aligning with national health strategies and disease-specific plans – will strongly reinforce the overall performance of maternal and child health programs, infectious and chronic disease management, and other aspects of a sustainable and resilient national health system. Failing to renew investment would risk a reversal of the gains made so far. The experience of certain countries, which let up in their AIDS, TB, and malaria programs, leading to increasing infection rates and higher costs, shows that these risks are real.

To inform this Replenishment, the Global Fund has worked with its technical partners as well as leading modeling institutions to assess the impact as of 2020 of its expected investments across the three diseases. The results are reflected in the Investment Case analysis in this report.

¹ The terminology “ending the epidemic” is applied to the three diseases in consistency with the language of the Sustainable Development Goal target 3.3 and, for simplicity, is used throughout this document as a synonym for meeting the 2030 goals. Epidemiologically, malaria is an endemic disease with epidemic potential.

² The goal of ending TB – as stated in WHO’s End TB Strategy – is in 2035, with 2020, 2025 and 2030 milestones. The Global Plan to end TB, developed by the Stop TB Partnership, outlines the cost of getting to the 2025 milestone (see section 2).

II. Global Plans for HIV, Tuberculosis and Malaria

New and ambitious global strategies are now in place to end the AIDS, TB and malaria epidemics by 2030³. Technical partners – WHO, UNAIDS, the Stop TB Partnership and the Roll Back Malaria Partnership – have developed these strategies, which include global targets by 2030 to bring the epidemics under control, interim milestones in 2020 and 2025, as well as estimates of the resources required globally to achieve these milestones and targets. Table 1 summarizes the 2020 milestones and 2030/2035 targets.

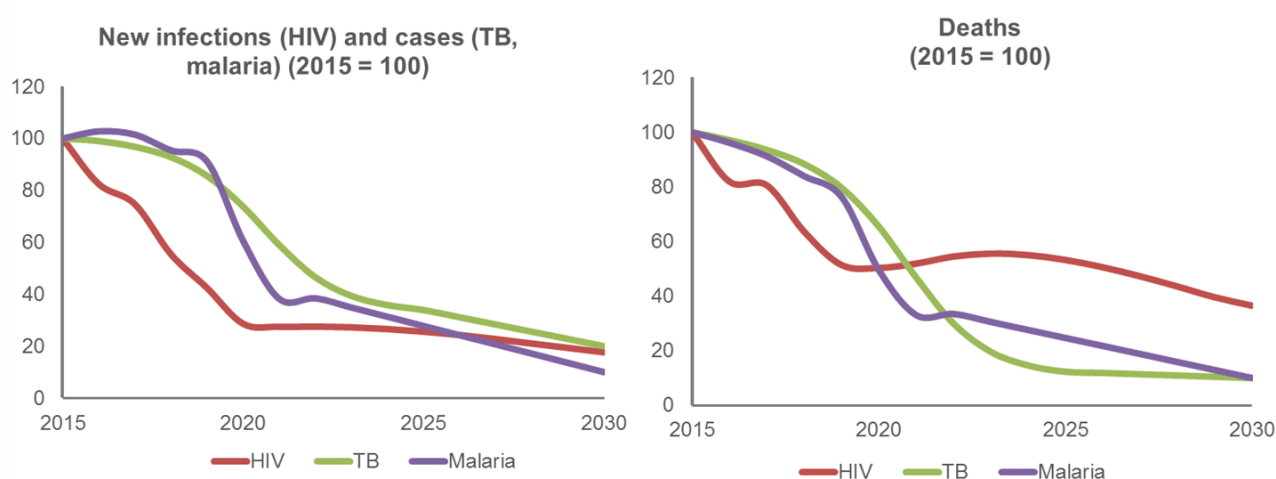
Table 1: Summary of Global Plan Targets

	By 2020 / 2025	By 2030 / 2035
HIV Fast Track / UNAIDS Strategy	By 2020: <ul style="list-style-type: none"> • Fewer than 500,000 new infections and 500,000 AIDS related deaths • 90% of people living with HIV know their status • 90% of those people tested will be on treatment • 90% of those on treatment will be virally suppressed 	By 2030: <ul style="list-style-type: none"> • 90% reduction in new infections and deaths, compared with 2010
TB End TB Strategy/ Global Plan to End TB	By 2020: <ul style="list-style-type: none"> • 20% and 35% decline in TB incidence rate and TB deaths respectively, compared with 2015 By 2025: <ul style="list-style-type: none"> • At least 90% of all people with TB diagnosed and all placed on appropriate treatment • As part of this approach, at least 90% of key populations reached • At least 90% of all people diagnosed with TB treated successfully 	By 2030: <ul style="list-style-type: none"> • 80% and 90% reduction in TB incidence rate and TB deaths respectively, compared with 2015 By 2035: <ul style="list-style-type: none"> • 90% and 95% reduction in TB incidence rate and TB deaths respectively, compared with 2015 In all milestone years: zero TB-affected families facing catastrophic costs due to TB
MALARIA Global Technical Strategy for Malaria	By 2020: <ul style="list-style-type: none"> • At least 40% reduction in malaria mortality and malaria case incidence, compared with 2015 • Elimination in at least 10 countries • Malaria re-establishment prevented in all malaria free countries By 2025: <ul style="list-style-type: none"> • At least 75% reduction in malaria mortality and case incidence, compared with 2015 • Elimination in at least 20 countries • Re-establishment prevented 	By 2030: <ul style="list-style-type: none"> • At least 90% reduction in malaria mortality and malaria case incidence, compared with 2015 • Malaria elimination in at least 35 countries • Malaria re-establishment prevented in all malaria free countries

Figure 1 shows the expected decline in new infections/cases and deaths between 2015 and 2030. These graphs use 2015 as the base and plot the anticipated progress over the Sustainable Development Goal time frame, based on projections underlying the global plans established by partners. This highlights the significant gains that could be made by 2020 and the importance of the next five years in achieving the 2030 goals.

³ For TB, the timeframe of ending the epidemic is 2035, with 2030 as an interim milestone.

Figure 1: New Infections/Cases and Deaths between 2015 and 2030 – Global Plans⁴



HIV: Based on scientific breakthroughs and lessons learned from over a decade, the global community now has the tools and know-how to end the AIDS epidemic as a global health threat. To achieve this goal by 2030, UNAIDS has developed *Fast-Track - Ending the AIDS epidemic by 2030*, an initiative that targets new infections and AIDS-related deaths to spur a decline of 90 percent by 2030 compared to 2010.⁵

As noted in the UNAIDS Strategy 2016-2021, the interim targets from *Fast Track* include getting to fewer than 500,000 new infections and fewer than 500,000 AIDS-related deaths in 2020, thereby substantially changing the trajectory of the epidemic.⁶ Accelerating the pace to achieve the 2020 targets, UNAIDS argues, is required to end the AIDS epidemic by 2030. It is especially important that this quickening of pace happen in high-burden countries.

However, without increasing interventions, and instead maintaining coverage at 2013 levels, the epidemic would outrun the response, increasing the long-term need for treatment and thereby increasing future costs. *Fast Track* indicates that if the 2020 targets were to be reached only in 2030, there would be 3 million more new HIV infections and 3 million more AIDS-related deaths between 2020 and 2030 – a heavy and avoidable toll if effective actions are taken now.

TB: In 2014, the World Health Assembly adopted a new *End TB Strategy* for the post-2015 era.⁷ It sets ambitious interim targets for 2020, 2025 and 2030 with the eventual goal of ending the epidemic by 2035. The strategy incorporates targets aligned with the Sustainable Development Goals time frame, seeking a reduction in TB deaths and incidence rate of 90 percent and 80 percent, respectively, by 2030 compared with 2015. The strategy also sets interim milestones for TB deaths and incidence rate in 2020 to decline by 35 percent and 20 percent, respectively, from 2015 levels.

Progress during the 2016-2020 time frame will largely define the trajectory of how and when the TB epidemic will be ended. *The Global Plan to End TB*, developed by the Stop TB Partnership, is a costed plan for the first five years of the End TB Strategy.⁸ This plan, while acknowledging the significant progress made, regards the rate of decline in TB incidence of 1.5 percent per year between 2000 and 2013 as inadequate, stating that a 10 percent annual decline is required to meet the 2030 and 2035

⁴ These estimates are global and not just for the subset of countries where the Global Fund invests.

⁵ UNAIDS (2014). *Fast Track. Ending the AIDS Epidemic by 2030*.

⁶ UNAIDS (2015). *UNAIDS Strategy 2016-2021*.

⁷ WHO (2014). *The End TB Strategy*.

⁸ Stop TB Partnership (2015). *Global Plan to end TB. The Paradigm Shift: 2016-2020*.

targets of the *End TB Strategy*. To achieve this accelerated decline, the plan calls for a paradigm shift in TB care and prevention, calling for much greater ambition to end – not merely contain – TB.

Compared with maintaining current efforts, implementing the plan would prevent 4 million people from having TB and would save an additional 830,000 lives. The plan also presents the opportunity to save a further 1.1 million lives by scaling up faster so that the 90-(90)-90 targets are reached five years earlier, by 2020. There is therefore a strong incentive for each country to accelerate progress. Achieving the 90-(90)-90 targets no later than 2025 will keep the world on track towards ending TB as an epidemic in line with the *End TB Strategy*.

