

# Does the Money Match the Message?

*Current Practice in Allocation of Aid for Tuberculosis and  
Implications for the U.S. Government*



## **AUTHORS**

**Amanda Glassman**

**Victoria Fan**

*A Report of the CSIS Global Health Policy Center*

JUNE 2014

PART OF THE CSIS SERIES ON TUBERCULOSIS

**CSIS**

CENTER FOR STRATEGIC &  
INTERNATIONAL STUDIES



# Does the Money Match the Message?

Current Practice in Allocation of Aid for Tuberculosis and  
Implications for the U.S. Government

*Authors*

Amanda Glassman

Victoria Fan

A Report of the CSIS Global Health Policy Center

June 2014

CSIS | CENTER FOR STRATEGIC &  
INTERNATIONAL STUDIES

## **About CSIS**

For over 50 years, the Center for Strategic and International Studies (CSIS) has worked to develop solutions to the world's greatest policy challenges. Today, CSIS scholars are providing strategic insights and bipartisan policy solutions to help decisionmakers chart a course toward a better world.

CSIS is a nonprofit organization headquartered in Washington, D.C. The Center's 220 full-time staff and large network of affiliated scholars conduct research and analysis and develop policy initiatives that look into the future and anticipate change.

Founded at the height of the Cold War by David M. Abshire and Admiral Arleigh Burke, CSIS was dedicated to finding ways to sustain American prominence and prosperity as a force for good in the world. Since 1962, CSIS has become one of the world's preeminent international institutions focused on defense and security; regional stability; and transnational challenges ranging from energy and climate to global health and economic integration.

Former U.S. senator Sam Nunn has chaired the CSIS Board of Trustees since 1999. Former deputy secretary of defense John J. Hamre became the Center's president and chief executive officer in 2000.

CSIS does not take specific policy positions; accordingly, all views expressed herein should be understood to be solely those of the author(s).

© 2014 by the Center for Strategic and International Studies. All rights reserved.

Center for Strategic & International Studies  
1616 Rhode Island Avenue, NW  
Washington, DC 20036  
202-887-0200 | [www.csis.org](http://www.csis.org)

# Does the Money Match the Message?

## Current Practice in Allocation of Aid for Tuberculosis and Implications for the U.S. Government

Amanda Glassman and Victoria Fan<sup>1</sup>

### Introduction

Despite the availability of highly cost-effective diagnosis and treatment options, tuberculosis (TB) remains a major global public health problem. In 2011, there were an estimated 8.7 million new cases of TB (of which 13 percent were coinfecting with HIV) and 1.4 million deaths.<sup>2</sup> Significant efforts are being made to combat TB—multilaterally through the World Health Organization’s (WHO) Stop TB Partnership and the Global Fund to Fight AIDS, Tuberculosis and Malaria (henceforth “Global Fund”) and bilaterally, specifically through the U.S. government.

Box 1 lays out the respective strategic goals for Stop TB, the Global Fund, and the U.S. government. Although the U.S. goals support the Stop TB Partnership Goals, specifically the 50 percent reduction in TB deaths and burden by 2015, there are differences of emphasis.<sup>3</sup> For the United States, international control of TB—and in particular multidrug-resistant TB (MDR-TB)—is a priority, in order to minimize the domestic U.S. burden.<sup>4</sup> The U.S. government goals explicitly highlight service-delivery targets and MDR-TB, while Stop TB focuses on incidence and mortality of TB in general.<sup>5</sup> The United States also focuses on TB internationally as a means to support the U.S. government’s flagship global health priority—HIV/AIDS prevention and treatment through PEPFAR—recognizing that TB is the leading cause of death among people living with HIV.

---

<sup>1</sup> Amanda Glassman is senior fellow and director of global health policy at the Center for Global Development in Washington, DC. Victoria Fan is a research fellow at the Center for Global Development.

<sup>2</sup> World Health Organization (WHO), *Global Tuberculosis Control, 2012* (Geneva: WHO, 2012), 1.

<sup>3</sup> U.S. Agency for International Development (USAID) et al., *Accelerating Impact: Expanding Access to Care: U.S. Government Report on International Foreign Assistance for TB FY 2011/2012* (Washington, DC: USAID, 2013), 2, [http://www.usaid.gov/sites/default/files/documents/1864/tb\\_report2013.pdf](http://www.usaid.gov/sites/default/files/documents/1864/tb_report2013.pdf); and USAID et al., *Lantos-Hyde United States Government Tuberculosis Strategy* (Washington, DC: USAID, March 2010), 3–5, [http://pdf.usaid.gov/pdf\\_docs/PDACP707.pdf](http://pdf.usaid.gov/pdf_docs/PDACP707.pdf).

<sup>4</sup> Centers for Disease Control and Prevention (CDC), “CDC’s Role in Global Tuberculosis Control,” last modified March 19, 2012, <http://www.cdc.gov/tb/topic/globaltb/role.htm>.

<sup>5</sup> USAID et al., *Accelerating Impact*, 5; and USAID et al., *Lantos-Hyde United States Government Tuberculosis Strategy*, 8–9.

**Box 1. Goals for the Stop TB Partnership, the Global Fund,  
and U.S. Government TB Program**

*Stop TB Partnership, 2011–2015<sup>6</sup>*

- TB in the Millennium Development Goals (set for 2015)
  - Goal 6: Combat HIV/AIDS, malaria, and other diseases
  - Target 6c: Halt and begin to reverse the incidence of malaria and other major diseases
  - Indicator 6.9: Incidence, prevalence, and death rates associated with TB
  - Indicator 6.10: Proportion of TB cases detected and cured under directly observed treatment strategy (DOTS)
- Stop TB Partnership Targets (set for 2015 and 2050)
  - By 2015: Reduce prevalence and death rates by 50 percent compared with their levels in 1990
  - By 2050: Eliminate TB as a public health problem, defined as a global incidence of active TB of less than one case per 1 million population

*Global Fund Strategy Framework, 2012–2016 (based on Stop TB Partnership)*

- 4.6 million DOTS treatments (annual)
- 21 million DOTS treatments (over 2012–2016)

*U.S. Government TB Program, 2009–2014<sup>7</sup>*

- Contributing to a 50 percent reduction in TB deaths and disease burden from the 1990 baseline;
- Sustaining or exceeding the detection of at least 70 percent of sputum smear-positive cases of TB and successfully treating at least 85 percent of cases detected in countries with established U.S. government tuberculosis programs;
- Successfully treating 2.6 million new sputum smear-positive TB patients under DOTS programs by 2014, primarily through support for needed services, commodities, health workers, and training, and additional treatment through coordinated multilateral efforts; and
- Diagnosing and initiating treatment of at least 57,200 new MDR-TB cases by 2014 and providing additional treatment through coordinated multilateral efforts.

Achieving the Stop TB Partnership’s goals will not be easy. Between 2011 and 2015, an estimated \$46.7 billion—about \$10 billion annually—is required to implement the measures necessary to control TB as a public health problem in low- and middle-income countries (LMIC).<sup>8</sup>

<sup>6</sup> WHO, Stop TB Partnership, *The Global Plan to Stop TB: 2011–2015* (Geneva: Stop TB Partnership, n.d.), 3, [http://www.stoptb.org/assets/documents/global/plan/TB\\_GlobalPlanToStopTB2011-2015.pdf](http://www.stoptb.org/assets/documents/global/plan/TB_GlobalPlanToStopTB2011-2015.pdf).

<sup>7</sup> USAID et al., *Lantos-Hyde United States Government Tuberculosis Strategy*, 8.

<sup>8</sup> Stop TB Partnership, “The Global Plan to Stop TB: 2011–2015: Fast Facts,” 1, [http://www.stoptb.org/assets/documents/global/plan/stopTB2011\\_insert\\_FINAL.pdf](http://www.stoptb.org/assets/documents/global/plan/stopTB2011_insert_FINAL.pdf).

