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Independent observer of the Global Fund

Countries need better data for accurate forecasting of funding gaps in Global Fund grants

Applications for Global Fund grants require countries to state the resources needed for them to meet their targets for HIV, tuberculosis and malaria programs, and to state their anticipated domestic and donor funding, including their Global Fund allocation for the duration of the grant. Subtracting the total anticipated domestic and donor funding from the resources they need gives the gap in funding for each disease component.

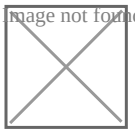
Using the example of HIV, we aim to describe how countries calculate the resources they need for their fight against the diseases, and the related challenges they face due to the scarcity or the poor quality of their country and program data.

Wide variation in unfunded gaps in High Impact Africa countries

A recent GFO article focusing on High Impact Africa countries presented the funding distribution between domestic and external sources for the three diseases in the 2015-2017 grants, and their associated funding gaps. (High Impact Africa and Asia countries are a group of 23 priority countries which together account for approximately 70% of the global burden of disease for HIV, TB and malaria, and receive two-thirds of all Global Fund investments).

For HIV specifically, domestic financing accounted for 3% of total expenditures in Mozambique but for 48% in Kenya, in the 2015-2017 allocation period. This wide range gives rise to a similarly wide range in individual countries' funding gaps for HIV, from 4% in Mozambique to 49% in Cote d'Ivoire (Figure 1).

Figure 1: Anticipated resources, gap in amount and percentage for select High Impact Africa countries



Source: Aidspan policy analysis department

The resource needs calculation

We use HIV as a disease-component example to illustrate how these resource needs were calculated. First, the country adopts a health target usually formalized in a National Strategic Plan. Second, a team of experts gathers data on the current demographic, HIV epidemic (e.g. incidence and prevalence by age-group) and cost of prevention and care.

Using mathematical modeling, the team forecasts the future population by age group and gender, future HIV incidence and level (or number) of persons living with the disease. Then, the team uses the forecasts of population and HIV epidemics with assumptions on future trends of costs of health commodities to project the resources needed.

The health target is often based on the relevant recommendation from the World Health Organization (WHO) or, for HIV, the Joint United Nations Programme on HIV/AIDS (UNAIDS).

For instance, UNAIDS recommended in 2014 that all countries adopt its '90-90-90' target by the year 2020. This target means that 90% of people living with HIV know their status, 90% of those who are HIV positive are on antiretroviral therapy (ART) and 90% of those on ART are virally suppressed. Some countries adjust these targets to suit their country context: Kenya adopted 90-90-90 but decided on an earlier target date of 2019.

The latest WHO recommendation in the care and treatment of persons living with HIV is " test-and-treat ", i.e. people who test positive for HIV start treatment as soon as possible after diagnosis, regardless of their CD4 count. (In 2013, the WHO recommended that adults living with HIV start treatment when their CD4 cell count falls to 500 cells/mm³ or less – a level at which their immune systems are still strong). Some countries such as Togo still follow that recommendation, which itself was an improvement over an earlier (2010) recommended CD4-count threshold of less than 350.

For any country to reach the UNAIDS 90-90-90 target (or any other target it chooses), it is important to first forecast the estimates of the population (for instance the number of children, adolescents and adults by gender and age group) to determine the number of children, women of reproductive age, and men who would potentially need HIV prevention and treatment services.

The second step is to forecast HIV impact in terms of levels (the number of people who live with HIV), HIV incidence (percentage of new infections per year), and HIV prevalence, disaggregated by age-group and gender, when possible. The third step is to use historic, current and forecasted population and HIV data as well as costing data (e.g. costs of HIV test kits, ARVs, laboratory costs, health professionals, community mobilization and other components of service delivery) as input (or predictor) variables in a mathematical model, to obtain projected resource needs.

UNAIDS and several countries use a software called 'Spectrum' for their projections.

Kenya example of resource needs calculation

When the Ministry of Health in Kenya adopted the 90-90-90 target, development partners published a policy brief that estimated resources needed.

The policy brief forecasted the number of Kenyans who will be living with HIV in 2019 using 2013 data. Then, the brief projected that 1.4 million patients would need ART by June 2019, up from 871 000 patients in 2016 when the forecast was first made. This higher number of people living with HIV (PLWH) on ART translated into an increase in the needs for health commodities, personnel, space and other utilities, but the brief focused on the health commodities, which are the main cost driver in HIV treatment programs.

The brief used consumption data to forecast the ARV needs, and morbidity data to forecast the laboratory commodities. In terms of quantification, consumption data is superior to morbidity data, which is used when consumption data is not available. For the viral load tests, the policy brief used population and target estimates in the absence of more reliable program data. Cost data originated from procurement files, the Global Fund, and PEPFAR (the US President's Emergency Plan for AIDS Relief). Then, the policy brief estimated resources needed, available funding, and the associated gap.

Reliable data on population targets and unit costs is needed but is not always available

As the Kenyan example indicates, a wide range of reliable data is necessary to project future resource needs. This data originates from several sources. Population and behavioral data (e.g. distribution of the population by sex, age group, and location) comes from national censuses or representative surveys such as Demographic and Health Surveys (e.g. the number of children desired by women, HIV-related behavior). Morbidity and beneficiaries data (e.g. sex, age and geographical location of people who receive health services) comes from the routine Health Management Information System (HMIS) or its equivalent. Other service utilization data comes from the program (e.g. number of people treated for HIV, number of ARVs consumed, laboratory reagents consumed). Unit costs of HIV treatment (e.g. ARVs, laboratory, personnel) originate from procurement records.

The Global Fund programs generate some of the data needed using implementers' own monitoring and evaluation information; the quality of this data is subject to debate. The Secretariat, in the Global Fund's annual report 2017, asserts that quality data exists, especially in High Impact countries. On the contrary, in the same year, the Office of the Inspector General (OIG) deplored the "lack of accurate and reliable data" in a published report on supply chains in fifteen countries, thirteen of which were High Impact countries in Africa and Asia. The OIG highlighted the inadequacy of data used for quantification and forecasting of health commodities. For example, health commodities consumption data could not be linked to the number of patients treated in 10 out of the 15 countries reviewed. All the countries audited (except one) mainly use morbidity data for quantification and forecasting as no other reliable data is available.

These diverging opinions illustrate a quality issue. For example, the OIG report affirmed that patient registers are not used in some facilities across several countries. In addition, it is possible that those data are mainly collected for reporting purposes and not demanded by program managers to improve service delivery. An Aidspan study found similar results earlier this year.

Other studies have also highlighted the lack of publicly available data in sub-Saharan Africa, where the Global Fund invests about 65% of its monies.

To circumvent the absence of reliable data at country level, modeling uses data published by others from similar countries, or regional estimates.

Using erroneous data for projection results in inefficient resource allocation

Using erroneous data to estimate future resource needs has a cascading negative impact down the service delivery chain. It results in inefficient resource allocation and subpar service delivery.

For instance, overestimating the number of PLWH leads to overestimation of their needs, in particular expiries and wastage of ARVs. On the other hand, underestimating PLWH leads to unmet needs (illustrated by stockouts of health commodities) and to suffering by those who need care and services.

The Global Fund should strategically invest in health system and data

The data required for reliable projection reinforces the need for the Global Fund to invest and catalyze domestic and other partners' resources to improve the quality and availability of data in countries where the Fund invests. Indeed, in its current strategic plan, the Global Fund aims to strengthen health systems, particularly to "[s]trengthen data systems for health and

countries' capacities for analysis and use". The Global Fund needs partners' support and implementing countries' embrace of 'country ownership' to reach this objective.

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