Civil Registration & Vital Statistics Program

Catalyzing Support for CRVS Improvement

Examples from the Data for Health Initiative

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Bloomberg Philanthropies

DATA FOR HEALTH INITIATIVE

Vital Strategies

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Introduction

In this document we share experiences of three countries supported under the Bloomberg Philanthropies Data for Health Initiative to leverage support from the Global Fund to Fight AIDS, TB and Malaria ("the Global Fund" or "the Fund") for the generation and use of community cause of death data. The report describes how stakeholders in Tanzania, Rwanda and Ethiopia secured investments from the Fund to improve the quantity and quality of data from civil registration and vital statistics (CRVS) systems. These investments have led to the first direct measurement of AIDS, TB and malaria mortality using both WHO ICD[1] and verbal autopsy[2] methods.

Well-functioning and reliable CRVS systems that include the assignment of cause of death using WHO-approved methods are essential to good governance. These data permit the monitoring and evaluation of effective public health policy, and interventions aimed at major killers such as AIDS, TB and malaria.

The Bloomberg Philanthropies Data for Health Initiative[3] was launched in 2015 with the aim of improving the production, quality and use of critical public health data in low- and middle-income countries. The Initiative has invested most heavily in strengthening country civil registration and vital statistics (CRVS) systems to register every birth and death, including the reliable assignment of cause of death.

[1] "ICD" refers to the International Classification of Diseases. The WHO 2016 medical certificate of cause of death coded to ICD standard is the preferred source of cause of death data.
[2] Verbal autopsy, or post-mortem caregiver interview, is a method to elicit reliable responses about signs and symptoms from lay people who cared for the deceased in the period before death. The interviews are then coded by physicians or computer algorithms to determine the most likely cause of death. Verbal autopsy is used where there are no doctors available to certify the cause of death.
[3] https://www.bloomberg.org/public-health/strengthening-health-data/

Through the Initiative, Vital Strategies[4] works directly with government agencies in over 30 countries in Africa, Asia and Latin America to strengthen CRVS systems, including data production and use.

Our approach involves addressing government-led CRVS priorities with embedded staff, expert technical assistance and catalytic funding. By "embedded" technical assistance, we mean at least one project-funded specialist is working within the ministry or agency responsible for implementing the government's CRVS improvement plans. "Catalytic" funding refers to providing enough resources to prove the feasibility and cost-effectiveness of system interventions on a small scale, but not enough for full national implementation. The D4H theory of change suggests that increased local and global demand for better CRVS data will lead to larger, sustained investments, enabling high levels of completeness and timeliness in mortality and birth data. To fully and sustainably implement efforts to accurately count births and deaths, and assign causes of death, additional long-term funding is necessary.

[4] https://www.vitalstrategies.org/programs/civil-registration-and-vital-statistics/

The Global Fund and CRVS Investments

The Global Fund is committed to eliminating HIV, TB and malaria to create a healthier, safer and more equitable future for everyone. By raising and distributing over $5 billion annually, the organization fights these deadly infectious diseases, tackles the underlying injustices that contribute to their spread, and strengthens health care systems in more than 100 countries.

The main reason the Global Fund supports CRVS system strengthening is to directly measure the human impact of their investments and systematically track changes in population-level mortality for the three priority diseases. The Fund views tracking cause-specific mortality as a means to assess the quality of services provided by the disease control programs they support. Consequently, the Fund has a history of including provisions for CRVS or CRVS-related activities in country grant portfolios.

For instance, the Strategy, Investment and Impact Committee of the Global Fund recommended that countries allocate 5%-10% of their grants to monitoring and evaluation, including 7% to strengthen national data systems for reporting, surveys and program reviews. The guideline allocations are 2% for analytical capacity and reviews, 2% for strengthening HMIS, 2% for population-based surveys, and 1% for birth and death statistics (vital registration), which can be adjusted based on the country setting.

In addition, the Global Fund's 2023–2028 strategy defines primary goals and sub-objectives for its work.[5] For implementation, the Fund has published a framework[6] that includes core lists of indicators for the three priority diseases as well as for "Resilient and Sustainable Systems for Health (RSSH)." Under the RSSH module, several specific activities to strengthen CRVS systems are mentioned (see Annex A). Furthermore, to encourage countries to invest in CRVS-related activities, the Technical Evaluation

[5] https://www.theglobalfund.org/en/strategy/
[6] https://www.theglobalfund.org/media/4309/fundingmodel_modularframework_handbook_en.pdf

Reference Group of the Global Fund made recommendations to encourage support for related activities, including sample verbal autopsy (see Annex B for details).