The money actually available is far less. LMIC governments, which fund their own domestic programs, currently cover most of global spending—about \$3.9 billion per year, mostly in Brazil, Russia, India, China, and South Africa.<sup>9</sup> The Institute for Health Metrics and Evaluation (IHME) estimated that international aid for TB programs reached a peak of \$860 million in 2009 (around 4 percent of total aid for health), based on OECD data as well as data collected from private foundation and nongovernmental organizations (NGOs) (Figure 1). Although TB funding has increased over time, TB funding is both lower and has grown more slowly than funding for HIV/AIDS or malaria, suggesting that it carries lower financial and political priority (Figure 1).

Knowing the full financial flows by each donor to each country for TB is crucial to ensure value for money.<sup>10</sup> Another study, published in *The Lancet*, reviewed country reports on spending to WHO Global TB Program and found that donor TB funding reached \$523 million in 2011.<sup>11</sup> The discrepancy between IHME and WHO Global TB Program data may arise not only from use of different years, but also because countries may not be fully aware of spending that occurs at the international or bilateral level or through international NGOs, some funding is not dedicated to in-country programs, flows from the Bill & Melinda Gates Foundation are not recorded in in-country reporting to the WHO, and World Bank loans are recorded as donor funding rather than domestic funding.

At current commitment levels for TB, the U.S. government has limited leverage. Only 12 percent of total tuberculosis funding was international through donors, and as much as 80 percent of donor TB funding has been channeled through the Global Fund. By comparison, U.S. bilateral assistance on TB amounted to \$390 million in 2012, mostly channeled through the U.S. Agency for International Development (USAID), although the President's Emergency Plan for AIDS Relief (PEPFAR) also allocated about \$160 million of its own funds to address TB/HIV.<sup>12</sup>

Although U.S. government TB funding doubled between 2007 and 2010, growth was still slower than for HIV/AIDS and malaria—which is not surprising given existing disease-specific presidential initiatives (i.e., HIV/AIDS is supported through [PEPFAR] and malaria is supported through the President's Malaria Initiative [PMI]).

In FY2013, U.S. government funding for global health leveled off, with just under \$400 million available for TB, or about 5 percent of total U.S. health aid.<sup>13</sup> Of this amount, approximately \$232 million was channeled through USAID, committed through approximately 85 agencies, and about \$160 million through PEPFAR.

---

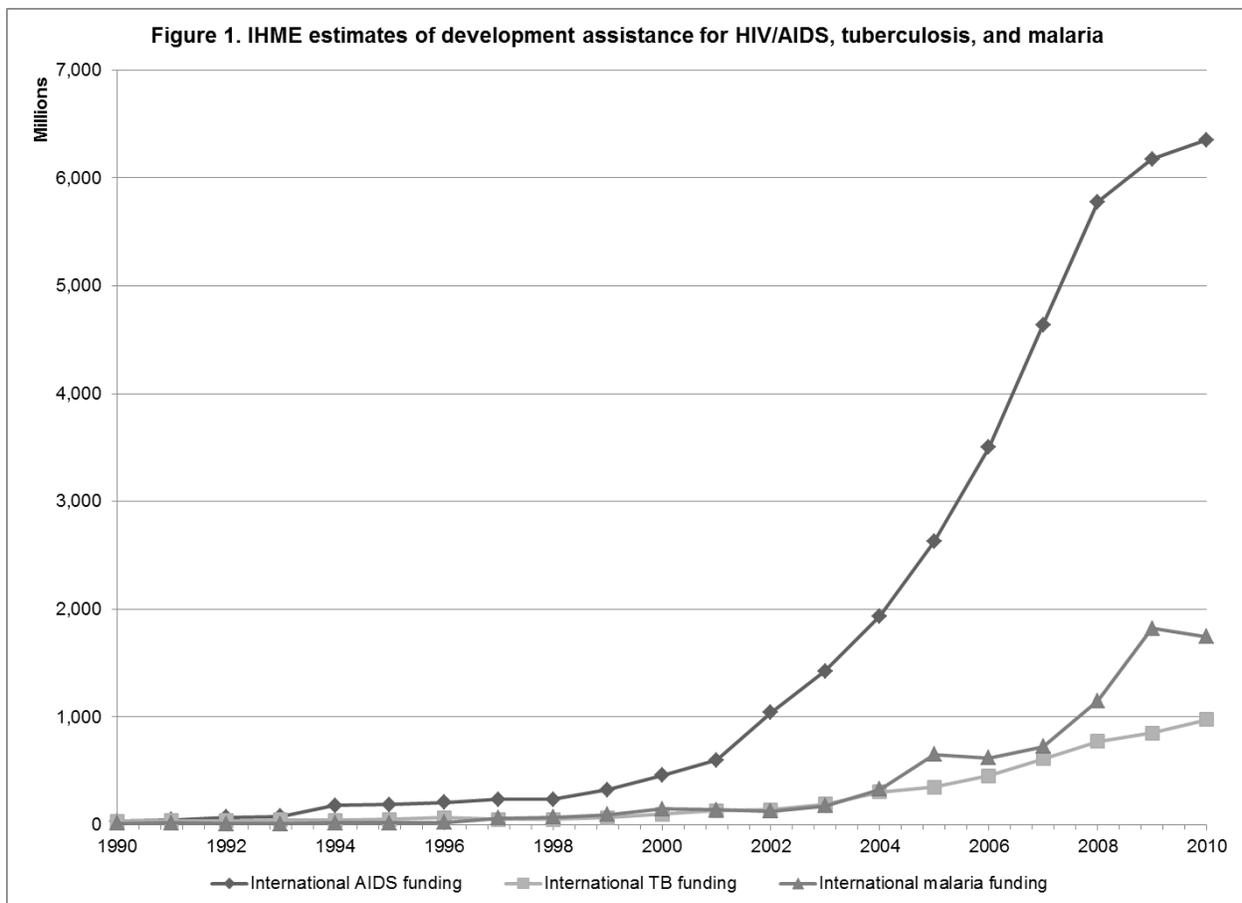
<sup>9</sup> Katherine Floyd et al., “Domestic and Donor Financing for Tuberculosis Care and Control in Low-Income and Middle-Income Countries: An Analysis of Trends, 2002–11, and Requirements to Meet 2015 Targets,” *Lancet Global Health* 1, no. 2 (August 2013): e105–e115.

<sup>10</sup> Amanda Glassman, with Victoria Fan and Mead Over, *More Health for the Money: Putting Incentives to Work for the Global Fund and Its Partners* (Washington, DC: Center for Global Development, 2013), <http://www.cgdev.org/sites/default/files/More-Health-for-the-Money.pdf>.

<sup>11</sup> Floyd et al., “Domestic and Donor Financing for Tuberculosis Care and Control in Low-Income and Middle-Income Countries,” e111.

<sup>12</sup> Andrea A. Howard et al., “PEPFAR Support for the Scaling Up of Collaborative TB/HIV Activities,” *Journal of Acquired Immunodeficiency Syndrome* 60, suppl. 3 (August 15, 2012): S136–S144.

<sup>13</sup> Kaiser Family Foundation, “Budget Tracker: Status of U.S. FY13 Funding for Key Global Health Related Accounts,” December 11, 2013, 1, [http://kaiserfamilyfoundation.files.wordpress.com/2013/12/8045\\_fy2013.pdf](http://kaiserfamilyfoundation.files.wordpress.com/2013/12/8045_fy2013.pdf).



Source: Institute for Health Metrics and Evaluation (IHME), "Development Assistance for Health Database 1990–2010," IHME, 2013.

Given the position of U.S. government TB funding relative to other donor and domestic sources, the United States has three ways to influence allocation—and its impact on policy goals:

- Direct investments;
- Involvement in the replenishment, governance, and technical policy of the Global Fund and WHO/Stop TB; and
- Technical assistance support to high-burden lower middle-income countries.