Malaria: In May 2015, the World Health Assembly endorsed a *Global Technical Strategy for Malaria 2016-2030* (GTS). The GTS envisions a world free of malaria and aims for a reduction of case and mortality incidence by at least 90 percent by 2030 relative to 2015.⁹ To get on the pathway to achieving this goal, the GTS targets at least 40 percent reduction in malaria case incidence and mortality rates by 2020 and at least 75 percent reduction by 2025, relative to 2015. These targets are echoed in the Roll Back Malaria Partnership's *Action and Investment to Defeat Malaria*. Reaching these global targets will extend a period of continuous achievements in the fight against malaria, which has seen a 60 percent decline in the mortality rate and a 37 percent reduction in the incidence rate between 2000 and 2015.¹⁰

By contrast, if malaria control interventions are only maintained at current coverage levels, case incidence will increase globally by 21 percent and mortality rate by 11 percent by 2030 from 2015 levels due to population-level loss of immunity induced by increased intervention coverage. Should intervention coverage fall to 2006-2008 levels, case incidence and mortality rates are predicted to increase above 2000 levels, translating into an estimated 521,000 additional deaths in 2020 compared to 2015.¹¹

For this reason, scaling up coverage of interventions recommended by WHO is crucial. Progressive elimination of malaria within and across countries is critically important, as is prevention of re-establishment of the disease. Achieving the GTS 2020 and 2025 milestones will require further scaling up of WHO currently recommended interventions for malaria control, improved surveillance and increased investments in research and development. New tools will be required for reaching the 2030 target of 90 percent reduction in case and death incidence.

The plans for all three diseases recognize that meeting these ambitious targets will require **resilient and sustainable systems for health**, with strong surveillance and data systems to identify all in need of prevention and treatment services, increasing reliance on community-based management to reach people, and integrated, multisectoral approaches to strive for efficiency and broad access to care.

Economic gains: Beyond health gains, investing in HIV, TB and malaria provides substantial economic benefits for households, businesses and societies as a whole. Reducing incidence of the three diseases would protect households from the costs of seeking care and from income losses due to the inability to work. Gains in productivity and reduced absenteeism can spur broad economic benefits. Improved education, achieved by healthy children, can also have a positive economic impact over the long term.

⁹ WHO (2015). *Global Technical Strategy for Malaria 2016-2030*.

¹⁰ WHO/UNICEF (2015). *Achieving the malaria MDG target: reversing the incidence of malaria 2000-2015*.

¹¹ Griffin et al. (2015). *The potential for burden reduction and local elimination achievable with reducing *Plasmodium falciparum* transmission: a modelling study*. *Lancet Infectious Diseases* (in print).

To portray the overall economic gains of investing in the global plans, UNAIDS, the Stop TB Partnership and the Roll Back Malaria Partnership have estimated what would be the “return on investment” if the global plans were fully implemented. All three use the “full-income” approach to estimating economic benefits, promoted by the Global Health 2035 Lancet Commission.¹² These estimates assess the economic value of better health and a more productive society by trying to capture productivity and consumption gains, including through household savings, and calculating that each person who goes on lifesaving treatment is a potential contributor to the economic health of a community. According to the Stop TB Partnership, implementing the Global Plan to end TB would produce a return of 27:1.¹³ UNAIDS predicts a return of 17:1 for implementing the Fast Track approach.¹⁴ Roll Back Malaria estimates return on investment ratios between 28:1 and 40:1 for achieving the 2030 malaria goals.¹⁵ These extraordinary benefit-cost ratios show the powerful economic effect of smart spending to fight the three diseases.

¹² Jamison DT, Summers LH, Alleyne G, Arrow KJ, Berkley S, Binagwaho A et al, Global health 2035: a world converging within a generation. *The Lancet* 2013; 382: 1898–955. This approach assesses the monetary value of additional life years gained.

¹³ Stop TB Partnership (2015). *Global Plan to end TB. The Paradigm Shift: 2016-2020.*

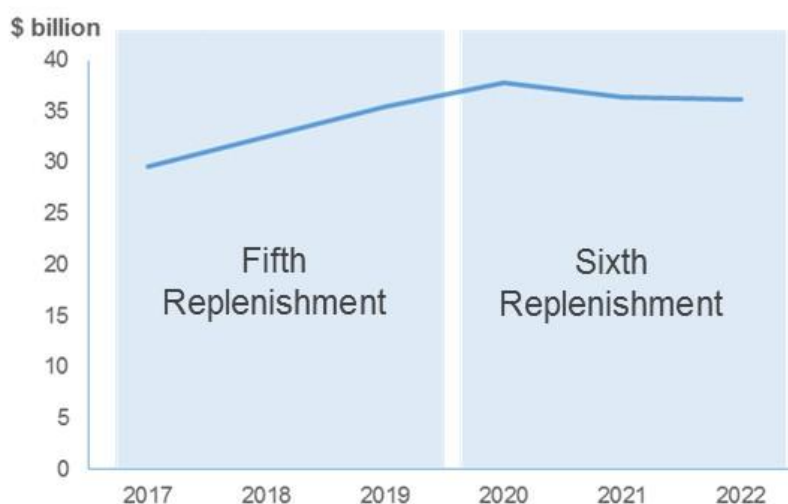
¹⁴ UNAIDS (2015). *How AIDS changed everything. MDG 6: 15 years, 15 lessons of hope from the AIDS response.*

¹⁵ Roll Back Malaria Partnership (2015). *Action and Investment to Defeat Malaria*

III. Cost to Implement the Global Plans

Technical partners have estimated the amount of financial resources required to implement the global plans for HIV, TB and malaria. Globally, the total cost of implementing the plans for the three diseases is estimated to be US\$134.5 billion over the 2017-2019 period. The annual cost across the three diseases is projected to increase up to 2020 and decline thereafter (Figure 2).

Figure 2: Combined Cost of Implementing the Global Plans for HIV, TB and Malaria



For the subset of countries where the Global Fund invests, the cost of implementing the global plans for HIV, TB and malaria is **US\$97.5 billion** over 2017-2019. This represents an overall increase of 12 percent over the total need that was identified for 2014-2016. For malaria, countries where the Global Fund invests account for nearly the entire global funding need (96 percent). For HIV and TB, Global Fund-eligible countries account for 78 percent and 50 percent of the funding need, respectively.

The **plan for HIV** calls for accelerated scale-up of HIV prevention and treatment tools over the first few years of the strategy.¹⁶ This requires greater investments until 2020, after which requirements begin to decline. The overall costs include rapid scale-up of ARV therapy, including for pregnant women; significantly higher coverage of prevention interventions for key populations; cash transfers for girls in countries with very high HIV prevalence; voluntary medical male circumcision in priority countries; and pre-exposure prophylaxis. Recognizing the importance of strengthening community systems, the costing builds in assumptions of shifting more care from facility to community-based delivery, which will not only deliver cost savings but will also improve the uptake of services and bring them closer to the people who need them.

For TB, costs are from the standard investment scenario outlined in the *Global Plan to End TB*, where 90-(90)-90 treatment targets are reached in 2025 (versus a more accelerated scenario also presented in the plan whereby these targets are reached even earlier, in 2020).¹⁷ The cost projections are developed through investment packages, which are tailored to various settings, according to characteristics of the TB epidemic, health systems constraints and socioeconomic condition. As with HIV, increased upfront investments in TB are also needed to achieve the 2020 milestones. These accelerated efforts to find and treat people with TB would see the increases in investment pay off, as the number of people needing TB care reduces over time. While the costs include only current interventions, new tools will be essential to meeting the milestones of the *End TB Strategy*.

¹⁶ UNAIDS (2014). Fast Track. Ending the AIDS Epidemic by 2030.

¹⁷ Stop TB Partnership (2015). Global Plan to end TB. The Paradigm Shift: 2016-2020.

For malaria, costs are from the *Global Technical Strategy* to scale up the following interventions: vector control with long-lasting insecticidal nets or indoor residual spraying, chemoprevention in pregnant women and children, fever testing, malaria case treatment and surveillance.¹⁸ The estimated cost of implementing the GTS reflects the costs of reaching targets that can be realistically achieved within the time frame. The cost estimates are for scaling up intervention coverage gradually to 80 percent from current coverage levels for malaria. Beyond 2020, costs are projected to rise, partly because of continued gradual scale-up projected by the GTS but also due to increased surveillance costs as more countries reach elimination. Bottom-up costing analysis from national strategic plans in Africa show that countries plan to scale up at a faster rate than projected by the GTS, aiming for universal coverage of vector control during this replenishment period. Moreover, the cost estimates are based on current tools, while new tools – that are expected to be more costly yet will be essential to fight the emergence and spread of drug and insecticide resistance – are not included in the GTS costing. Therefore it is important to note that for malaria the cost of implementing the GTS may be an underestimate of the full funding need.

All three global plans have included elements of health systems in their costs, albeit to varying degrees. The resource needs for HIV include costs for procurement and supply chain strengthening, health management information systems, human resource capacity building, and other program and social enablers. The TB plan includes estimates of health care utilization, procurement and distribution of commodities, and laboratory costs. Furthermore it recommends increased emphasis on community-based approaches within the plan, promoting patient-centered models of care, including ambulatory treatment in Eastern European countries. The malaria plan includes estimates of the cost of commodity procurement and shipping, in-country distribution, patient care service delivery at public health facilities within communities, and surveillance.

¹⁸ WHO (2015). *Global Technical Strategy for Malaria 2016-2030*.

IV. The Critical Role of Domestic Financing

Increasing domestic financing for health is a tremendously important pillar in the collective effort to end HIV, TB and malaria as public health threats. Domestic financing will continue to play a key role in meeting the funding need for HIV, TB and malaria, as increased domestic investments in health signal commitment and are a pathway to the long-term sustainability of programs.

