Strengthening Community Capacity to Combat Malaria in Burundi

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Executive Summary

Although the government and international organizations have been involved in malaria control interventions, malaria remains one of the top public health challenges and was the fourth leading cause of death in Burundi in 2019.[1,2] Malaria disproportionately affects people in the eastern part of the country and young children.[3,4] In order to build local capacity to prevent and treat malaria and quickly identify outbreaks, especially in high-risk areas, this grant will be used to increase the number of trained community health workers and formally integrate them into the existing health system, strategically build public health centers in rural and highland areas in the eastern part of the country; and increase reliable access to rapid diagnostic tests and malaria drugs for children under five years old.

Background

There were large outbreaks of malaria in Burundi in 2017 and 2019.[1,5] The most vulnerable were children under five years old.[4] During the 2019 outbreak, there were over 8.7 million total malaria cases reported in Burundi.[3] As of December 15, 2019, there was a 93% increase in the number of malaria cases compared to the same period [January 1-December 15] in 2018.[3] While over 8.4 million people in need had access to treatment, malaria was the fourth leading cause of death in Burundi in 2019.[2,6] Nineteen health districts in the eastern part of the country had the highest malaria incidence rates.[3] Some concerns with the recent outbreaks is that mosquitos are surviving at higher altitudes where they previously hadn't been due to global warming, and there are also cases of malaria drug resistance.[5]

Burundi is currently a very poor country and projected to be the poorest country by 2030.[7] In 2013, 72.8% people were living in extreme poverty, meaning they lived on less than 1.90 United States dollars (USD) per day.[8] That same year 89.6% people were living on less than 3.20 USD/day and 96.9% people lived on less than 5.50 USD/day.[8] About 95% of the poor people in Burundi live in rural areas and poverty is more prevalent in the Northern and Central-Eastern regions of the country.[7] Almost half of households are food insecure and 56% children are stunted.[7,8] Accessibility to water, sanitation, and electricity are also very low.[7]

Burundi's economy is largely based on agriculture, but this sector has not grown much and is largely tied to international coffee and tea prices.[9] Political instability and crises, as well as lack of infrastructure, have impeded economic growth in Burundi.[10,11] Foreign aid and Burundi's GDP growth both greatly declined in 2015 due to political crisis and have still not recovered.[9,12] Burundi has a high fiscal deficit and was categorized as having a high risk of external debt distress by the World Bank.[10,13] Additionally, Burundi is a highly corrupt country, with a Corruption Perceptions Index of 19/100 in 2019.[14] These circumstances make donors and the international community wary of investing in Burundi.[9] COVID-19 is expected to cause Burundi's economy to contract.[12]

In 2004, the Burundi government aimed to address health challenges through a series of reforms emphasizing performance and the introduction of a contracts model for health-service delivery. The number of health centers increased significantly between 2005 and 2014, rising from 573 in 2005 to 897 in 2014.[15] During the same period, the number of hospitals also increased from 44 in 2005 to 69 in 2014.[15] Therefore, in 2014, there was one health center for 10,109 population and 1 hospital for 131,414 population.[15] In 2017, there were 10 physicians/100,000 population, which was half of the Sub-Saharan Africa region average.[16] There were 90 nurses and midwives/100,000 population in 2017, which is actually nine times more than the regional average.[16]

Donor aid is the main source of funding of the health sector.[10] Health expenditures totaled $254,435,064 (USD), or 7.5% GDP in 2017.[17] Domestic private expenditure accounted for the 44.2% total health expenditure, while domestic public expenditure accounted for 24.7% and external donor expenditure accounted for 31% total health expenditure.[17] The overall health spending per capita in 2017 was $23.50 USD, while the regional average was $83.76 (USD) and the world average was $1061 USD.[16]

Since 2001, Burundi's government has developed national strategies to combat malaria by focusing on prevention, data collection, case management, and artemisinin-based combination therapy (ACT).[18] Currently, the 2018-2023 national plan created by the Ministry of Public Health and the Fight Against AIDS (MoH) is working to reduce the morbidity of malaria by 60% by 2023.[19] The World Health Organization (WHO), the United States Agency for International Development (USAID), the United Nations International Children's Emergency Fund (UNICEF), and the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund) have also been involved in malaria outbreak responses and control interventions in Burundi. Their involvement has centered around building local capacity for malaria prevention and control measures, distributing long-lasting insecticide nets (LLINs), providing technical support, preparing mobile clinics, facilitating indoor residual spraying (IRS), procuring antimalarial drugs, and training health workers on new malaria treatment protocol.