This paper discusses why allocation matters for impact; examines what is known about allocation of funding and impact at the Global Fund—the largest source of external assistance for TB; and recommends ways for the U.S. government to improve multilateral spending for TB.<sup>14</sup>

<sup>14</sup> A companion paper in this series will discuss a selection of middle-income countries separately. See Katherine E. Bliss, *Building New Relationships on TB Control, One BRIC at a Time* (Washington, DC: CSIS, forthcoming).

## Why Does Allocation Matter for Programmatic Impact?

Achieving efficiency in allocation means selecting countries and interventions that achieve maximum health impact within a given budget constraint. It requires careful tailoring of interventions to geographical and epidemiological context. External funders such as the U.S. government or the Global Fund inevitably allocate resources according to a set of criteria. These criteria may be *explicit*, as in PEPFAR's 10 percent earmark for programs targeting orphans and vulnerable children, or *implicit*, as in the Global Fund's historic approach to grant-making, where allocations were based on expressions of country demand. Implicit allocation can result in a lack of priority to countries that are important to the reduction global TB burden, where cost-effective interventions could be deployed inexpensively or efficiently, or funding more vocal demands of urban residents first, for example.

U.S. government TB goals must be prioritized in order to judge whether available TB funding is sufficient, or whether current funding could be allocated more consistently with goals across and within countries. Which is most important to the U.S. government—reduced TB burden overall or reduced MDR-TB? Where can most impact be achieved against these goals, whichever is given priority? Against what goal should interventions be deployed? How much does treatment cost vary by target population, delivery platform, and country? What is the potential mortality impact in these same contexts? What are the tradeoffs between goals and programmatic strategies?

These issues have proven particularly thorny in the case of global TB. As one CSIS working group member noted:

I wish it were this simple, to just say TB should prioritize. But, in my mind, it is not this simple. The choice is not between reduced TB burden and reduced MDR-TB burden. Attention and support are needed to both “general” TB control and MDR-TB control simultaneously—neither can wait, and the approach cannot be one or the other, or one followed by the other. Without support for improved general TB control, programs will create more MDR-TB. Without support to improve MDR-TB treatment and control (to address a growing MDR-TB epidemic), we could potentially face a situation where we will not be able to stem the tide of MDR-TB, in the extreme, creating a situation where we do not have infrastructure, resources, and drugs to treat MDR-TB, or if MDR-TB treatment and control is mismanaged, we could end up with increasing XDR-TB, which has no effective treatment at present. I would respectfully submit that this is not an either/or situation. Both are both important to address, and we need to find a way to do this.

In a resource-constrained environment where there are disease-specific goals, however, it is nonetheless necessary to optimize funding. If there were sufficient funding to meet all TB goals, there would be no need to prioritize. However, given the funding gap noted earlier, it remains necessary to understand where and how the U.S. government can be most effective. This paper *does* argue for greater funding for TB programs so that as many of these difficult decisions as possible can be avoided. Further, the paper *does not* argue that one or the other goal is more important, nor can it assess the tradeoffs between funding prevention, high-quality and scaled

diagnosis and treatment of drug-susceptible TB, or diagnosis and treatment of MDR-TB. The paper rather argues that *whatever the goals may be, there is a need to deploy funding in a way that optimizes impact against that goal.*

This is a challenge made difficult by the fact that most funders—whether global or national—share only limited information on their spending and health care, particularly with respect to the interventions and commodities financed by its grants, and the populations to which those interventions are targeted.<sup>15</sup> For each country, an individual donor agency may be aware of its own distribution of funding by country, population, and intervention mix; however, this information is rarely available to the public, to other donor agencies, and sometimes even to the country itself.

As the Center for Global Development highlighted in its 2013 *More Health for the Money* report, it is impossible to assess the allocative efficiency of a funder's investments or a country's intervention mix without information on the distribution of investments—both by intervention type and by key population.<sup>16</sup> The Institute of Medicine's 2012 PEPFAR evaluation report notes that even recipient countries are at a loss for “where (geographically) the money is going and what services are being supported so that they can identify unmet needs.” Absent full transparency, as indicated above by the vastly differing estimates of international donor assistance for TB, suboptimal allocations are likely to prevail.

To understand the potential that improved efficiency in allocation might have, policymakers need a basic understanding of the costs and benefits of different interventions, as well as economic and epidemiological models that optimize for impact against the stated disease objective, as well as an understanding of the affordability of different options to both the U.S. government and to recipient countries.

Exercises to quantify the cost-effectiveness of different interventions have previously been conducted through the Disease Control Priorities project (<http://www.dcp-3.org/>). This work finds that treatment is crucial for disease control, and for preventing further disease spread, and thus represents a major strategy until an effective vaccine is available. In the case of TB, directly observed treatment (DOT) against TB is recommended the most cost-effective treatment.<sup>17</sup> While DOT is considered a “best buy” in global health, there has been increasing consensus around the value and importance of MDR-TB treatment, because the cost per Disability-Adjusted Life-Year averted for MDR-TB is lower than GDP per capita in all 14 WHO subregions,<sup>18</sup> a crude

---

<sup>15</sup> Glassman et al., *More Health for the Money*.

<sup>16</sup> Victoria Fan et al., “HIV/AIDS Intervention Packages in Five Countries: A Review of Budget Data,” CGD Policy Paper 033, Center for Global Development, October 2013, 11, <http://www.cgdev.org/publication/hivaids-intervention-packages-five-countries-review-budget-data>.

<sup>17</sup> Note, however, that a 2009 Cochrane Systematic Review finds no evidence that DOT is more effective than self-administration for outcomes of cure or completion of treatment; see Jimmy Volmink and Paul Garner, “Directly Observed Therapy for Treating Tuberculosis (Review),” *Cochrane Review* (2009), <http://www.thecochranelibrary.com/userfiles/coch/file/CD003343.pdf>. However, DOTS continues to be the official guidance of the WHO.

<sup>18</sup> Christopher Fitzpatrick and Katherine Floyd, “A Systematic Review of the Cost and Cost Effectiveness of Treatment for Multidrug-Resistant Tuberculosis,” *PharmacoEconomics* 30, no. 1 (January 2012): 63–80.

cost-effectiveness rule for decision-making (though note that for HIV coinfecting patients, both TB treatment and ART are required).

In addition to studies that estimate the cost-effectiveness of interventions, a variety of studies rely on epidemiologic, economic, and demographic modeling to help illuminate the costs and benefits of different disease-control strategies, as well as tradeoffs among them. Given a TB control goal or goals and limited funding, how should the various interventions be combined? A 2007 World Bank publication assessed the magnitude of the economic impacts of TB in sub-Saharan Africa, estimating that the economic benefits in sub-Saharan Africa of moving from no DOT to the Global Plan were \$217 billion, compared to a \$12 billion cost over the 2006–2015 period without DOT. The economic benefits were estimated to exceed the costs by a factor of 10, although these findings pre-dated the wider emergence of MDR-TB, as well as a systematic review on the effectiveness of DOT as compared to self-administration.<sup>19</sup>

A more recent study, Korenromp et al. (2012), that focused on the Global Fund spending estimates the economic costs and health benefits in different regions, and finds that allocations prioritizing Africa and TB/HIV coinfection could increase the number of lives saved.<sup>20</sup> The study finds that Africa has the highest immediate return on TB investment, because of its high prevalence of TB/HIV coinfection and relatively low per-patient costs. An increased donor focus on sub-Saharan Africa might also be reasonable given the 82 percent rise in TB funding need from 2010 to 2015, which far surpasses most African countries' ability to expand domestic contributions.