Low- and middle-income countries are already taking greater responsibility for investing in the health of their citizens, with encouraging trends and levels in spending across the three diseases:

- By 2014, more than half of HIV-related spending in low- and middle-income countries was from domestic sources.¹⁹
- Domestic sources also accounted for over 80 percent of TB spending in 2014. Nonetheless, the global share masks large disparities among countries. In certain countries and country groupings – namely Brazil, Russia, India, China and South Africa (BRICS), upper-middle-income countries and regions outside Africa and Asia -- domestic financing dominates total spending on TB. Elsewhere, countries remain largely reliant on external financing.²⁰
- For malaria, global spending from governments of endemic countries has increased year on year since 2000.²¹

The Global Fund partnership has played a major role in supporting and accelerating this shift towards increased domestic resources.²² Moreover, the Global Fund's new allocation model, in place since 2014, has increased the focus of resources on the highest-burden countries with the lowest income. This has in turn required higher-income countries to further increase the share of their response covered by domestic resources.

In addition, as part of the allocation approach, and to foster shared responsibility, a new co-financing policy was implemented. This policy allows countries to access an additional 15 percent of the allocated resource envelope by making verifiable commitments to increase financing for the three disease programs while at the same time increasing overall financing for the health sector.

This new policy has already contributed to significant gains in government commitments to health. Based on concept notes approved to date under the current funding model and funded from the Fourth Replenishment, governments have so far committed an additional US\$5.9 billion in investments for HIV, TB and malaria programs for 2015-2017.²³

These commitments also confirm domestic financing trends projected for the Fourth Replenishment. In 2013, domestic financing was assumed to grow at an average annual rate of 11 percent over 2014-2016. The latest figures suggest that these expectations are being met.

The forecast of domestic resources in Global Fund-eligible countries over the Fifth Replenishment period used for this investment case builds on the commitments the Global Fund has received for 2015 to 2017, with adjustments made to ensure alignment with the measurement of the costs of implementing the global plans.²⁴

¹⁹ UNAIDS (2015). How AIDS changed everything. MDG 6: 15 years, 15 lessons of hope from the AIDS response.

²⁰ WHO 2015. Global Tuberculosis Report.

²¹ WHO (2014). World Malaria Report

²² Global Fund Domestic Resource Mobilization Strategy.

²³ Compiled from 231 programs for which counterpart financing requirements are applicable and have confirmed commitments, reviewed as of October 2015.

²⁴ Government commitments are predominantly for direct costs which does not factor substantial government spending for service delivery that is included in the Global Plan costs. Hence, the funding committed for 2015-2017 through the Global Fund's co-financing policy is a subset of the amounts used for the forecast.

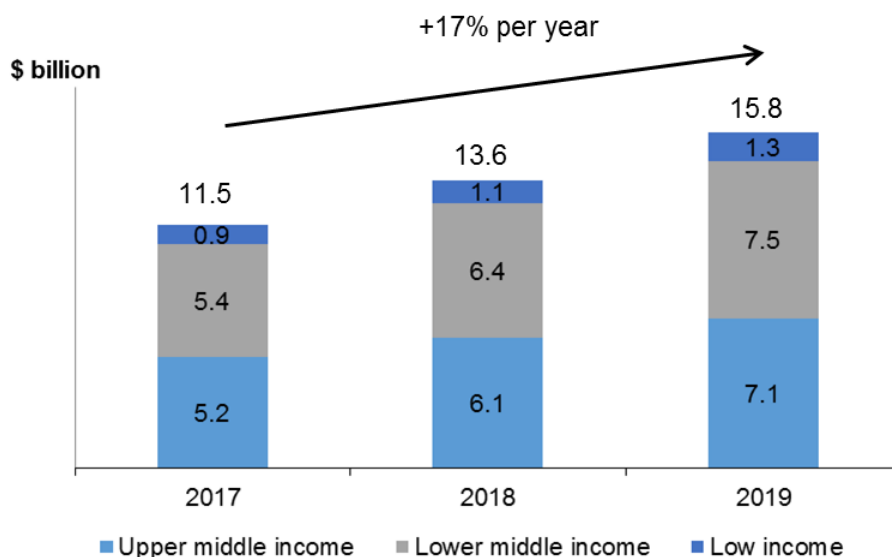
To project domestic financing beyond 2017, a similar methodology was applied as for the 2014-2016 forecast from the previous replenishment, whereby countries spending less than others with a similar disease burden and economic capacity are assumed to have the greatest potential to reprioritize investments and increase spending on the disease over time.²⁵

Under the scenario where domestic spending in all countries increases in line with economic growth, supplemented by increased efforts from countries that are currently under-spending relative to disease burden and economic capacity, Global Fund-eligible countries are estimated to contribute a total of US\$41 billion during 2017-2019, accounting for 42 percent of the overall US\$97.5 billion funding need for the three diseases. That scenario essentially projects more than three times as much investment by implementing countries as comes through the Global Fund.

Figure 3 presents the forecast by income group for all diseases combined. Under this scenario, over the Fifth Replenishment period, domestic resources would cover 55 percent of the funding need for TB, 40 percent for HIV and 34 percent for malaria, in countries where the Global Fund invests. For HIV, the projections are in line with the UNAIDS Strategy targets of domestic financing by income group in 2020.²⁶

The scale-up in government financing of the response to the three diseases assumed in the projections is ambitious, albeit justified by commitments outlined in concept notes. It will be important that governments follow through on these commitments and that all partners continue to catalyze this increase. The Global Fund, through its leveraging ability, will have an important role in this effort.

Figure 3: Forecast of Domestic Financing by Income Group



²⁵ Countries were ranked according to a Domestic Investment Priority Index (DIPI), which scales the level of domestic expenditure by both the overall government budget and by the disease burden for each of the diseases. This method sets a benchmark to assess which countries are spending below the global median relative to their economic capacity and disease burden. The scenario projects that all domestic spending for all countries would increase in line with economic growth, and that those below the median DIPI would increase spending further to reach the 75th percentile DIPI by 2030.

²⁶ UNAIDS Strategy 2016-2020. The UNAIDS financial targets are that domestic public spending would cover the following share of the HIV funding need by 2020: 12 percent in low-income countries, 45 percent in lower-middle-income countries and 95 percent in upper-middle-income countries.

V. The Investment Case

With all of the progress made in recent years, the global community is on **the right side of the tipping point** to control HIV, TB and malaria. Investing in programs that prevent, treat and care for people affected by the three diseases are making a transformational change in global health, but there is a need to do more with more. Renewed investment can end the epidemics, deliver wider health gains including resilient and sustainable systems for health and generate long-term economic returns. Every step closer to the overall US\$97.5 billion funding need can accelerate progress even faster, for greater impact.

Based on the analysis provided in this report, the Global Fund seeks to mobilize a total of **US\$13 billion** for the Fifth Replenishment. By maximizing and optimizing implementation of the highest-impact interventions, this collective investment will drive tremendous progress, enabling countries to stay on a trajectory towards the 2030 global plan targets.

Specifically, a US\$13 billion contribution for the Fifth Replenishment could:

- Save up to **8 million**²⁷ **lives** through programs supported by the Global Fund, leading to **30-32 million** lives saved cumulatively by 2020²⁸;
- Avert up to **300 million** new infections/cases across the three diseases;
- Bring down deaths from the three diseases to **1.6 million** in 2020, a reduction of more than a third compared with the 2014 level of 2.5 million;
- Lead to a drop in incidence and mortality that puts the world within reach of the targets required by the three global plans to end the epidemics by 2030;
- Support partners in domestic health investment of **US\$41 billion**;
- Allow the Global Fund to make substantial contributions towards building resilient and sustainable systems for health.
- Support strengthened responses for women and girls, key populations and human rights;
- Lead to economic gains for countries of up to **US\$290 billion** over the coming years and decades, based on partner estimates.

The estimate of US\$290 billion in economic gains is based on estimates by partners on the return on investment for implementing each of the global plans. These estimates assess the economic value of better health and a more productive society by trying to capture productivity and consumption gains, including through household savings, and calculating that each person who goes on lifesaving treatment is a potential contributor to the economic health of a community. The totals – broad estimates, not scientific projections – come from applying collective estimates from each of the partner plans outlined in Section II.

Our success in the Fifth Replenishment will be built upon the foundation of the many contributions that have been made so far. Displaying extraordinary leadership in global health, the governments of the United States, France, the United Kingdom, Germany, Japan, the European Commission, Canada, Italy, the Netherlands, Sweden, Norway, Australia, and many others have contributed effectively, and not only with finances. The Bill & Melinda Gates Foundation, Product (RED) and many others have also provided highly significant contributions and innovative approaches to expanding the partnership overall.

²⁷ This is based on a calculated range of 6 to 8 million lives saved.

²⁸ Lives saved estimates calculated using same methodology as for current strategy period, for consistency and comparability.

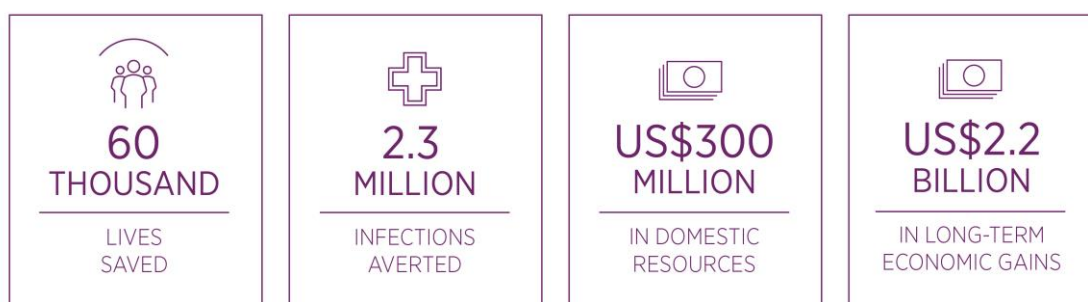
For Every \$100 million

Every contribution matters. Every partner able to contribute funding must be encouraged to take part in the progress underway and share in the excitement of collective action. Some can achieve greater impact by leveraging matching funds. Others can spur increased commitment, with knock-on benefits in the social and economic health of affected communities. Every contribution can make a difference, and we have performed calculations to determine what every contribution of US\$100 million can achieve in global health and related sectors.