Countries mobilize resources from the Global Fund through the country coordinating mechanism (CCM).[7] The CCMs are national committees established to coordinate the development and submission of the country's request for funding, to oversee the implementation of approved grants, and to ensure linkages and consistency between the grants of the Global Fund and other national health and development programs. CCMs have the authority and ability to follow the guidance noted above regarding the inclusion of funding for monitoring and evaluation. CCMs have not routinely optimized the allocation and deployment of available resources to strengthen systems that generate timely and accurate cause of death data, as other needs were prioritized. However, here we share three country examples where Global Fund resources *have* been optimized to improve availability of mortality data to measure overall mortality and disease-specific mortality trends for TB, HIV and malaria.

[7] https://www.theglobalfund.org/en/country-coordinating-mechanism/

Examples of Successful Resource Mobilization

Tanzania

Background

As part of the Bloomberg Philanthropies Data for Health Initiative, Tanzania designed and began to implement improved methodologies at scale for the collection and use of cause of death data for deaths occurring both in the community and in health facilities. As the activities were being scaled up, additional resources were required beyond those available through the Initiative. The scale up of verbal autopsy is being implemented using a nationally representative sample of deaths obtained through probability proportional to size (PPS) sampling. The implementation follows a phased approach.

Global Fund Engagement

Initial discussions regarding Global Fund policies for the funding of CRVS-related activities revealed that there was limited awareness among relevant CCM members and government officials. Given the pivotal role of awareness in this endeavor, Vital Strategies' Data for Health team oriented key stakeholders, including the Monitoring and Evaluation Section under the Ministry of Health, about potential opportunities to support better cause of death data with the Global Fund. This involved a discussion about creating synergistic impact with the Data for Health Initiative.

Further engagement with stakeholders played a vital role in moving from an abstract notion of Global Fund support for CRVS development to a concrete proposal with a strong buy-in and sponsorship from the CCM. Under the proposal, government CRVS teams, in collaboration with the Initiative and other stakeholders, would use Global Fund resources effectively to support current CRVS priorities. This phase involved prioritizing interventions such as verbal autopsy implementation based on their potential impact and learnings from ongoing Data for Health Initiative efforts. The set of priorities was presented by the CRVS

implementation team to the CCM for review and approval. One of the most pivotal aspects leading to the inclusion of CRVS-related work in the country submission was the demonstrated success of prioritized interventions implemented at the initial scale with Data for Health Initiative support.

The government CRVS team and Vital Strategies' Data for Health team subsequently aligned their efforts to ensure that the CCM had a complete understanding of how the proposed CRVS-related work was aligned to the priorities of the Global Fund—specifically, how the national CRVS priorities aligned with the interventions to be supported by the Global Fund. Following the review of the priorities by the CRVS implementation team and the CCM, CRVS activities focused on full-scale implementation of verbal autopsy in a nationally representative sample and support for the transition to ICD-11. These were included in the comprehensive proposals developed by the CCM and presented to Global Fund. This collaborative approach maximized the impact of Global Fund support for synergistic CRVS system strengthening in Tanzania. It also improved the prospects of securing the needed resources for scaling CRVS improvements as part of government CRVS strengthening efforts.

Results

Approximately US$300,000 over two years was allocated by the Global Fund to support the scale up of improved systems for the collection and use of cause of death data. The Fund investments yielded significant results. Specifically, the infusion of these resources allowed for the scaling up of activities to implement verbal autopsy in a representative sample of the population and to scale medical certification of cause of death. The results from the verbal autopsy scale-up were recently analyzed in a report produced by government15% in 2022.[8] The data were used in Tanzania's first-ever Vital Statistics Reports (2019) and subsequent reports. In terms of AIDS, TB and malaria, the overall picture is as follows:

[8] Ministry of Health, United Republic of Tanzania, data used with permission

Age Group	ICD-coded facility data (proportion of deaths & rank)		Verbal autopsy data (proportion of deaths & rank)	
AIDS				
	M	F	M	F
0-4	1.0% (16th)	0.0% (13th)	0.9 (14th)	2.0% (10th)
5-59	4.0% (5th)	1.0% (24th)	27.6% (1st)	35.6% (1st)
60+	0.0%	0.0%	4.9% (7th)	5.7% (6th)
TB				
	M	F	M	F
0-4	0.0%	0.0%	0.9% (17th)	1.5% (11th)
5-59	4.0% (6th)	0.0%	6.8% (5th)	4.7% (7th)
60+	5.0% (8th)	0.0%	11.0% (2nd)	9.7% (3rd)
Malaria				
	M	F	M	F
0-4	6.0% (6th)	2.0% (6th)	12.3% (3rd)	15.8% (2nd)
5-59	8.0% (3rd)	11.0% (1st)	7.6% (4th)	6.3% (5th)
60+	0.0%	2.0% (12th)	8.3% (3rd)	9.9% (2nd)

Source of data: United Republic of Tanzania, Ministry of Health 2023, used by kind permission.

Table 1. AIDS, TB and Malaria Deaths in Tanzania by Age-Group and Data Source

The relative ranks for AIDS mortality in adults and those over 60 years of age in the hospital compared to the community data may suggest that home-based follow-up or adherence support, as well as palliative care, may be important policies to consider (Table 1). Similarly, while TB deaths among adult men are the sixth leading cause of death in both the facility and community data, TB mortality in the people over 60 and among adult women appears

to be much more of an issue in community mortality patterns than in facilities. There also may be a hidden malaria burden among older adults in the community.

Rwanda

Background

In Rwanda, the challenge was to secure adequate funding for the full-scale implementation of verbal autopsy to determine the causes of deaths occurring outside of health facilities. The efforts supported by the Data for Health Initiative had illustrated the value of the systems for the collection and use of verbal autopsy data, so it was a good time for government stakeholders to acquire additional financial resources.

Global Fund Engagement

Based on ongoing consultations with government stakeholders under the Data for Health Initiative to improve the CRVS system in Rwanda, the government better understood the usefulness of good-quality mortality data to measure the impact of disease control programs funded through the Global Fund. This led to a decision by the Rwanda Biomedical Centre to integrate measurements of mortality into one single repository database to be used for reporting, among other purposes. As a result of these decisions, dialogue began with the Global Fund to strengthen the mortality reporting system part of the country's CRVS system. As in Tanzania, there was a need to sensitize the Global Fund Country Coordinating Mechanism (CCM) about the Global Fund's own policies and views on investment in activities directly addressing the gaps in local mortality reporting.

The main activity presented to the CCM was the verbal autopsy scale-up for reporting cause of death for deaths occurring outside health facilities. The Rwanda Data for Health team was connected to the Tanzania team that had previously led the Global Fund engagements there. Tanzania's success in securing Global Fund resources to strengthen its CRVS systems motivated the Rwanda team to remain engaged with the CCM.

Building on the knowledge from the Data for Health Initiative team in Tanzania, the Rwanda team prepared a paper advocating for Global Fund resources to enhance Rwanda's CRVS

systems. The paper was distributed to the Rwanda Biomedical Centre program team responsible for preparing the Global Fund grant application, generating the necessary awareness. The concept note demonstrated to the CCM the value and impact of investing in CRVS to monitor shifts in mortality rates related to TB, HIV and malaria. The CCM approved the concept for the Global Fund request based on the way it outlined the need for robust CRVS data, highlighting its role in monitoring and tracking health intervention indicators for HIV, malaria and TB.

Results

The proposal to the Global Fund mobilized US$750,000. More specifically, $450,000 was earmarked for the year 2022-2023, with an additional $300,000 allocated for 2024-2025 to support the scale-up of verbal autopsy implementation and capacity building of civil registrars on mortality reporting and use of the data as a part of strengthening the mortality reporting system. The Global Fund has provided financial support to bolster the coverage and quality of death data within health care facilities and communities.

The specific activities to be supported by the Global Fund include establishing sustainable systems for mortality reporting and enhancing the capacity to analyze and disseminate mortality data to monitor the Sustainable Development Goals and other health intervention indicators. The government has further indicated that the CRVS system should now be the sole and official source of mortality data for the country.

This resulted in the nationwide scale-up of verbal autopsy in March 2023, integrating it into the CRVS system for reporting community causes of death. By the end of 2023, a total of 15,406 verbal autopsies were conducted for all registered community deaths. The findings show that 61% of these deaths were due to noncommunicable diseases, while communicable diseases and injuries accounted for 29% and 10%, respectively. In terms of AIDS, TB and malaria, the table below presents the proportion and rank of ICD coded deaths and Verbal autopsy, respectively.