Korenromp et al. also examine the prospect of allocating funding with the control of MDR-TB as the main goal, finding that this policy would reduce lives saved compared to the base case, because the high per-patient cost for MDR-TB treatment compared to DOTS and the high per-patient costs in Eastern Europe and Central Asia (EECA), the region with the highest proportion of MDR-TB cases, reduce the total number of treatments affordable for the given amount of total funding. The study also finds that, without price changes, MDR-TB treatment cost will be a major driver of the costs of global TB control. The authors write:

[T]he affordability of TB control globally will critically depend on the ability in EECA to improve national program effectiveness and efficiency (for both DOTS and MDR-TB), by transitioning from the current hospital-centered service delivery to WHO-recommended cost-effective implementation systems based on good-quality DOTS delivered through primary outpatient facilities, thus improving cure rates and preventing the emergence of MDR-TB.

---

<sup>19</sup> Ramanan Laxminarayan et al., *Economic Benefit of Tuberculosis Control*, Policy Research Working Paper 4295 (Washington, DC: World Bank, August 2007), 16–17, <http://www.who.int/management/EconomicBenefitofTuberculosisControl.pdf>. It is worth noting as well that DOT against (drug-sensitive) TB has been found to be more cost-effective than treatment for antiretroviral treatment for HIV/AIDS. See Frank Cobelens et al., “Research on Implementation of Interventions in Tuberculosis Control in Low- and Middle-Income Countries: A Systematic Review,” *PLoS Medicine* 9, no. 12 (2012): e1001358.

<sup>20</sup> Eline L. Korenromp et al., “Implementing the Global Plan to Stop TB, 2011–2015—Optimizing Allocations and the Global Fund’s Contribution: A Scenario Projections Study,” *PloS One* 7, no. 6 (2012): e38816, 7.

While more analysis is needed to understand whether assumptions on cost and other unknowns are reasonable in a given country context, the Korenromp et al. study does illustrate the potential gains in effectiveness to be had by allocating budgets between and within countries differently.

Several other TB modeling studies<sup>21</sup> navigate the disease's complex dynamics and the costs and benefits of different strategies against them. For example, the number of additional infections generated from a single TB case depends not only on the bacterial load in sputum but also the duration of infectiousness, which in turn is affected by access to health care systems, population susceptibility due to other comorbidities such as HIV/AIDS as well as some chronic diseases and risk factors (alcohol abuse, diabetes, tobacco smoking, undernutrition), and population-dense environments including urban areas, prisons, etc.<sup>22</sup> One study found that typical case detection and treatment methods were insufficient in controlling TB epidemics that have "institutional amplifiers" (i.e., through prisons, mines, or hospitals)<sup>23</sup> and that intensified case finding and therapy was needed to curtail transmission.<sup>24</sup> These studies, therefore, raise the importance of careful allocations to optimize health impacts.

## Global Fund for AIDS, Tuberculosis and Malaria

As noted earlier, the Global Fund is the largest external, nondomestic source of funding in the fight against TB. Between its launch in 2002 and the end of 2011, the Global Fund invested \$2.3 billion in TB grants in 116 countries. In 2010 alone, the Global Fund disbursed \$512 million in TB grants. Historically, based on the Fund's earlier proposal-based model, TB was allocated about 16 percent of the \$15 billion that has been cumulatively disbursed by the Global Fund to date. The competitive proposal system meant that allocations were based on demand, proposal quality, or critical need, but not necessarily targeted to where there was potential for maximum impact.

## Allocations across Countries

Past evidence suggests a mismatch between a country's burden/ability to pay and TB aid allocation. An IHME report of global health funding finds that some low-income countries with the highest TB burdens, such as Ethiopia, Kenya, and Uganda, receive little aid per TB DALY (disability-adjusted life years) compared to wealthier countries such as Botswana and Peru.<sup>25</sup> Russia receives \$21 in TB aid per TB DALY, while China and India receive \$9 and \$5 per DALY, respectively, in spite of similar TB burden and Russia's much higher relative per capita income. These mismatches are not definitive

---

<sup>21</sup> Christopher Dye and Brian G. Williams, "The Population Dynamics and Control of Tuberculosis," *Science* 328, no. 5980 (May 14, 2010): 856–61.

<sup>22</sup> *Ibid.*, 857–59.

<sup>23</sup> Sanjay Basu, David Stuckler, and Martin McKee, "Addressing Institutional Amplifiers in the Dynamics and Control of Tuberculosis Epidemics," *American Journal of Tropical Medicine and Hygiene* 84, no. 1 (January 2011): 30–37.

<sup>24</sup> Sanjay Basu et al., "Averting Epidemics of Extensively Drug-Resistant Tuberculosis," *Proceedings of the National Academy of Sciences of the United States of America* 106, no. 18 (May 5, 2009): 7672–77.

<sup>25</sup> Institute for Health Metrics and Evaluation, *Financing Global Health: The End of the Golden Age?* (Seattle, WA: IHME, 2012), 33, <http://www.healthmetricsandevaluation.org/publications/policy-report/financing-global-health-2012-end-golden-age>.

in arguing for more or less spending, but they can help to benchmark funding levels. Further, as discussed above, there may be gains in shifting toward higher-impact strategies. In our own analyses, we find that Global Fund TB funding within specific countries is highly volatile over time, with an unclear relationship to TB-related deaths.<sup>26</sup>

In 2013, the Global Fund adopted a new funding model.<sup>27</sup> It includes a new formula to be applied to the allocation of replenishment funds between countries, based on disease burden and country income, with the goal of better targeting spending toward high potential-impact countries, consistent with the Strategy Framework goals.

Prior to between-country allocation, however, funds are allocated between diseases. The rationale for the disease split is not available in the public domain, but PEPFAR officials have described the split as “drawing on the Needs Assessment analysis used to come up with the \$15 billion figure needed for replenishment,” which assessed overall resource needs and funding gaps such that “total need within each disease is covered to the same extent.” This resulted in funding being earmarked to 50 percent HIV, 32 percent malaria, and 18 percent TB. (Note that the Stop TB Plan included a 25 percent Global Fund allocation to TB as one of its goals.)

Given a \$12 billion replenishment approved in December 2013, the disease split implies that tuberculosis monies available to distribute among countries come to \$2.16 billion over the 2014–2016 period. Compared to the Global Fund’s 2010 TB disbursements of \$512 million (the most recent year of data available prior to reforms that affected disbursements), the annual amount available for TB given the replenishment has increased by about \$200 million to \$720 million per year, a 40 percent increase with respect to 2010 disbursement amounts. According to the Stop TB Partnership, it is possible that this amount may grow if TB programs are successful in competing for incentive funds, a separate competitive pot of money available for “ambitious proposals.”

To establish the share of TB funding to which a country is entitled, a country’s TB “burden score” is to be divided by the sum of all country TB burden scores (see Figure 2, made available to Aidsplan by the Global Fund Secretariat). TB burden in each eligible country has been defined by technical partners serving on the Global Fund’s Strategy Committee as: “(i) 1 times the HIV negative TB incident cases; (ii) 1.2 times the HIV positive TB incident cases; (iii) 8 times the estimated MDR-TB incidence; (iv) 0.1 times 50 percent of the number of people known to be HIV positive.”<sup>28</sup> This mix of a portion of prevalent and incident TB cases multiplied by the number of HIV cases yields a number that is difficult to interpret.