Every US\$100 million contribution to the Global Fund would:

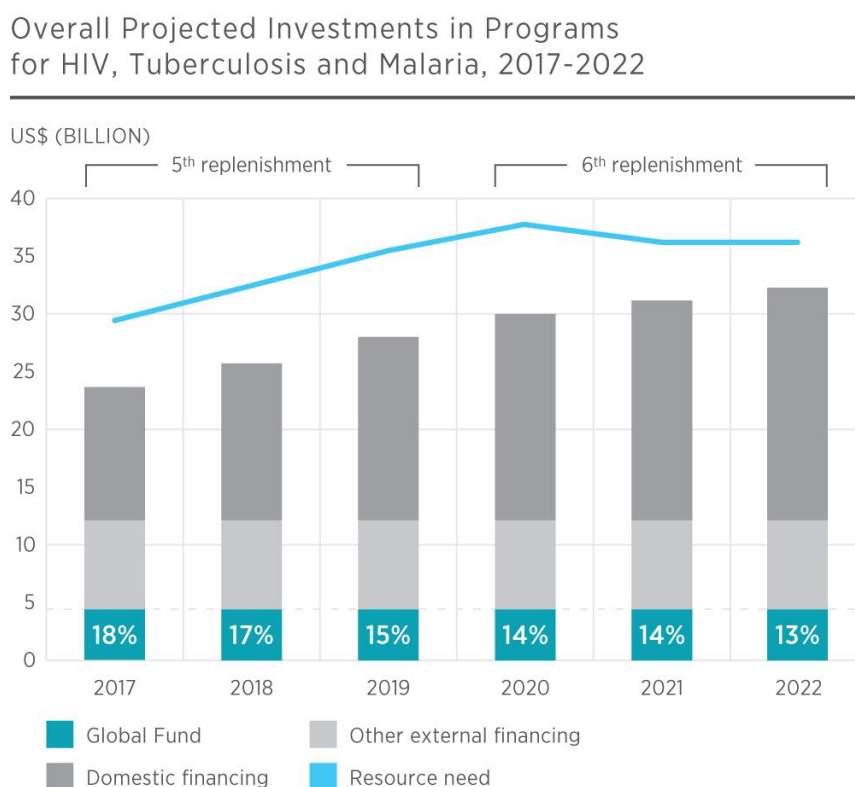
- Save up to **60,000** lives through programs supported by the Global Fund;
- Avert up to **2.3 million** new infections across the three diseases;
- Support partners in domestic investment of **US\$300 million** toward the three diseases;
- Spur **US\$2.2 billion** in long-term economic gains.

FOR EVERY **US\$100 MILLION** TO THE GLOBAL FUND



Overall, the projection is that financing provided by the Global Fund has put the global community on the right side of the tipping point, and that the Global Fund's percentage of the total resources allocated to the three diseases will decline beginning in the Fifth Replenishment, while overall resources cover at least 80 percent of the funding need. As Figure 4 shows, overall resource needs are expected to peak in 2020 and then decline thereafter, as domestic financing grows the contribution from the Global Fund is expected to decline as an overall percentage.

Figure 4: Projected Investments in Programs for HIV, Tuberculosis and Malaria, 2017-2022²⁹



The Global Fund, in cooperation with the technical partners, estimated the impact and results that could be achieved by 2020 in order to assess the achievable impact of the anticipated investments. The analysis was coordinated by the Global Fund across the three diseases and was based on the same models and modeling institutions that contributed to the design of the global plans (see Annex 3 for further details and an overview of the methodology).

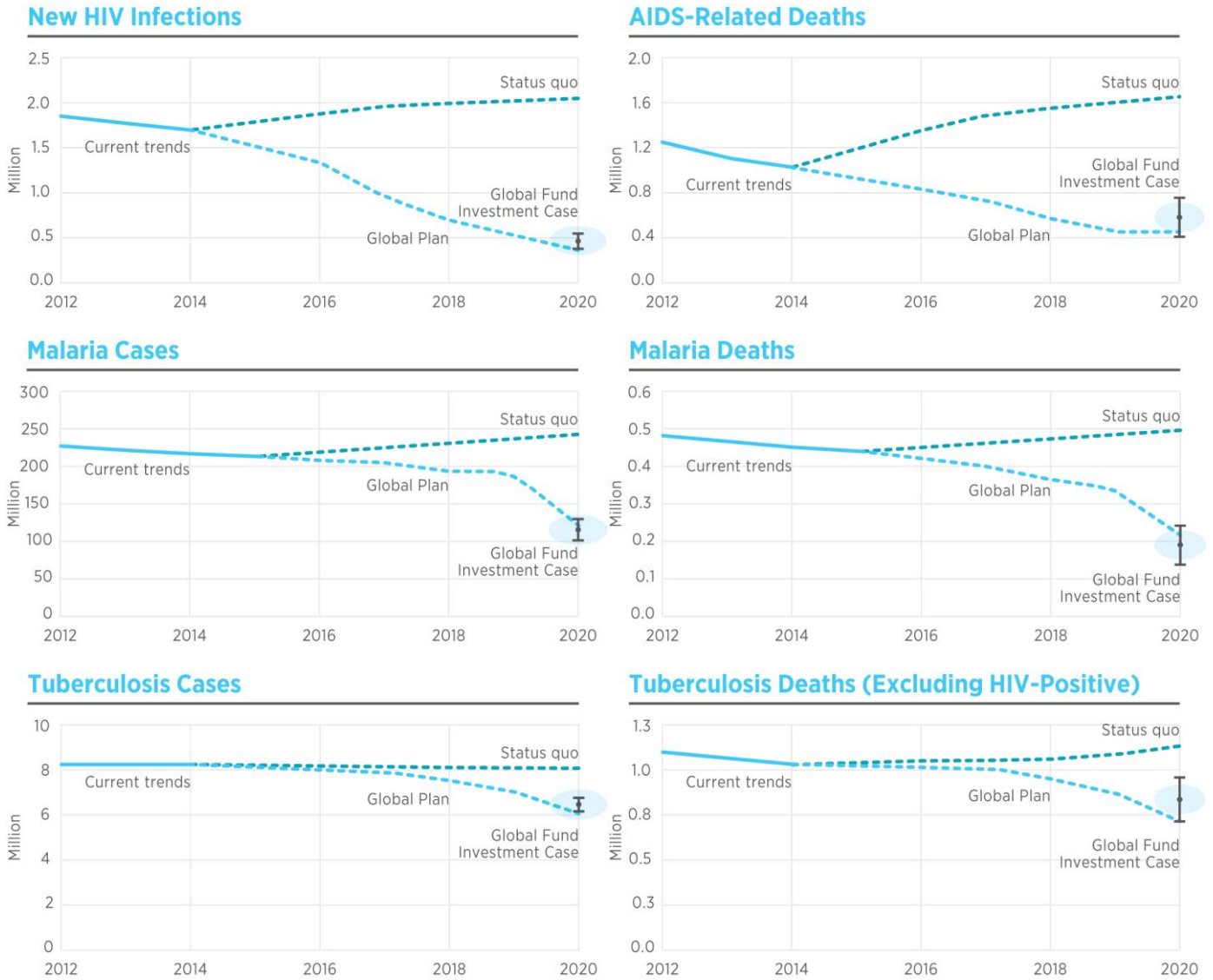
The modeling was based on the assumption that governments and donors would make a concerted effort to achieve maximum health gains with their collective investment. The modeling therefore sought to maximize the impact of projected available resources by optimally distributing external funding across countries and by targeting funding within countries to the highest-impact interventions, as well as the most affected regions and population groups.

If optimally allocated, the collective financing could achieve significant gains, substantially changing the trajectory of the three diseases. Figure 5 shows these results:

²⁹ The Global Fund contribution (yellow) is assumed at the level of the Fifth Replenishment ask, accounting for operating expenses and existing funds this is expected to contribute around US\$13 billion for 2017-2019.

Figure 5: Numbers of New Infections/Cases and Deaths, by Disease

Each graph shows current trends, projections for acceleration in global plans, and projections if current levels of investment are maintained. The levels identified as the Global Fund Investment Case, drawn here as a circle with a range for outcomes, indicate what can be achieved by 2020 through a successful Replenishment and other key factors.



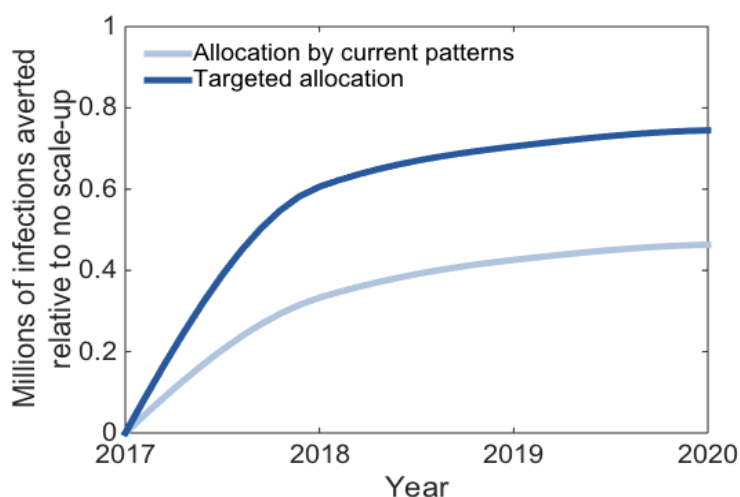
Key Results: HIV/AIDS

Between 2014 and 2020:

- AIDS-related deaths could be reduced by 43 to 55 percent.
- Incidence could be reduced by 69 to 73 percent.
- ARV therapy coverage could be scaled up to 64 to 80 percent of total need by 2020.
- In contrast, if coverage were maintained at current levels, the number of new HIV infections would increase from 1.7 million in 2014 to 2.1 million in 2020. Similarly, the AIDS-related deaths would rise to 1.6 million in 2020 from 1.0 million in 2014.