The purpose of this grant is to strengthen local capacity to prevent and treat malaria and identify malaria outbreaks. These objectives will be achieved by: scaling up community health worker (CHW) programs and integrating them into the existing health system; building public health centers (PHCs) in rural and highland areas in the eastern part of the country; increasing reliable access to rapid diagnostic tests (RDTs) and malaria drugs for children; and working with the MoH.

Goals

Sara Albanna	*Goal-setting table for Global Fund program in Burundi targeting malaria*			
	STAFF	**STUFF**	**SPACE**	**SYSTEMS**
WHAT?	Increase number of local community health workers (CHWs) trained in malaria prevention, diagnosis, and treatment	Increased reliable access to rapid diagnostic tests (RDTs); Increase reliable access to malaria drugs for children under 5 years old	Increase number of public health centers (PHC) in rural and highland areas in the eastern part of the country	Work with MoH to establish CHW training program
Possible Indicator	⬆ # trained CHWs by 25% over a 5 year period	⬆ # of RDTs conducted by 10% in 2 years ⬆ % children under 5 who receive seasonal malaria chemoprevention (SMC) by 30% over a 5 year period	⬆ # rural/highland communities in the eastern part of the country with a PHCs by 10% over a 5 year period	Development of national CHW training program in a 2 year period
HOW do you plan to accomplish this?	Recruit and train new CHWs; Provide updated training to all CHWs as needed	Increase purchase and distribution of RDTs and SMC	Strategic planning for locations of new PHCs	Continue strengthening relationship with MoH
Possible Indicator	⬆ funding for CHW recruitment and training by 30% over a 5 year period	⬆ funding for RDTs by 12% over a 2 year period ⬆ funding for SMC by 35% over a 5 year period	⬆ funding for construction and maintenance of PHCs by 15% over a 3 year period	Meet with the MoH at least once every 4 months throughout a 5 year period

Community health workers (CHWs) can bridge the health care system to local communities. In 2013, CHWs were recruited to test for and treat malaria in children under five at the community level.[1] In 2017, there were 12,000 CHWs in Burundi who were loosely associated with public health centers and provincial health offices.[1,10] Despite some good results, the CHW approach is hindered by weak integration of CHWs into the health system, lack of supervision, insufficient training, and a lack of a community information system.[10] Projects funded by this grant would work to establish a formal relationship between CHWs and the existing health system. Particularly, public health centers would be tasked with supervising CHWs and being the point of contact between CHWs and district health offices. The district health offices are overseen by provincial health offices, which are overseen by MoH.[10] By working with the MoH, CHW training will be standardized and then implemented by the provincial and district health offices.

The highest malaria incidence rates in 2019 were seen in the eastern provinces, which also happen to be poorer and have fewer medical facilities than other parts of the country.[3,7] Therefore, strategically building public health centers in rural and highland areas of the eastern provinces will increase access to health care in these underserved areas and help facilitate the distribution of preventative and curative health supplies to these areas. This will also increase the capacity of these regions to support CHWs.

CHWs and health centers would not be able to function without adequate supplies. Two important supplies that can be used at the community level and in PHCs and that will help reduce the morbidity and mortality caused by malaria are rapid diagnostic tests (RDTs) and seasonal malaria chemoprevention (SMC). Malaria is less likely to have severe consequences if caught early.[20] Another advantage to early treatment is that it can prevent further transmission of malaria from human to mosquito.[20] Therefore, the use of rapid diagnostic tests (RDTs) for screening could reduce the morbidity and mortality due to malaria by confirming malaria cases and prescribing appropriate treatment earlier. This could also help communities monitor the number of cases they have so that if there is a rise in cases, resources can be deployed faster in order to minimize the outbreak. Furthermore, confirming cases is important to help reduce the number of malaria drug resistant cases due to unnecessary/excess treatment. Meanwhile, since young children have not yet developed partial immunity to malaria, the WHO recommends that SMC is used for children between 3-59 months in areas of high seasonal transmission of malaria.[4] Priority of these supplies will be given to areas that are most affected by malaria. This could help reduce the morbidity and mortality of malaria in children under five.