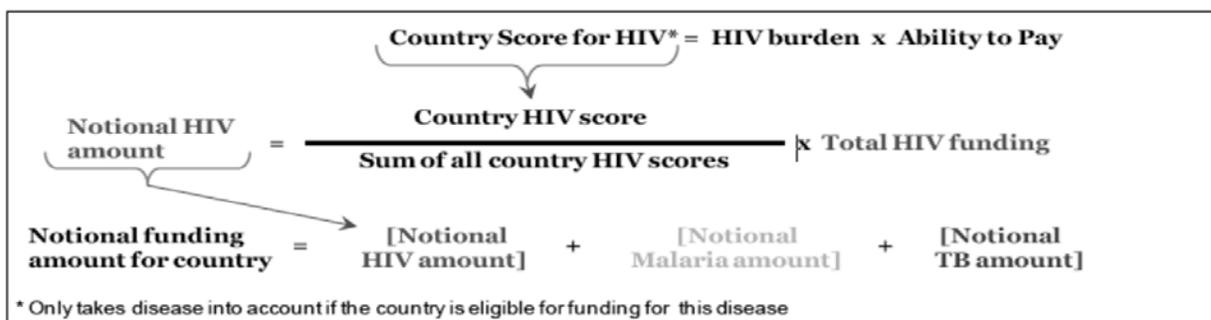
---

<sup>26</sup> Treatment of first-line TB involves several months of treatment—and can extend to a year or more for MDR-TB—suggesting that volatility of commitments and lack of predictability of funding could potentially lead to disrupted treatment courses and in turn greater drug resistance. Further, in countries with limited ability to smooth aid flows using the public budget, a TB program may have difficulty accommodating large year-to-year fluctuations in funding if case load and screening requirements remain more or less stable over the same period.

<sup>27</sup> Global Fund to Fight AIDS, Tuberculosis and Malaria, “Resource Book for Applicants: The Global Fund’s new funding model,” February 10, 2014, [http://www.theglobalfund.org/documents/fundingmodel/FundingModel\\_ResourceBookForApplicants\\_Book\\_en/](http://www.theglobalfund.org/documents/fundingmodel/FundingModel_ResourceBookForApplicants_Book_en/).

<sup>28</sup> See Global Fund Board decision document from November 2013 meeting.

Figure 2. Global Fund's New Funding Model Allocation Formula



Once again, the rationale behind the choice of indicators and attached weights is not publicly available. Evidently, the TB formula gives great weight to MDR-TB cases (eight times the weight of drug-susceptible TB), although the control of MDR-TB is not explicitly stated as a priority health goal of the Global Fund in its new strategy framework. The strategy framework's top-level goals are lives saved and infections prevented, followed by subgoals related to the coverage of DOTS and funding for (but not health improvements resulting from) MDR-TB treatment.

The burden number is then multiplied by a country's "ability to pay," based on a step-wise scale related to a country's average GDP per capita. In terms of implications for TB, the LMIC countries where TB is most concentrated may receive the least funding if country income and disease burden criteria are applied without other adjustments.<sup>29</sup> Further, in 2014 the Russian Federation is not eligible for TB funding by virtue of it being a high-income country, though it has a TB burden deemed "severe" by the Fund. By comparison, however, Romania (upper-middle income) and Ukraine (lower-middle income), with "high" and "severe," are both eligible. Because of the Global Fund's income classification and disease burden, among the Fund's eligibility list of 125 countries, only 4 countries are not eligible for HIV/AIDS support, whereas 12 (including Russia) are not eligible under TB. Perhaps ironically, Russia is eligible for HIV/AIDS but not for TB support because its HIV/AIDS burden is deemed extreme. So-called Band 4 countries (upper-middle-income countries) have ex ante been allocated 7 percent of total Global Fund funding under the new allocation approach. Middle-income countries include many of the Stop TB high-prevalence countries, particularly for MDR-TB.

Once funds are allocated to countries and countries are grouped into bands, there will be an iterative national planning, country dialogue, and concept note preparation period during which the allocations to each disease could be again negotiated, most likely in the context of the Country Coordinating Mechanisms (CCM). The outcome of that subsequent negotiation is obviously unknown before the fact; however, in the absence of CCM reforms, there are vested interests in maintaining the status quo, even if technical partners convincingly justify alternative allocation schemes. The Technical Review Panel, other internal review processes within the Secretariat, and

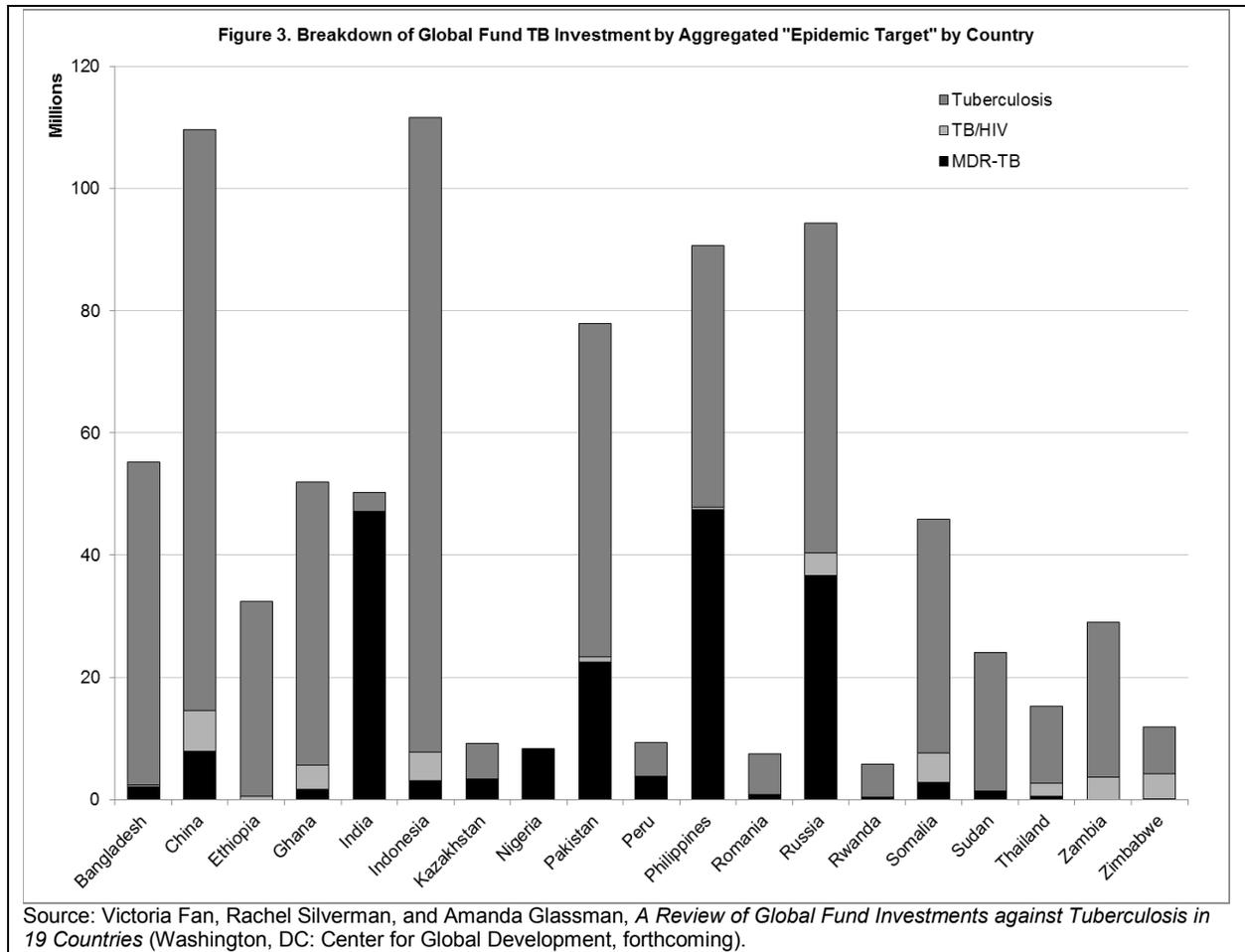
<sup>29</sup> The Global Fund to Fight AIDS, Tuberculosis and Malaria, "Eligibility," <http://www.theglobalfund.org/en/fundingmodel/single/eligibility/>.

the Board and its committees represent additional opportunities to influence allocation.