The indicated ranges are due to two different optimization scenarios that were considered: one maximizing deaths averted, the other scenario maximizing infections averted while prioritizing treatment for patients with CD4 count below 350. These modeling results assume resources are optimally allocated across countries and to the most cost-effective interventions within each country. While this assumes to some extent efficiencies in resource allocation by location and population, greater impact can be estimated with further disaggregated data. To this end, a complementary modeling exercise was applied to a subset of 18 African countries, representing in total more than 80 percent of the disease burden across sub-Saharan Africa at subnational resolution, to show the importance of allocating optimal mixes of interventions by subnational epidemiology and to the most vulnerable populations. This model predicts that a 68 percent gain in cumulative infections averted can be achieved in sub-Saharan Africa over the replenishment period by moving from a “business as usual” allocation pattern to one that responds more fully to local epidemiology (Figure 6).

Figure 6: Gains in Infections Averted across Sub-Saharan Africa



This gain would come from allowing all funding sources to prioritize the places and subpopulations in which it is most cost-effective to intervene.

Overall, these results emphasize the importance of targeting resources. This is also borne out by recent examples of countries optimally allocating resources - such as Kenya and Sudan³⁰.

³⁰ UNAIDS (2015). On the Fast-Track to end AIDS by 2030. Focus on location and population.

Key Results – Tuberculosis

- TB deaths could be reduced by 21 percent from 1.0 million in 2014 to 813,000 in 2020. This represents a significant acceleration in reduction of deaths relative to past trends.
- Incidence could be reduced by 21 percent between 2014 and 2020 to a level of 6.5 million new cases in 2020 compared with 8.2 million in 2014.
- Case detection rate (all forms of TB) could be increased to 75 percent in 2020.
- In contrast, under continuation of the status quo (i.e. if current level of coverage were maintained), the number of new TB cases (all forms) and TB deaths (excluding HIV-positive) would not come down, and instead would remain close to 2014 levels.

In the case of TB the modeling was able to reflect the effects of optimal distribution of external resources across countries, broadly implying a linear relationship between impact and resources. The level of data did not allow a more differentiated optimization of interventions within country. There are, however, country examples that suggest that efficient in-country targeting can lead to declines in incidence that are above the level predicted by the modeling analysis.

Some of the best examples are countries that currently have a centralized and vertical care delivery system who could achieve more for the same resources were they to decentralize and reform their system. There are also countries that have achieved more with fewer resources by successfully using all available tools in an efficient manner, with innovations and sub-national differentiated approaches. Examples of these two situations are mentioned below.

- Armenia and Kazakhstan: Both countries have embarked on a reform plan to change from a centralized and TB hospital-based care delivery model to a decentralized primary health care and community-based model. This exercise will save domestic resources that can then be reprogrammed to improve outcomes and impact. During the Global Fund concept note iteration process it became clear that both countries are planning to save significant amounts of domestic funding by implementing the reform process. The European regional plan now has a component to reduce unnecessary hospitalization.
- Cambodia is a low-income country with very high rates of TB. It is one of the few countries that has conducted two repeat national TB prevalence surveys in 2002 and 2011, and demonstrated that the TB burden is decreasing at a rate of 4 to 5 percent each year. This is a major achievement when compared to the global TB incidence decline of only 1.5 percent per year. The experience of Cambodia shows that even in resource-limited settings TB programs can make an impact. The TB response in Cambodia has been open to new tools and innovations, differentiated approaches for different population groups and evidence-based scale-up of approaches for improving case finding and treatment outcomes.

Key Results – Malaria

- Deaths caused by malaria could be reduced, from 437,000 in 2015 to 190,000 in 2020, meeting the GTS target of a more than 40 percent decline.
- The number of malaria cases could be reduced by 32 to 46 percent between 2015 and 2020.
- Malaria would be eliminated in ten countries by 2020.
- Vector control access could reach 68 percent globally, and 75 percent in the 20 countries with the highest burden.
- In contrast, if coverage is maintained at current levels, the number of malaria cases would increase from 214 million in 2015 to 242 million in 2020. Similarly, the number of malaria deaths would rise to 496,000 in 2020 from 437,000 in 2015.

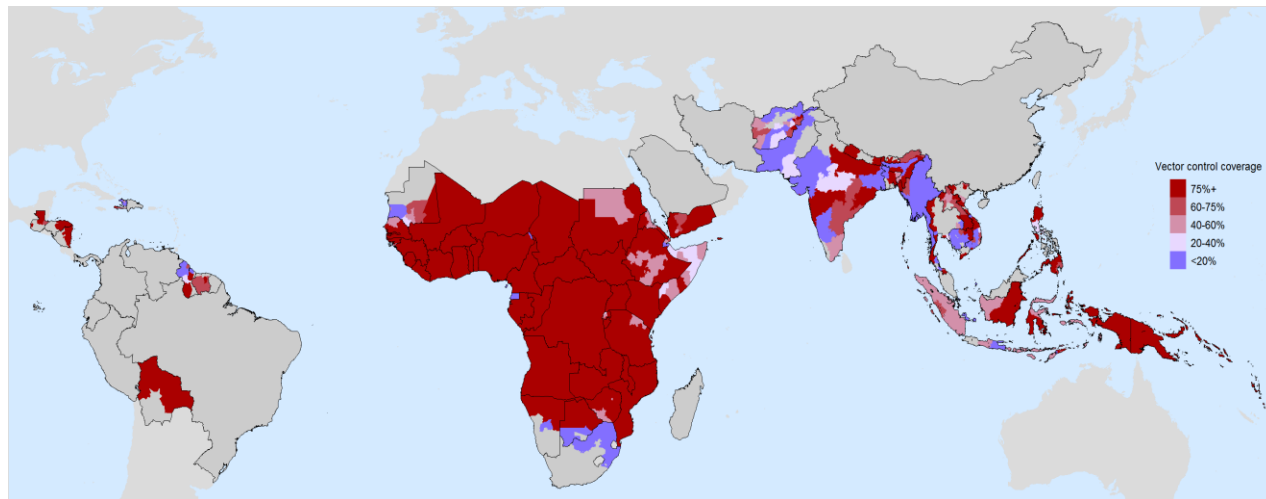
These results assume that resources are targeted so that the highest coverage of preventive interventions is achieved in the countries with highest burden, while surveillance and access to care are maintained at high levels across all malaria-endemic countries. They are based on two scenarios in which the number of nets required to reach maximum coverage has been capped at 90 percent and 80 percent, respectively.

The results show the potential benefits of tailoring packages of interventions to the epidemiological context of villages, regions and countries so that resources achieve the greatest and most equitable impact. Some caution is, however, warranted when reflecting on these projected outcomes. Perhaps even more so than for the other diseases, past as well as present epidemiology must be factored in when responding to malaria, due to the risk of rapid rebounds in infection. This and the quality and access to disaggregated epidemiological data make the task of targeting vector control more complex.

With this proviso, Figure 7, below, illustrates the effect of vector control arising from the modelling, by showing the optimal distribution of vector control by country, given available resources. To achieve the greatest impact, resources are targeted at the highest-burden countries.

This targeting is assumed to be possible at the first administrative unit – typically the province – and is estimated to bring substantial efficiency gains compared to applying a uniform set of interventions. Such targeting requires a strong investment in surveillance and in capacity building to monitor impact at the local level. In addition, the absolute impact depends critically on achieving a high level of preventive interventions in the areas with the highest burden and hence relies on the capacity of local programs and the health system to maintain such levels. This is particularly relevant given that malaria is a disease of poverty and hence the highest burden is concentrated in areas with the weakest health infrastructure.

Figure 7: Distribution of Vector Control Coverage under Optimized Allocation.



Building Resilient and Sustainable Systems for Health

Ending HIV, TB and malaria as epidemics can only be achieved with stronger systems for health, and investments in the treatment and prevention of HIV, TB, and malaria improve countries' overall health systems while promoting community responses in national decision-making. This mutually reinforcing relationship between funding disease control and overall system improvement typifies Global Fund investments. Nearly 40 percent of Global Fund investments go toward improving systems for health, and the amount committed to cross-cutting issues has doubled in recent years. Investments in HIV, TB, malaria, and strengthening health systems have a powerful multiplier effect not only on people's overall health status, but also on countries as a whole, and are a powerful component of efforts to implement quality care through universal health coverage in many countries. It is important to understand that a health system encompasses more than just the clinical setting, but also reaches deep into the community. Community systems provide key prevention and behavioral programs, and can reach the vulnerable and marginalized – the last mile that leaves no one behind.

Training health workers is also critically important to building resilient health systems. In some countries, the Global Fund supports emergency health worker retention schemes which can improve retention rates of nurses and doctors and greatly improve coverage of health services.

In a world where the resources required to end the three epidemics are bigger than the need, stronger information systems assist in making rational resource allocation decisions. This data-driven process, often called “allocative efficiency,” has been embedded into the Global Fund grant-making process. Countries are required to complete an epidemiological analysis to identify disease, trends and data gaps prior to submitting their concept notes. By focusing support to the right populations in the right places, a more effective response is realized. To support this effort, the Global Fund also works with countries to better map and estimate the size of key populations.