Age Group	ICD-coded facility data (proportion of deaths & rank)	Verbal autopsy data (proportion of deaths & rank)

AIDS				
	M	F	M	F
0-4	0.00%	0.03% (>20th)	0.42%(6th)	0.42%(5th)
5-59	2.25%(8th)	2.70%(5th)	4.62%(1st)	5.41%(1st)
60+	0.71%(8th)	0.47%(5th)	3.71%(4th)	4.62%(5th)
TB				
	M	F	M	F
0-4	0.03% (>20th)	0.05% (>20th)	0.02%(27th)	0.03%(23rd)
5-59	2.69%(6th)	1.12%(12th)	1.36%(7th)	0.49%(13th)
60+	1.10% (>20th)	0.40% (>20th)	3.07%(6th)	1.82%(9th)
Malaria				
	M	F	M	F
0-4	0.09% (> 20th)	0.06% (> 20th)	0.44%(5th)	0.43%(4th)
5-59	0.34% (>20th)	0.17% (> 20th)	0.42%(21st)	0.27%(24th)
60+	0.09% (> 20th)	0.09% (> 20th)	0.26%(23rd)	0.35% (22nd)

Source of data: Republic of Rwanda Ministry of Health, 2023, used by kind permission.

Table 2. AIDS, TB and Malaria Deaths in Rwanda by Age-Group and Data Source

The most notable findings from this high-level analysis are the discrepancies in the ranking of AIDS and malaria as causes in certain age groups between the verbal autopsy and health facility data (Table 2). AIDS mortality in the community, as represented by the verbal autopsy data, ranked somewhat higher than in the facility data for children and adults. Similarly, childhood malaria ranked as a much more important cause in the community compared with the facility. This may indicate that more community- and home-based services may be required to combat these causes in these age groups.

Ethiopia

Background

Ethiopia is affected by a triple burden of diseases (communicable, noncommunicable and injuries), but the country lacks an appropriate national system that can track these disease burdens. The Data for Health Initiative has been supporting the country to better capture data from deaths that happen in health facilities and in the community. Community cause of death information remains the major gap in Ethiopia. More than 80% of deaths happen outside of health facilities; they remain unregistered and the causes remain unknown. The two-year vital statistics report highlighted the absence of cause of death information. Vital Strategies also supported efforts to establish a system to strengthen the notification and registration of community deaths and capture community causes of death by developing training materials, a standard operating procedure (SOP) and a reporting system. The ongoing consultation and discussion that took place with CRVS stakeholders (Ministry of Health, Immigration and Citizenship Service, and Ethiopian Statistics Service) have been taken as positive initial steps to mobilize resources to capture high-quality community cause of death data.

Global Fund Engagement

The Global Fund supports HIV, TB and malaria programs in the country and provides resources to support the establishment of a resilient system to monitor and evaluate the impact of support for each program. Due to the buy-in obtained through ongoing consultation and discussion between the Data for Health team and the Ministry of Health to improve the collection of mortality data, the Ministry of Health proposed that the CCM ask the Global Fund to support the strengthening of community death notification and initiation of a system to collect community cause of death data using verbal autopsy. This system improvement is believed to contribute toward the achievement of Sustainable Development Goals (SDGs).

Results

The CCM believed in supporting the CRVS program, and a total of US$835,000 over two years was mobilized to support the ongoing effort to strengthen community death

notification and cause of death data. The Global Fund supported the verbal autopsy pilot in 47 districts from all regions of the country. Training of verbal autopsy data collectors and supervisors, and sensitization workshops, were supported through the Global Fund, as was field-level program supervision and monitoring. As of late 2024, verbal autopsy data collection continues in the 47 model districts.

The verbal autopsy pilot concluded in early 2023 and data from over 1,600 verbal autopsies was captured, demonstrating the feasibility of scaled application. Deaths showed an age distribution that may be skewed, with adults accounting for 77%, followed by children (14%) and neonates (9%). Males accounted for a higher number of deaths (59.2%) than females (40.2%). Accordingly, the broad cause groups show a higher percentage of deaths due to Group 2: noncommunicable diseases (43.2%) followed by Group 1: communicable, nutritional and maternal conditions (37.8%) and Group 3: external causes/Injuries (9.5%). The higher prevalence of Group 2 compared to Group 1 conditions may be an artifact of the age structure of the verbal autopsy sample if it is, indeed, significantly skewed toward adult mortality.