## Allocations across Interventions and Populations

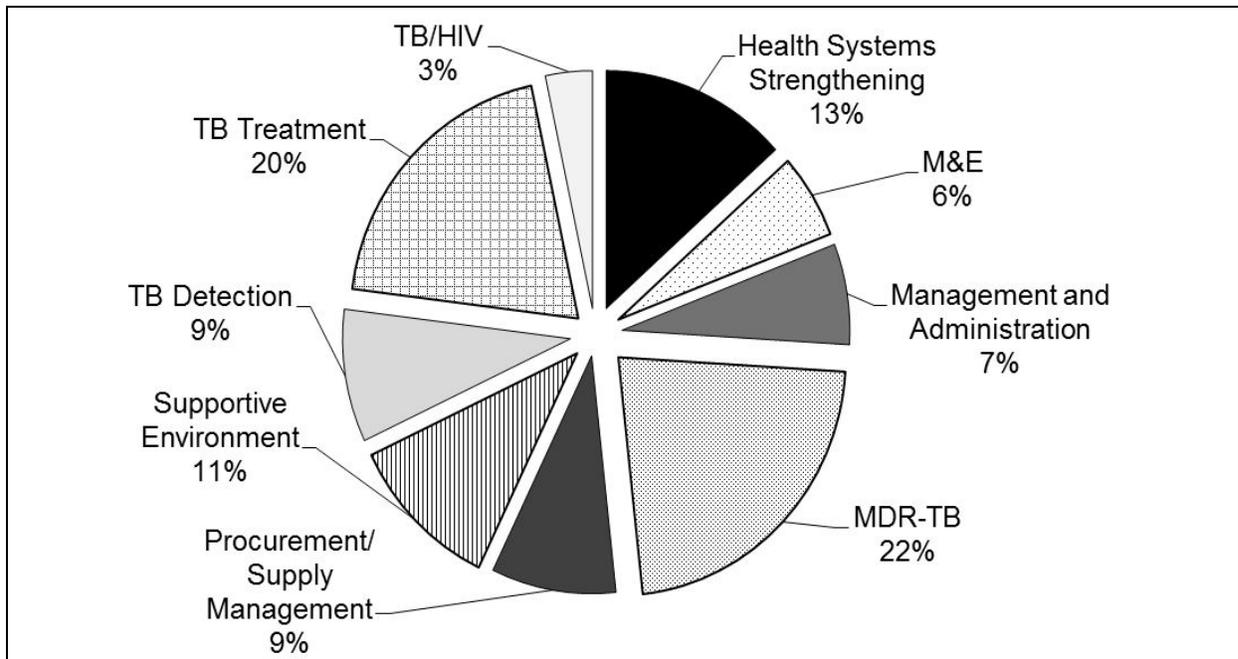
Understanding how previous Global Fund TB grant recipients used funding could inform future CCM allocations. Within a sample of the 19 countries receiving the most TB funds from the Global Fund, a forthcoming study by Fan, Silverman, and Glassman of the Center for Global Development finds that 73 percent of TB funds are targeting general tuberculosis epidemics; 23 percent are targeting drug-resistant tuberculosis; and 4 percent are specifically targeting TB/HIV. Note, however, that the latter category includes only the TB/HIV line items from within TB-specific grants. The Global Fund also allocates significant funds to TB/HIV within its HIV-specific grants, and within grants specifically targeted toward TB/HIV. While those grants are not included in this analysis, CSIS TB working group members estimated that approximately 1 percent of Global Fund grants classified as AIDS include activities directed to HIV-TB coinfection.

Figure 3 presents the breakdown of Global Fund investment by “Epidemic Target” in the 19 sampled countries. Among all countries included in our sample, grant funds are split between at least two and often all three epidemic types. Funding targeted toward MDR-TB is substantial in India, Pakistan, the Philippines, and Russia—all considered MDR-TB epidemic countries by the WHO’s 2012 World Tuberculosis Report.



Next, we consider how the Global Fund has split its TB funds over broad intervention categories. The aggregated breakdown of Global Fund spending by intervention type is presented in Figure 4. We see that direct service delivery of detection and treatment interventions (TB Treatment, TB Detection, TB/HIV, and MDR-TB) accounts for 54 percent of observed spending. The remainder is split between Health Systems Strengthening (13 percent), Supportive Environment (11 percent), Procurement/Supply Management (9 percent), Management and Administration (7 percent), and M&E (monitoring and evaluation) (6 percent). The allocation to M&E is within the Global Fund’s recommended range of 5–10 percent.

**Figure 4. Breakdown of Global Fund TB Program Grant Agreements (PGAs) by Intervention Type**



Source: Victoria Fan, Rachel Silverman, and Amanda Glassman, *A Review of Global Fund Investments against Tuberculosis in 19 Countries* (Washington, DC: Center for Global Development, forthcoming).

The funding breakdown by intervention type varies significantly by country. For example, all of the countries except for Ethiopia and Nigeria specified funds for health systems strengthening (HSS), but the percent allocated to HSS ranges from a low of 1 percent (Thailand) to a high of 44 percent (Rwanda).

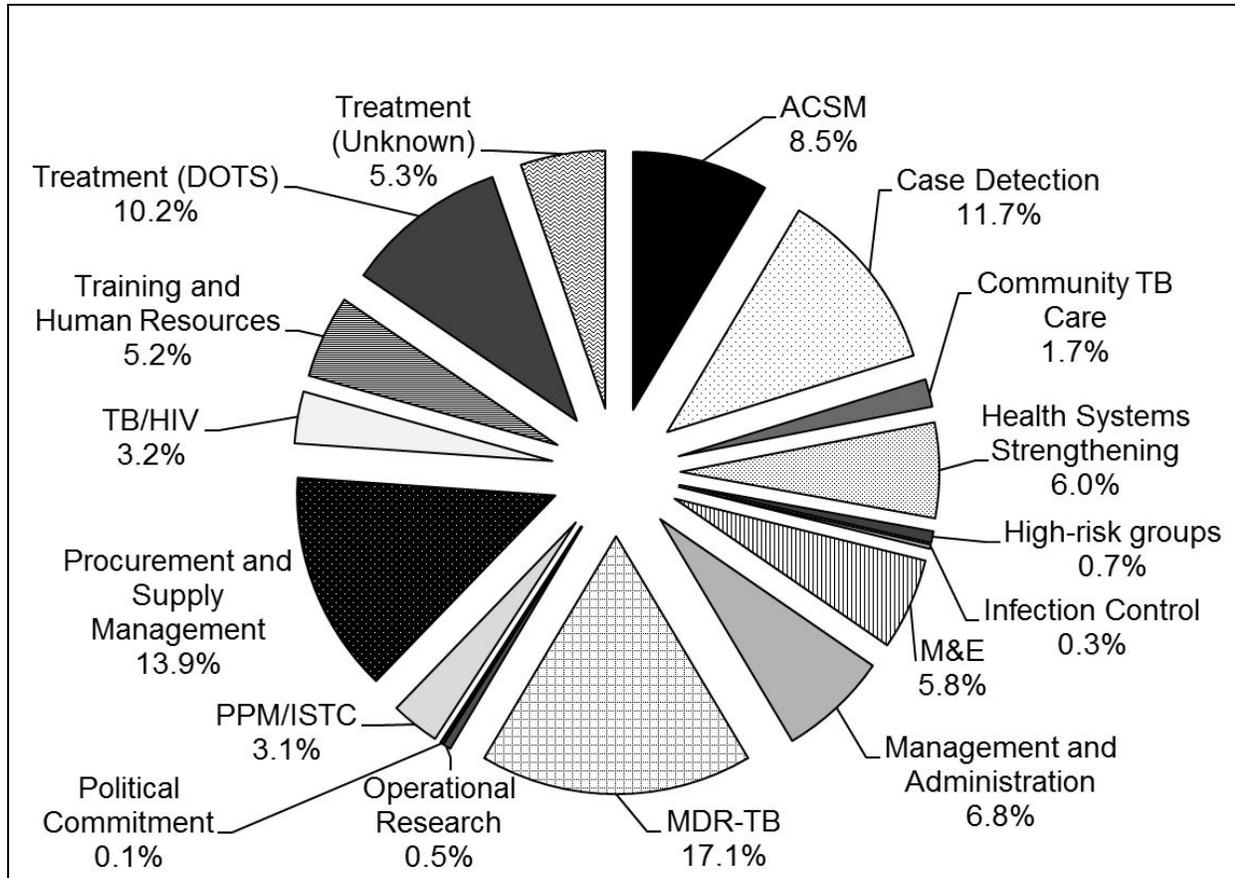
Explicit management and administration costs are also highly variable, ranging from 3 percent (Zambia) to 41 percent (Thailand); five countries (Ethiopia, India, Nigeria, the Philippines, and Russia) did not include a specific category for administrative costs and thus cannot be easily compared.