While improved information and human resource systems are an achievement, real success comes from ensuring people have universal access to health care. Many efforts are underway to expand community-based health insurance and support performance-based financing. Similarly, many countries find efficiencies in the delivery of services and health insurance coverage, boosting both coverage and sustainability of their health systems.

Communities were the first to respond to the HIV pandemic – and to the recent Ebola outbreak. The Global Fund is supporting the role of community services as they implement and evaluate health responses, and reach those who may lack access to health care. The Global Fund increasingly provides HIV, TB and malaria programs at the community level – a more cost-effective and efficient approach that strengthens the link between health and community services.

Investing in Gender Equality, Key Populations and Human Rights

The Global Fund partnership has been an important investor in improving the health of women and girls and serving key populations, and is increasingly investing in human rights programs. The Global Fund was among the earliest and strongest advocates for addressing gender inequality, with 55-60 percent of Global Fund investment benefiting women and girls. Through collective commitment working with multilateral and bilateral programs, the Global Fund continues to strive for more advances to address the fundamental inequality of and discrimination against women and girls, a key driver of HIV infection in many parts of Africa. The marginalized and left behind – the LGBTI community, sex workers, persons who inject drugs, migrants, prisoners and the urban poor – are heavily affected by HIV and tuberculosis. Malaria most threatens children under five and pregnant women.

We have to find innovative solutions to end the epidemics. Investing in programs that increase access to critical HIV prevention and treatment services is not enough; we also have to support programs that

seek to change environmental and social factors that put women and girls at increased risk. Blanketing a country with mosquito nets is not enough; we have to take a comprehensive approach to malaria. Diagnosing and treating TB cases in the same way is not enough; we have to dramatically expand outreach.

In middle-income countries, the Global Fund is refocusing investments from commodities and disease-specific services so that they can increasingly flow to human rights and civil society programs, addressing the needs of key populations. Collectively, the Global Fund is making progress in increasing investment in the programs that reduce human rights barriers to access.

Since the founding of the Global Fund, we have invested heavily in reproductive, maternal, child and adolescent health. The majority of RMNCAH funding requests come from low-income, high-burden countries, where women, children and adolescent girls are among the most vulnerable to HIV and malaria infection. With the World Bank, we are supporting selected countries to expand access to essential health services for women and children through facility-level performance-based financing. In some countries, we are working together with the government to expand programs to cover larger geographical areas, and aim to see that essential health commodities reach populations most in need, particularly women and children. The World Bank supports the design and management of the program and the verification of results. We worked closely with partners for the development of the Global Financing Facility and are working together in setting the stage for our partnership in other countries.

We are also deeply involved in partnerships that amplify impact: All-In to #EndAdolescentAIDS is galvanizing action among young people, while DREAMS, the initiative launched by PEPFAR, aims to reduce HIV incidence amongst adolescent girls where prevalence is highest. The Global Partnership for Education, the World Bank, DFID, and NORAD are also working with us to find new ways to protect adolescent girls in eastern and southern Africa, and we are also supporting the Every Woman Every Child strategy.

A person-centered approach, recognizing that the fabric of humanity is made of diverse yet interconnected threads, has to guide our collective work. Keeping girls in schools can be tremendously effective in preventing HIV and promoting gender equality. Providing cash incentives, doing interventions for vulnerable young women to attend vocational colleges, stressing programs with a family-centered approach, including boys and men in the response to gender inequality – these are all efforts we support and need to expand. When our collective efforts can help create a critical mass of healthy, educated and financially independent women who make well-informed decisions about their lives, we know we are on the right track.

VI. Conclusion

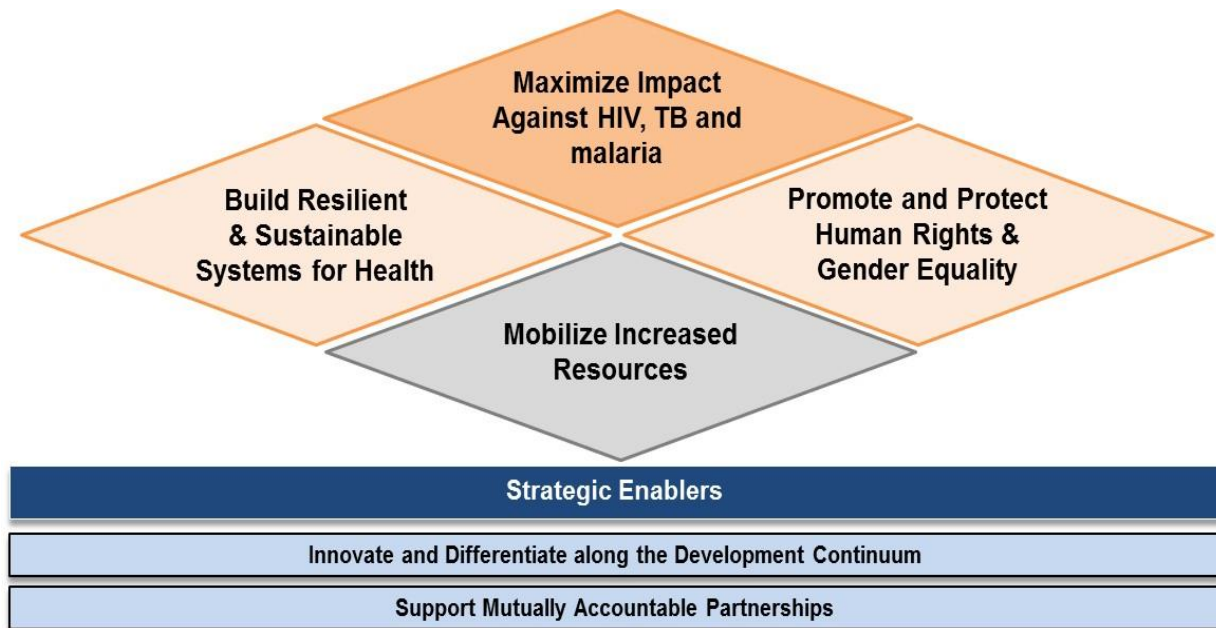
The role of the Global Fund partnership in achieving the impact and results described in this investment case will be critically important. Through its direct investments and through its ability to support countries to mobilize domestic resources, the Global Fund partnership can work together to ensure that all HIV, TB and malaria funding is optimally used to achieve transformative impact and to end the epidemics. In addition, the Global Fund can leverage further innovation through scientific advances, better implementation, improved data and private sector know-how to unlock improvements in disease prevention, treatment and care. These bold goals cannot be achieved without resilient and sustainable systems for health that make it to the last mile, and that focus on the dignity and rights of every person, to create an inclusive human family.

Ending the epidemics, reaching the most vulnerable, going the last mile and building the necessary resilient systems that ensure the gains can be sustained is a tremendous challenge. It will require the determined efforts and sustained commitment of all partners. Going forward, investments by the Global

Fund partnership will have to be smarter, more focused, nuanced and interwoven in order to make real progress toward ending these epidemics.

The Global Fund Strategy 2017-2022, *Investing to End Epidemics*, will take up this challenge. It has four key objectives and two strategic enablers. Together these will ensure that the Global Fund assumes its critical role in achieving the results and impact set out in this investment case, and get the world on the right trajectory towards ending the epidemics by 2030.

Figure 8: Global Fund Strategic Framework 2017 to 2022



Annex 1: Methodology for Forecasting Resource Needs

WHO, UNAIDS and the Stop TB Partnership have developed global plans for malaria, HIV/AIDS and TB spanning the Fifth Replenishment period and beyond. For the Investment Case, “resource needs” are defined as the cost over 2017-2019 to implement these global plans in the countries where the Global Fund invests.

HIV

The total resource need for HIV in the 116 eligible countries is \$66.1 billion over 2017-2019. Costs are from the *Fast-Track* strategy resource estimate, which includes costs for behavior change and biomedical interventions, program enablers (planning and coordination, monitoring and evaluations, surveillance, information systems), social enablers (public awareness, policy change), and development synergies (support for orphans and other vulnerable children, gender equality, health systems strengthening). The strategy calls for rapid scale-up of HIV prevention and treatment tools to end the epidemic by 2030, and thus associated costs are high in the first years of the strategy, but taper beginning in 2020 as prevention and treatment efforts reduce new infections over time. Reduction in commodity costs over time are built into the costing. In addition, the strategy assumes that there will be cost savings as more treatment is expected to shift to the community level.

TB

Costs are from the *Global Plan to End TB* developed by the Stop TB Partnership, and are based on the standard scale-up scenario, where 90-(90)-90 treatment targets are reached in 2025.³¹ The cost to implement this scenario in countries where the Global Fund invests is estimated at \$17.7 billion over 2017-2019.

National TB programs produced the cost projections during a workshop in December 2014 for nine countries representing different epidemiological and income settings, of which seven are Global Fund-eligible. For the remaining countries, costs were extrapolated using WHO expenditure and budget data. Direct costs (first and second-line drugs, multidrug-resistant management, labs and collaborative TB/HIV activities) and indirect costs (program support and health systems utilization) were calculated for the following interventions in different packages according to setting: 1) increasing active case finding; 2) increasing access to high-quality TB services; 3) improving diagnostics, particularly by scaling up use of GeneXpert; 4) improving multidrug-resistant TB management; and 5) providing prophylactic TB treatment for all HIV-positive patients.

Malaria

The resource need for malaria reflects the costs to implement the *Global Technical Strategy for Malaria 2016-2030* developed by WHO.³² Information on the total cost of implementing the GTS is available for 76 countries out of the 80 countries eligible for malaria funding from the Global Fund. The total cost of implementing the GTS in these 76 countries amounted to US\$13.7 billion for 2017-2019, which corresponded to a gradual increase of intervention coverage from current levels to 80 percent, by 2020.

³¹ Avenir Health (2015). *The Global Plan: Costing the 90-(90)-90 strategy*.