Among reported specific causes of death, external causes (9.5%) were the leading cause of deaths for all ages and sexes, followed by acute cardiac diseases (8.7%) and stroke (8.6%). Maternal causes of deaths, external causes and stroke were the top three causes of death among females accounting for 13.8%, 7.5% and 7.5%, respectively. Similarly, external causes (67.9%), acute cardiac disease (20.4%) and stroke (18.8%) were the top three causes of death among males. Birth asphyxia (36.1%), neonatal sepsis (19.4%), neonatal pneumonia (13.9%), and prematurity (6.3%) were the leading causes of neonatal deaths, accounting for about 76% of all neonatal deaths. For children under 5, acute respiratory infection (including pneumonia) is the leading cause (23.5%) followed by meningitis and encephalitis (14.2%), and diarrheal diseases (13.0%). Obstetric hemorrhage is the leading cause of maternal deaths, accounting for 41.5% of all maternal deaths, followed by obstetric sepsis (33%). This is the first report prepared by the Ministry of Health with data on community causes of death, with the verbal autopsy data completeness above 90%.

Age Group	ICD-coded facility data (proportion of deaths & rank)		Verbal autopsy data (proportion of deaths & rank)	
AIDS				
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0-4	0.00%	0.03% (>20th)	0.42%(6th)	0.42%(5th)
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5-59	0.34% (>20th)	0.17% (> 20th)	0.42%(21st)	0.27%(24th)
60+	0.09% (> 20th)	0.09% (> 20th)	0.26%(23rd)	0.35% (22nd)

Source of data: Federal Democratic Republic of Ethiopia, Ministry of Health, 2023, used by kind permission.

Table 3. AIDS, TB and Malaria Deaths in Ethiopia by Age Group and Data Source

In Ethiopia, based on a large sample of model districts and an analysis of ICD-coded facility mortality data using ANACoD3 (an application that assesses the quality of mortality and cause-of-death data), it appears that AIDS, TB and malaria mortality occur at roughly the same relative proportion in facilities and in the community (Table 3).

Conclusion

Opportunities for Other Countries to Explore Global Fund Support

The examples above demonstrate a practical set of steps that other Fund recipient countries might use to create awareness and demand among CCMs and influencers for CRVS system improvement in its capacity to measure population trends and impact of programs to combat leading causes of premature death. It also validates the approach to catalyzing improvements

To effectively address challenges at the country level, it is crucial to establish connections with the CCM, as seen in examples from Rwanda and Tanzania. This involves building relationships with local stakeholders, even if those connections do not currently exist. In addition, creating awareness and engaging stakeholders are key components of this process. This means making sure that people are informed and involved in the efforts, fostering a shared understanding of the issues and encouraging collaboration.

The table below lists some enabling factors and some challenges or barriers encountered.

Enabling Factors	Challenges and Barriers
• High demand for robust, reliable and complete mortality data (from facilities and communities) to measure public health interventions	• Limited awareness at the national level of CRVS stakeholders about the potential for Global Fund support to strengthen the CRVS system
• Pressing needs to strengthen CRVS systems	• Strong justification of the relevance of a fully functional CRVS system to the core areas of support of the Global Fund (considering competing priorities)

In sum, the collaboration between the Data for Health teams in Tanzania, Rwanda and Ethiopia and the Global Fund exemplifies successful resource mobilization strategies for strengthening CRVS systems. These efforts involved raising awareness among key

stakeholders about the potential of Global Fund support, aligning priorities with national CRVS goals, and demonstrating the impact of improved data collection methods.

The outcomes include significant financial support from the Global Fund for the scale-up of cause of death data collection in Tanzania, the implementation of verbal autopsy systems in Rwanda, and the enhancement of community death notification and cause of death data capture in Ethiopia.

These efforts not only contribute to achieving the specific goals of the Global Fund but also underscore the broader importance of robust CRVS systems for effective public health planning, monitoring and evaluation. The success stories from these countries provide valuable insights into the importance of tailored strategies, local engagement and clear communication in successfully mobilizing resources from the Global Fund to strengthen CRVS systems, ultimately contributing to improved public health outcomes in these countries.

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