From the available data, we also compare explicit spending on M&E with the Global Fund’s recommended range of 5–10 percent. Eight countries fall within the recommended M&E range (average of 7.8 percent); three countries exceeded the recommended range (average of 16.1 percent); three countries fell below the recommended range (average of 1.74 percent); and the remainder (six countries) did not list specific budget lines for M&E activities.

To bring funding allocations into sharper relief, we also examine the distribution of spending by detailed service delivery area (SDA) (Figure 5). The distribution looks different for detailed SDA when compared with intervention type (Figure 4), due to a slightly different assignment strategy with the goal of achieving the greatest possible specificity. For example, MDR-TB appears to represent a smaller proportion of overall spending than in Figure 5, while Procurement and Supply Management has increased. This is because procurement-specific budget lines for MDR-TB have been categorized by the SDA (procurement) rather than by the broader intervention type (MDR-TB).

Such assignment requires the authors' discretion; for this and other reasons described above, figures presented here should be considered as illustrative rather than precise estimates. When looking at the Global Fund's Price and Quality Reporting (PQR) system, more than 70 percent of spending is concentrated on MDR-TB medications.<sup>30</sup>

**Figure 5. Breakdown of Global Fund TB PGAs by Detailed Service Delivery Area**



Source: Victoria Fan, Rachel Silverman, and Amanda Glassman, *A Review of Global Fund Investments against Tuberculosis in 19 Countries* (Washington, DC: Center for Global Development, forthcoming).

## Conclusions and Recommendations

Available funding falls short of requirements—indeed is woefully inadequate—to meet the multiple U.S. and international policy goals established to address tuberculosis (TB) in low- and middle-income countries. The goals themselves require adjustment and rebalancing, given budget realities and as more cases of multidrug-resistant (MDR) tuberculosis are detected. Yet it is difficult to make these adjustments and allocate in accordance with policy goals when data and transparency on spending is poor at both PEPFAR and the Global Fund, and when U.S. leverage is limited.

Over the next three years, however, funds channeled through the Global Fund are set to increase, and the way that funds are allocated and spent can be improved. The U.S.

<sup>30</sup> Glassman et al., *More Health for the Money*.

government can use this opportunity to move the money closer to the message through four priority actions:

1. **Clarify the objectives of U.S. government support for TB prevention and control:** Currently the hierarchy of the U.S. government's multiple objectives for its limited TB funding is unclear. Which is most important? Do tradeoffs exist between reaching the Stop TB partnership goals, building on programs where there are established partnerships with the United States, or treating MDR-TB cases, or not? How does and should the United States allocate its funds among competing interventions and priorities and competing countries, given its multiple objectives? The Korenromp et al. study illustrates that under a given budget there may be difficult tradeoffs in terms of how many lives are saved when spending money among first-line TB cases, MDR-TB cases, as well those coinfecting with HIV. However, this is just one study, and further analysis is needed in order to understand what combination of strategies will achieve the largest and most sustained impact on TB incidence and prevalence. Further, if the PEPFAR emphasis in U.S. government funding for TB leads HIV coinfecting people to be prioritized for treatment, then the objective of the funding could be more finely tuned. In short, the U.S. government strategy needs to be smarter about its objectives and goals in order to better spend on prevention and treatment for drug-susceptible TB, MDR-TB, and TB with HIV coinfection. Given funding constraints, all goals cannot be equally important, and funding needs to be optimized for impact.

Whereas maximizing lives saved in low- and middle-income countries would necessarily prioritize high-quality, full-coverage first-line TB treatment over MDR-TB treatment, this type of optimization is not satisfactory because it does not account for the costs that MDR-TB may impose globally or in the United States itself. Thus, given the different outcomes—reduction of TB cases overall and reduction of MDR-TB cases specifically—the two different goals could ultimately be resolved through a common metric, for example, costs. Rather than maximize lives saved, the consideration for the United States might be to minimize the aggregate costs from TB imposed on U.S. residents. For example, if the public health of U.S. residents is a major goal—and indeed TB remains a public health risk to people in the United States, with 9,945 U.S. cases of TB in 2012, and an increasing proportion of those cases that have MDR-TB<sup>31</sup>—then a much more narrow and specific U.S. goal would be to prioritize those countries from which many TB cases are imported into the country. However, this would differentiate the anti-TB program enormously from the HIV/AIDS and malaria programs, which operate primarily for the benefit of recipient country health. As authors we do not condone the idea of maximizing impact against costs for U.S. residents, but instead would argue for optimizing investment against TB burden as a whole, rather than distinguishing between variants of the disease. If impact is maximized against TB burden as a whole, this will likely imply a mix of interventions that affect both types of disease, but perhaps not in the shares or geographic locations where funding is currently deployed.

---

<sup>31</sup> CDC, "Tuberculosis Fact Sheet: Trends in Tuberculosis, 2012," <http://www.cdc.gov/tb/publications/factsheets/statistics/TBTrends.htm>.

2. **Increase bilateral funding for TB and allocate (or leverage allocation) more efficiently:** U.S. funding for TB is low—in absolute terms, by comparison to HIV/AIDS and malaria, and by comparison to other multilateral sources. Although low levels of funding for TB are not themselves a sufficient reason to increase funding, the low levels and continued funding gap suggest that TB is not a priority, in spite of the availability of highly cost-effective treatments and relevance to U.S. interests, particularly compared to HIV/AIDS and malaria. The new OGAC administrator has authority and leeway to adjust the amount and allocation of TB funding as it affects the HIV/AIDS epidemic; a revisit of the amounts and uses of PEPFAR TB money is warranted as well.
3. **Support a more efficient multilateral response:** Given the relative importance of multilateral investment in TB over bilateral investment, the U.S. government has yet to fully exercise influence over the Global Fund and other multilaterals in ways that favor value for money for TB policy goals. While current governance architecture arrangements—namely the U.S. presence on the Board of the Global Fund, represented by PEPFAR, supported by PMI and others—is not necessarily amenable to greater investments in TB or better value for money,<sup>32</sup> there is scope for greater U.S. influence on allocation and spending at the Global Fund, especially given the recent replenishment. USAID and CDC can work more intensively with countries in partnership with Stop TB and others to ensure that country TB plans and proposals optimize impact on TB burden, support better tracking of use and spending, and evaluate epidemiological trends and delivery strategies as rigorously as possible. In addition, the United States can invest more directly in the Global Fund’s “investing for impact” / value for money agenda in support of TB goals.
4. **Strengthen transparency and rigor in spending and impact:** Due to limited and/or poor quality data on production of and expenditure on TB-related services and products, it remains difficult to analyze the specific uses of Global Fund and PEPFAR spending on tuberculosis, and therefore impossible to illustrate and model how to better allocate TB funds vis-à-vis the status quo. The U.S. government should begin to track and more rigorously evaluate its expenditure, perhaps requesting the Government Accountability Office to carry out studies similar to those undertaken in support of HIV/AIDS issues in the context of PEPFAR, or a specific IOM review that would evaluate progress and spending more deeply.