³² Patouillard et al. 2015. *Costing the Global Technical Strategy for Malaria Reduction and Elimination 2016-2030*.

The costing focused on WHO currently recommended interventions in 2015: vector control, including long-lasting insecticidal nets or indoor residual spraying, chemoprevention, fever testing, malaria treatment and surveillance. Overall, 80 percent of costs are concentrated in 21 high-burden countries. Looking ahead, case management costs are forecasted to decline as the number of new cases is expected to decrease as a result of malaria control investments. Prevention costs are, however, expected to increase with population growth and increased vector control and chemoprevention coverage rates. The cost of surveillance is expected to continue increasing as more countries reach elimination.

All three global plans have included elements of health systems in their costs, to varying degrees. The resource needs for HIV include costs for procurement and supply chain strengthening, health management information systems, human resource capacity building, and other program and social enablers. The TB resource needs comprise estimates of health care-utilization using costs from WHO-CHOICE of inpatient and outpatient care. The malaria costs include direct health systems costs, including personnel time, as well as for enhanced surveillance capacity. Consultations with the technical partners confirm that there are no overlapping costs between the plans in cross-cutting areas.

In all plans, costs of research and development are not included. All cost estimates are in constant 2014 U.S. dollars.

Annex 2: Methodology for the Forecast of Domestic Financing and Other External Financing

Domestic Financing Forecast

For the purposes of assessing overall available resources, a forecast of domestic financing was produced for HIV, TB and malaria for Global Fund-eligible countries over the 2017-2019 replenishment period. The Global Fund has a database of government commitments for the three diseases, submitted by countries in concept notes as part of its co-financing policy. These commitments provide the basis of the estimates for 2015 to 2017.³³ At the time of the forecasting, commitments data were available for 89 countries for each of TB and HIV and for 60 countries for malaria.

Commitments provided in concept notes mostly cover direct program costs only and do not include systems-related shared costs that are typically borne by governments and counted in the global plan resource needs estimates. Therefore adjustments were made to better align the commitments data with measurement of the resource need. Specifically, data on government commitments and the full national strategic plan funding need were obtained from the financial gap tables submitted in concept notes, and the share of commitments over the national strategic plan funding need was applied to the global plan resource need to get estimates for 2015-2017. For countries where co-financing data was not available, baseline data was constructed from historical estimates of domestic spending data provided by partners:

- **HIV:** The Global AIDS Response Reporting Mechanism (GARPR), supplied by UNAIDS.
- **TB:** Reported expenditure by national TB programs, supplied by the WHO Global TB Programme. In all cases, there were separate estimates for direct programmatic expenditure and for estimated spending on utilization of health services. The sum of the two was used as the estimate of domestic expenditure.
- **Malaria:** Reported expenditure by national Malaria Programs, supplied by the WHO Global Malaria Programme. As these expenditures reflect direct program expenditure only and do not include the costs of service delivery, the latter was estimated by examining the cost breakdown in the malaria resource need estimates. The proportion of service delivery was estimated by assuming that domestic spending would cover 75 percent of the service delivery costs for indoor residual spraying and case management and 15 percent of the service delivery costs for long-lasting insecticidal nets.

After 2017, growth was projected according to normative benchmark levels of domestic public expenditure, using a similar methodology as for the Fourth Replenishment domestic financing forecast. Accordingly, domestic expenditure was normalized in relation to a measure of economic capacity and a measure of disease burden.

Economic capacity was represented by per-capita total government recurrent expenditure (across all sectors). This represents the total fiscal space available to government in each year for all purposes, and includes domestic grants as well as foreign and domestic borrowing. The ability to pay measure establishes a benchmark for government prioritization compared to other countries.

Disease burden was represented in three different ways: a) the same measures used in the Fourth Replenishment domestic financing forecast methodology (number of people living with HIV, TB incidence, malaria population at risk); b) measures used for the Global Fund's allocation model (which

³³ For South Africa, commitments for HIV and TB were available until 2020, therefore in this case the expanded period of commitments data were used.

for HIV was the same as a)); and c) the resource need, to account for aspects not captured by the burden, such as differences in intervention unit costs across countries.

The rationale for establishing a benchmark is the presumption that countries with greater ability to pay will be able to spend more, and that expenditure will also vary in relation to the size of the burden posed by each disease.

To set these benchmarks, countries were ranked according to a Domestic Investment Priority Index (DIPI), which scales domestic disease-specific spending according to disease burden and ability to pay, as follows:

$$DIPI = \left[\frac{\left(\frac{\text{disease specific spending}}{\text{disease burden indicator}} \right)}{\text{per - capita government expenditure budget}} \right]$$

Then, three scenarios were explored:

- 1) Domestic investments grow in line with the International Monetary Fund (IMF) forecast of per-capita general government expenditure.
- 2) Domestic investments grow in line with the IMF forecast, and in addition, governments with a below-median value of the DIPI increase the priority they give to funding the disease such that they reach the median level by 2030.
- 3) Domestic investments grow in line with the IMF forecast, and in addition, governments with a below-75th percentile value of the DIPI index increase the priority they give to funding the disease such that they reach the 75th percentile by 2030.

Scenario 3 was chosen to reflect the ambitious yet feasible growth required to address resource needs for the three diseases. For HIV, the projections under Scenario 3 closely match UNAIDS targets for domestic financing as a share of resource need by 2020: 14 percent for low-income countries, 45 percent for lower-middle-income countries and 95 percent for upper-middle-income countries. In all three diseases, the difference between the three scenarios was small. The malaria projections had the largest spread between scenarios 1 and 3, with 30 percent and 34 percent of the full need covered by domestic funds, respectively.

Under the high-growth scenario, domestic financing is estimated to contribute a total of US\$41 billion during 2017-2019. Here, governments would finance 42 percent of the overall response to the three diseases.

The commitments provided in concept notes up to 2017 confirm domestic financing trends projected in the last replenishment. Over 2014-2016, annual growth rates are extremely similar: the replenishment forecast projected average annual growth rates of 10 percent for TB, 20 percent for malaria and 11 percent for HIV, respectively, over 2014 to 2016, while the commitments received to date indicate average annual growth in domestic resources of 10 percent for TB, 20 percent for malaria and 8 percent for HIV over the same period. The difference for HIV is explained mostly by South Africa, which accounts for 45 percent of the domestic financing commitments. The Fourth Replenishment projections were produced prior to procurement reforms in South Africa, which brought down ARV costs by 58 percent. Excluding South Africa, the average annual growth rate of counterpart financing commitments for HIV is higher, at 12 percent.

Non-Global Fund external financing forecast 2017-2019

Non-Global Fund external financing was estimated using IHME's Development Assistance for Health (DAH) data. In aggregate, the latest available DAH estimates are for 2014. However, 2013 and 2014 estimates are modeled from 2012 country-level data. As country-level estimates of external financing were required to model the impact of projected funds, the 2012 estimates were used. Financing for global-level initiatives was excluded, as well as financing sourced by the Global Fund. In total, among Global Fund-eligible countries, non-Global Fund external financing was estimated to be US\$7.8 billion in 2012, of which US\$6.3 billion was for HIV, US\$1.0 billion for malaria and US\$0.5 billion for TB.

These aggregate amounts of non-Global Fund external financing are assumed to remain constant over the 2017-2019 period. For the previous replenishment's forecast, other external funding was also assumed to remain constant.

Under these assumptions, over the 2017-2019 period, total non-Global Fund external financing is estimated to be US\$23.4 billion. This is slightly lower than the US\$24.2 billion assumed for the Fourth Replenishment, where estimates were based on 2011 levels of donor financing submitted by WHO and UNAIDS.

Annex 3: Summary of Impact Modeling Methodology

To estimate the potential outcomes and impact that could be achieved from the projected available funding in Global Fund-eligible countries over the 2017-2019 replenishment period, the Global Fund conducted a joint exercise with the teams that produced the impact modeling underlying the global plans, in collaboration with the technical partners that developed the plans, namely WHO's Global Malaria Program, UNAIDS and the Stop TB Partnership. This modeling exercise estimated the outcomes and impact under scenarios optimizing the allocation of all funding combined, while remaining aligned with the assumptions for the global plans.

Description of scenarios and key assumptions

Three key scenarios were considered:

1. **Optimal allocation:** this scenario optimally allocates the projected funding in each of the models, with the common assumptions that all external funding can be reallocated across countries and funding from all sources (Global Fund, other external, domestic) can be reallocated within countries.
2. **Constant coverage:** this scenario provides a counterfactual to demonstrate the consequences of maintaining the status quo. These are consistent with the scenarios presented in the global plans on maintaining coverage at constant levels (2013 levels for HIV, 2015 levels for TB and malaria).
3. **Null:** this scenario models the impact of having no interventions, to determine the estimates of lives saved (which is calculated on the difference between deaths under the optimal scenario and deaths under the null scenario). Key assumptions in each of the disease are:
 - a. HIV: behavior change intervention coverage maintained from 2016 onward, no new program circumcisions after 2016 and removal of treatment in 2017
 - b. TB: No interventions after 2015
 - c. Malaria: no vector control interventions and low levels of treatment (returning to malaria case incidence and deaths rates of 2000 levels)

The financing amounts are for domestic, Global Fund and other external funding sources. Methods for the domestic and other external funding projections are presented in Annex 2. Global Fund financing amounts are estimated based on existing funds available at the end of 2016 (based on the latest financial forecast available as of September 2015) plus the US\$13 billion replenishment ask, which for the purposes of this exercise is distributed across diseases by the upfront split applied in the Global Fund's allocation model (50 percent to HIV, 32 percent to malaria, 18 percent to TB) and excludes operational expenses.