Context

In 2001, Burundi's government aimed to reduce malaria by improving data collection, implementing vector control measures (such as indoor residual spraying and distributing insecticide-treated nets), and changing the national treatment policy to ACT.[18] More recently, the 2013-2017 National Malaria Control Strategic Plan (NMCSP) added intermittent preventive treatment of pregnant women (IPTp) as a key intervention and recommended confirming malaria cases through microscopy or RDTs.[1] It also emphasizes increasing "national capacity to collect, analyze and use entomologic data to inform the country's national malaria control strategy and to monitor vector control activities."[1] Some of the goals of the 2016 National Health Strategic Plan (NHSP) are to reduce infant and child mortality, reduce mortality from communicable diseases, and strengthen the health system.[1] The NHSP ranks malaria control as the number one strategy to achieve its goals.[1] The most recent NMCSP for 2018-2023 has the goal of reducing the morbidity of malaria by 60% by 2023.[19]

Many international organizations, including WHO, USAID, and UNICEF, and the Global Fund, have been working with the MoH to prevent and treat malaria in Burundi. Their involvement has centered around building local capacity for malaria prevention and control measures, distributing long-lasting insecticide nets (LLINs), providing technical support, preparing mobile clinics, facilitating indoor residual spraying (IRS), funding ACT, and training health workers on new malaria treatment protocol.[1,21,22] One active Global Fund project is to provide global coverage in LLINs in Burundi.[22] The Global Fund has granted $46,826,625 (USD) for this project, which was started in 2017 and will end in 2023.[22]

The projects outlined in this proposal directly fit under the goals of the NHSP and NMCSPs by helping reduce mortality and morbidity of malaria in Burundi, reducing child mortality, and screening for and confirming all malaria cases through RDT. They also

complement the work that international organizations are doing by strengthening the community health system through a CHW program and expanding access to health care in underserved rural and highland areas in the eastern part of the country. Developing a national CHW training plan with the MoH will allow for training to be expanded to CHWs who will inform more communities. CHWs can also be used to facilitate IRS and distribute LLINs and antimalarial drugs. Furthermore, these projects will fill a gap in prevention specifically targeted for young children by funding and distributing SMC.

Barriers and Challenges

Armed conflict and ongoing instability are potential constraints that would hinder Burundi's ability to provide health services and reliably distribute health supplies.[18,19] By working with other organizations and the MoH, perhaps political agreements that protect health centers and hospitals from conflict could be negotiated. Furthermore, it is hoped that by building a CHWs program, communities will have access to someone who has some basic health training if health centers and hospitals are shut down.

Another potential barrier is that the government does not have a high capacity to invest in the health sector.[11] Since donor aid is the main source of funding of the health sector, this may reduce local capacity to direct policy and gains in health-system performance due to conflicting priorities of the various actors.[10,11] This could be addressed by working with the MoH and ensuring that partner organizations and the proposed projects align with national policy developed by the MoH. The CHW program will build local capacity by involving local community members that can then be responsible and advocate for their communities' health needs. Furthermore, integrating CHWs into the existing health system will make the connections that the MoH, provincial health offices, and district health offices have to local communities stronger and more sustainable.

Support of Global Fund Goals

One goal of this project is to establish a well-integrated CWH program in order to prevent and treat malaria and other health issues at the community level. The CWH program, along with establishing more public health centers in disadvantaged areas and providing reliable supplies of RDTs and SMC, will fulfill the Global Fund's goal of building resilient and sustainable systems by increasing access to health care and creating a structure for which community interventions can be carried out. Because CHWs are members of the communities they serve, they will also be able to be proactive, identify and efficiently address health issues, and respond to the specific needs of their communities. Furthermore, training and supervision will ensure that CHWs are working effectively.

The CHW program, along with providing reliable supplies of RDTs and SMC will maximize the impact of investments for malaria. Increasing access to and use of RDTs will help reduce the burden of disease due to malaria by catching and treating cases earlier, and thus helping prevent the spread of disease. They may also help identify malaria outbreaks sooner, thus resulting in quicker resource mobilization to stop larger outbreaks. Finally, providing SMC in high risk areas, will reduce the morbidity and mortality of malaria for children under five, who are particularly vulnerable to malaria infection.

Citations

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