In closing, given the gap between ambition and funding for TB control and the opportunities created by recent reforms at the Global Fund, the United States can take a new strategic look at its bilateral and multilateral TB investments to ensure that the policy message is matched by the amounts and uses of U.S. government money. With sufficient political will and focus, implementing the four recommendations in this paper can build a stronger case for more and better funding for TB in the future.

---

<sup>32</sup> The TB program support lacks the legislative mandate and power that the U.S. global malaria coordinator wields or the ambassador status of the U.S. global AIDS coordinator under PEPFAR.

## Appendix A. Spent U.S. TB Funding by Country or Operating Unit, FY2012<sup>33</sup>

Country	Amount
Afghanistan	6,326.57
Africa Regional Office (USAID)	719,760.16
Angola	215,573.00
Armenia	541,618.29
Azerbaijan	443,485.17
Bangladesh	5,775,597.40
Belarus	198,617.08
Bolivia	1,896,769.44
Brazil	1,954,567.41
Bureau for Global Health (USAID)	38,546,465.39
Cambodia	2,841,788.74
Central Asia Regional Office (USAID)	180,292.52
Democratic Republic of Congo	9,704,893.67
Djibouti	261,876.08
Dominican Republic	757,912.17
East Africa Regional Office (USAID)	1,771,688.05
Ethiopia	7,047,890.89
Eurasia Regional Office (DOS & USAID)	1,087,818.43
Georgia	525,783.23
Ghana	600,000.00
Haiti	1,004,813.80
India	13,341,173.34
Indonesia	21,362,173.39
Kazakhstan	3,397,090.07
Kenya	177,283.29
Kyrgyz Republic	1,989,299.34
Latin America and Caribbean Regional Office (USAID)	644,719.55
Liberia	279,594.00
Malawi	1,096,619.21
Mexico	734,868.29
Mozambique	36,768.27
Namibia	-671,327.38
Nigeria	6,872,067.99
Pakistan	9,525,860.35
Peru	677,236.60

<sup>33</sup> Foreignassistance.gov, “Foreign Assistance Data,” last updated December 20, 2013, <http://www.foreignassistance.gov/web/DataView.aspx>.

Philippines	5,844,716.04
Regional Office Development Mission-Asia (USAID)	3,662,670.98
Russia	8,703,276.84
Senegal	1,072,075.72
South Africa	12,196,701.03
South America Regional Office (USAID)	280,488.69
South Sudan	1,991.51
Sudan, Pre-2011 Election	896,000.00
Tajikistan	1,509,978.32
Tanzania	2,096,006.87
Turkmenistan	782,581.33
Uganda	3,776,654.39
Ukraine	2,689,241.99
USAID Operating Expense	35.88
Uzbekistan	1,610,219.44
Zambia	6,338,578.25
Zimbabwe	2,743,360.98
Total	189,751,542.06

## Appendix B. Spent U.S. TB Funding by Implementing Agency, Q1, Q2, Q3 for FY2013<sup>34</sup>

Implementing Agent	Amount
--	726,826.00
ABT Associates	4,120,075.00
Academy for Educational Development	-
AINS, Inc.	57,258.00
AT&T	976.00
Campaigns and Grey, Inc.	244,686.00
Cardno Emerging Markets USA, Ltd	100,000.00
CARE	246,485.00
Centers for Disease Control	4,754,826.00
Centre for Health Solutions	-
Cepheid	1,500,000.00
Chemonics	2,267,426.00
CITRA INTERNATIONAL UNDERWRITERS	1,685.00
Development & Training Services, Inc.	223,988.00
Elizabeth Glaser Pediatric AIDS Foundation	719,752.00
Erafone	750.00
Family Health International	885,301.00
FHI Development 360, LLC	1,318,247.00
Futures Group International	-
General Services Administration	139,989.00
Global Alliance for TB Drug Development	2,045,097.00
GMG Management Consulting, Inc.	-
Government of Afghanistan	4,125,909.00
Government of Liberia	90,406.00
Government of Zambia	256,251.00
Health Through Walls, Inc.	647,194.00
Helen Keller International	232,185.00
Hewlett-Packard	1,260.00
HOSPICE PALLIATIVE CARE ASSOCIATION OF SA	2,384,141.00
IKP Knowledge Park	-
Indonesian International Education Foundation (IIEF)	85,454.00
Insight Systems Corporation	50,000.00
Institute for Financial Management and Research (IFMR)	30,424.00
International Development Association (IDA)	3,300,000.00
International Procurement Agency	4,172.00

<sup>34</sup> Foreignassistance.gov, "U.S. Agency for International Development," [http://www.foreignassistance.gov/web/Agency\\_USAID.aspx?budTab=tab\\_Bud\\_Impl](http://www.foreignassistance.gov/web/Agency_USAID.aspx?budTab=tab_Bud_Impl).

International Relief and Development	68,692.00
International Resources Group	298.00
International Union Against Tuberculosis and Lung Disease	5,464,725.00
IntraHealth International, Inc.	-
Jaringan Kesejahteraan/Kesehatan Masyarakat (JKM)	113,696.00
John Snow, Inc.	4,171,862.00
Johns Hopkins Program for International Educ. Corp - JHPIEGO	604,251.00
Johns Hopkins University	130,000.00
JSI Research & Training Institute, Inc.	232,594.00
KNCV	37,299,876.00
Lembaga Kesehatan Nahdlatul Ulama (LKNU)	245,587.00
Management Sciences for Health	16,396,618.00
N C I I A	56,000.00
National Academy of Sciences	233,000.00
Operation ASHA	179,464.00
Pan American Health Organization (PAHO)	1,565,142.00
Partners In Health, Inc.	168,505.00
Pathfinder International, INC.	-
PHIL BUS FOR SOCIAL PROGRESS	1,721,242.00
Planson International Corporation	6,555.00
Population Services International (PSI)	879,395.00
Program for Appropriate Technology in Health (PATH)	9,214,049.00
Project Concern	75,503.00
PROSALUD	257,649.00
PT ASTRA GRAPHIA	219.00
PT INDOFICA HOUSING	25,800.00
PT INDOKAYA PRAKARSA KREASI	539.00
PT TELEKOMUNIKASI INDONESIA	957.00
Public Health Institute (PHI)	1,066,970.00
RCQHC	1,659.00
Red Cross Society	330,151.00
REFORMASI INFORMATION SERVICE	125.00
Regional Center for Quality of Health Care	201,216.00
Reproductive and Child Health Alliance (RACHA)	1,100,000.00
Research Triangle Institute	115,551.00
RHAC	850,000.00
Roman Catholic Diocese of Timika	-
Social Impact, Inc.	-
SOCIAL MARKETING COMPANY	161,088.00
United Nations Children's Fund (UNICEF)	-
United Nations World Health Organization	20,541,638.00

United States Agency for International Development	639,523.00
United States Pharmacopeial Convention, Inc.	3,388,314.00
University of North Carolina at Chapel Hill	56,466.00
University Research Co., LLC	17,432,425.00
UPecon Foundation, Inc.	47,326.00
U.S. Embassy	1,848.00
USAID Mission	3.00
Virginia Commonwealth University	5,297.00
World Learning, Inc.	-
World Relief Corporation	210,258.00
Total	155,822,839.00







1616 Rhode Island Avenue NW | Washington, DC 20036  
t. (202) 887-0200 | f. (202) 775-3199 | [www.csis.org](http://www.csis.org)

Cover photo: Lewis Tse Pui Lung / Shutterstock.com.