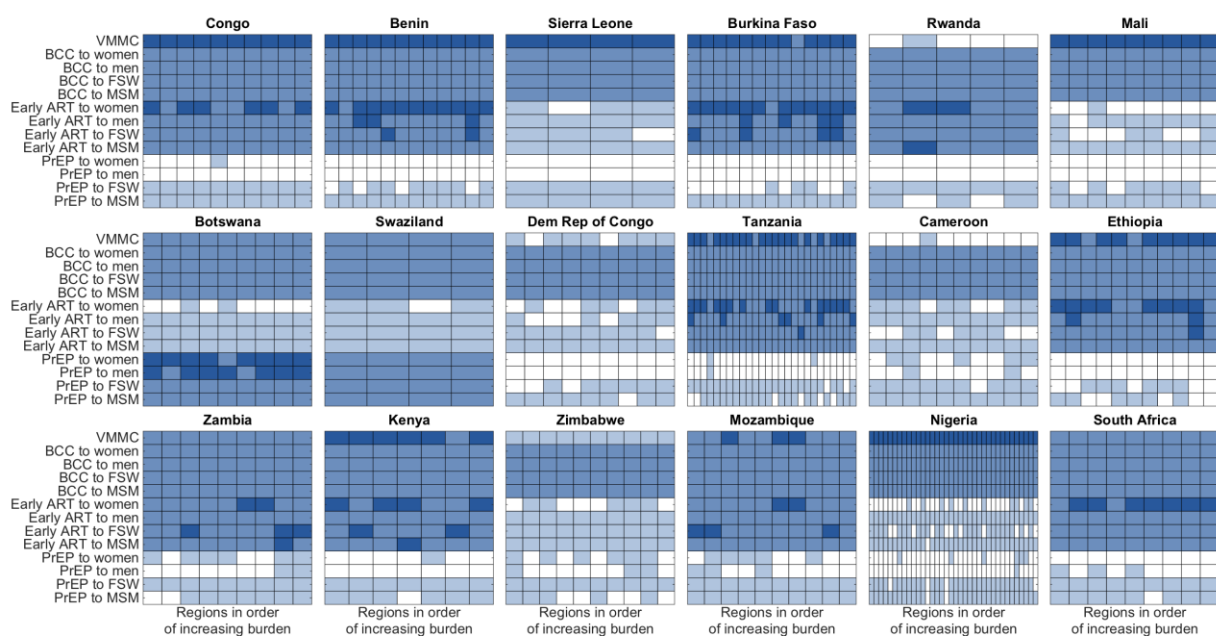
Scenarios were modeled over the 2017-2020 period to account for the time lag from funds committed to funds spent in countries (and resultant impact). Lives saved estimates are presented for a three-year period to remain consistent with what the replenishment amount could achieve. Point estimates are presented for 2020 to compare against the milestones in the global plans.

The number of lives saved is estimated by applying the Global Fund's historically reported share of total lives saved by the disease control programs. Projected cases and deaths are national estimates aggregated across all countries eligible for Global Fund funding.

Overview of models and methods

HIV: For all Global Fund eligible countries, scenarios were modeled by Avenir Health using the Goals model, which was set up for the 28 countries in *Fast-Track* (representing almost 90 percent of all HIV infections). The interventions with direct impact included are the same as in *Fast-Track*: ARV therapy, voluntary medical male circumcision, programs to prevent mother-to-child transmission (PMTCT), condom promotion and distribution, outreach services to key populations (sex workers, men who have sex with men, people who inject drugs), opioid substitution therapy, pre-exposure prophylaxis (for adolescents, sero-discordant couples and key populations in selected countries), and behavior change communications. The cost-effectiveness was ranked for each intervention and geographic setting (at country-level). Then, funds were allocated in order from the most cost-effective intervention and geographic setting to the least cost-effective. Coverage targets are the same as used in *Fast-Track*. As not all of the Global Fund-eligible countries were modeled, each of the remaining countries was mapped to one of the 28 modeled countries to estimate the impact and cost-effectiveness of interventions. Costs included in the *Fast-Track* estimates besides the 12 direct-impact interventions (including community mobilization, testing, enabling environment and program support) are accounted for by applying a constant multiplier to the intervention costs. Funds were optimized under two separate objectives: to maximize infections averted and to maximize lives saved. Under the first objective, a minimum level of treatment was assured by allocating funds to treat patients with a CD4 count of 350 or less; the remaining funds were allocated according to the cost-effectiveness rank of interventions. Under the second objective, available funding was prioritized to fully fund treatment need to reach the *Fast-Track* target and the remaining funds were used for prevention interventions. Both sets of results are presented.

Figure 10: Optimal allocation of resources (per model) to interventions and sub-national geographies for 18 African countries. Each country box shows the subnational regions across x-axes, ordered by increasing HIV burden. Interventions, by population groups, are shown along the y-axes. Each grid square therefore represents a particular intervention among a risk group in a subnational region. In moving to the 'targeted' allocation scenario, interventions were either removed (dark blue), maintained (mid blue), or added (light blue).



HIV: A complementary exercise was conducted to estimate the additional impact of moving from current patterns of investment to targeting funding at the subnational level and by key population groups, using the pan-Africa HIV modeling framework developed by Imperial College. This model has been developed for 18 African countries³⁴ and models the dynamics of sexual HIV transmission in the general population and key populations at the subnational resolution (administrative level 1). This results in 203 subnational models, which comprise a framework that captures 80 percent of the HIV burden across sub-Saharan Africa. As with the Avenir method, the Imperial model prioritized scale-up of ARV therapy for those in greatest need, used the *Fast-Track* estimates of unit costs for prevention interventions, and applied the same multiplier to intervention costs to factor in costs beyond the interventions modelled that are included in the HIV resource need. Figure 10 depicts the pattern from optimal allocation of resources to interventions and sub-national geographies for the 18 African countries.

TB: Avenir Health estimated the epidemiological impact by applying the TB Impact Model and Estimates (TIME) model, which was used to capture the potential impact achieved by implementing the Global Plan to End TB. The model was applied in nine countries, of which seven are Global Fund-eligible. To obtain results for the full subset of Global Fund-eligible countries modeled in the Global Plan, the estimated impact for the seven countries was then applied to TB epidemiological trends for the remaining eligible countries using a statistical method of extrapolation. Unit cost estimates were consistent with those used for the global plan. The model prioritized external funding by allocating resources to countries in descending order of cost-effectiveness. This “fully fund first” approach was done until the available external resources were exhausted. To give due priority to TB programs dealing with multidrug-resistant TB burden, which is likely to be relatively less cost-effective, a weight factor was allocated to countries with high multidrug-resistant TB burden. A key limitation to note is that, unlike the HIV and malaria models used, the TIME model in its current state (and due to current subnational data limitations) cannot optimize funding by intervention, sub-national level or population group.

Malaria: Impact modeling was done using the malaria transmission model developed at Imperial College, which contributed to the development of the WHO Global Technical Strategy for Malaria. The model optimizes the allocation of projected funding by varying coverage of interventions at the subnational level (first-level administrative unit) for the 66 modeled Global Fund-eligible countries that have stable *Plasmodium falciparum* transmission. First, transmission was stratified according to three characteristics: baseline endemicity, seasonality and vector species. Then, for all strata, all possible combinations were assessed for coverage of: vector control (long-lasting insecticidal nets, indoor residual spraying), seasonal malaria chemoprophylaxis and treatment. Two constraints were placed on intervention package selections: 1) to ensure a level of equity in global access to treatment, treatment coverage was set at a minimum level of 60 percent; 2) to account for operational feasibility, the scale up of vector control distribution was capped at either 90 percent or 80 percent, which translate to average access levels over a three-year net distribution cycle of 77 percent and 68 percent, respectively. Under these constraints, the projected financing was distributed, with the algorithm resulting in funds being prioritized towards low-coverage and high-burden sub-national units. Costs were closely aligned to those used in the Malaria Global Technical Strategy. Those countries with unstable *P. falciparum*, *P. vivax* or that were in prevention of re-introduction stages were not modeled. Costs for countries not-modeled, taken from the Global Technical Strategy, were accounted for when budgeting for the modeled countries.

³⁴ Benin, Botswana, Burkina Faso, Cameroon, Congo, Democratic Republic of the Congo, Ethiopia, Kenya, Mali, Mozambique, Nigeria, Rwanda, Sierra Leone, South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe.

Annex 4: Number of Services Supported by the Global Fund: Essential Indicators 2005 to 2014

NUMBER OF SERVICES SUPPORTED BY THE GLOBAL FUND (CUMULATIVE)

	MILLIONS, IF NOT SPECIFIED		
	2005	2010	2014
HIV			
Treatment: People currently receiving ARV therapy	0.4	3.2	8.1
Associated Infections: People receiving treatment for sexually transmitted infections	0.58	11	22
Basic care and support services provided to orphans and other vulnerable children	0.53	5.6	7.5
Condoms distributed, billions	0.31	3.1	5.1
Counseling and testing encounters	6.9	173	423
HIV-positive pregnant women receiving ARV prophylaxis for PMTCT	0.12	1.1	3.1
TB			
Treatment: people with access to DOTS (smear-positive)	1.5	8.2	13
HIV/TB - Associated Infections: People receiving treatment for TB/HIV	0.02	3.4	13
People treated for multidrug-resistant TB, thousands	7.6	52	210
MALARIA			
Prevention: Insecticide-treated nets distributed	12	194	548
Prevention: Structures covered by indoor residual spraying	4.5	36	58
Treatment: Cases of malaria treated	12	212	515
CROSS-CUTTING			
Community outreach prevention services (behavior change communications)	13	211	462
People receiving care and support	0.8	13	28
"Person episodes" of training for health or community workers	1.7	14	16