

This Malaria Operational Plan has been approved by the U.S. Global Malaria Coordinator and reflects collaborative discussions with the national malaria control programs and partners in country. The final funding available to support the plan outlined here is pending final FY 2017 appropriation. If any further changes are made to this plan it will be reflected in a revised posting.



U.S. PRESIDENT’S MALARIA INITIATIVE



**PRESIDENT'S MALARIA INITIATIVE**

**BURUNDI**

**Malaria Operational Plan FY 2017**

## TABLE OF CONTENTS

<b>ABBREVIATIONS and ACRONYMS</b>	4
<b>I. EXECUTIVE SUMMARY</b>	6
<b>II. STRATEGY</b>	10
1. Introduction	10
2. Malaria situation in Burundi	11
3. Country health system delivery structure and Ministry of Health (MOH) organization	13
4. National malaria control strategy	16
5. Updates in the strategy section	17
6. Integration, collaboration and coordination	17
7. Progress on coverage/impact indicators to date	18
<b>III. OPERATIONAL PLAN</b>	21
1. Vector control and monitoring	21
a. Entomologic monitoring and insecticide resistance management	21
b. Insecticide-treated nets	23
2. Malaria in pregnancy (MIP)	25
3. Case management	28
a. Diagnosis and treatment	28
b. Pharmaceutical management	32
4. Health system strengthening and capacity building	34
5. Social and behavior change communication (SBCC)	36
6. Surveillance, monitoring and evaluation (SM&E)	37
7. Operation research	39
8. Staffing and administration	39
Table 1: Budget Breakdown by Mechanism	41
Table 2: Budget Breakdown by Activity	42

## ABBREVIATIONS and ACRONYMS

ACT	Artemisinin-based combination therapies
ANC	Antenatal care
AS-AQ	Artesunate-amodiaquine
CAMEBU	<i>Centrale d'Achat de Médicaments Essentiels du Burundi</i>
CCM	Country Coordinating Mechanism
CHW	Community health worker
CSO	Civil society organization
DHS	Demographic and Health Survey
DHIS2	District Health Information System 2
DPML	<i>Department de Pharmacies, Medicines et Laboratoires</i>
DSNIS	<i>Direction du Système National d'Information Sanitaire</i>
EPI	Expanded program on immunization
EU	European Union
EUV	End-use verification
FY	Fiscal year
GAVI	The Vaccine Alliance
GDP	Gross domestic product
GESIS	<i>Gestion du Système d'Information Sanitaire</i>
Global Fund	Global Fund to Fight AIDS, Tuberculosis and Malaria
GoB	Government of Burundi
HMIS	Health management information system
iCCM	Integrated community case management
IDA	International Development Assistance
IPTp	Intermittent preventive treatment for pregnant women
ISTEEBU	<i>Institute Statistique et d'Etudes Economique du Burundi</i>
ITN	Insecticide-treated mosquito net
IRS	Indoor residual spraying
KIRA	Health System Support Project (World Bank)
M&E	Monitoring and evaluation
MICS	Multiple Indicator Cluster Survey
MIP	Malaria in pregnancy
MIS	Malaria Indicator Survey
MOH	Ministry of Health
MOP	Malaria operational plan
NMCP	National Malaria Control Program (in Burundi PINLP)
NGO	Non-governmental organization
OCHA	United Nations Organization for Coordination of Humanitarian Affairs
PBF	Performance-based financing
PMI	President's Malaria Initiative
PR	Principal Recipient
RDT	Rapid diagnostic test
SBCC	Social and behavior change communication
SM&E	Surveillance, monitoring and evaluation
SOP	Standard operating procedures
SP	Sulfadoxine pyrimethamine

TES	Therapeutic efficacy study
UN	United Nations
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization

## I. EXECUTIVE SUMMARY

The Republic of Burundi, located in the Great Lakes region of Central Africa, has an estimated population of 11.18 million (2009 census projection), an average life expectancy of 50.1 years<sup>1</sup>. Gross National Income per capita is \$691 rendering Burundi 184 out of 188 on the Human Development Index (2016). Burundi emerged from over a decade of protracted civil war in 2000, with the signing of the Arusha Peace Accord. Burundi's first democratic election after the civil war was held in 2005. However, in recent years the political climate in Burundi has been unstable following a disputed presidential election result in 2015, a controversial movement to change the Burundi Constitution and reported human rights abuses. This has resulted in an out flow of Burundians to neighboring countries including refugee camps, and the withdrawal of both development assistance from several key donors and general investment. However, in May 2017, the United States Government revised the security advice for Burundi thus allowing Non-Essential Adult Family Members to join their spouses in post. The United States Agency for International Development (USAID) Health Team is fully staffed with the recruitment of a Senior Malaria Adviser, Reproductive and Child Health Adviser, and Health Team Lead in the first half of 2017 with support from an International Acquisition and Accounting Officer.

The health profile of Burundi, as indicated in the preliminary results of the Demographic and Health Survey (DHS) 2016, shows the Infant Mortality Rate has decreased from 59 in 2010 to 47 per 1,000 live births and the Total Fertility Rate has dropped from 6.4 to 5.5. The use of services indicates access (geographical, cultural, and financial) is high: The proportion of women delivering at a health facility is 81% and 85% of children under one year of age are fully vaccinated. However, the health status remains poor with over 50% of children under 5 years of age stunted, 5% with severe malnutrition and 29% underweight.

Malaria is considered the most serious public health problem in Burundi. In March 2017, the Burundi Ministry of Health declared a malaria epidemic. Malaria cases increased from 2.6 million in 2013 to 8.3 million in 2016 with a further increase of 18% from 2016 levels in the first half of 2017. Of these cases 99.5% were confirmed by microscopy or rapid diagnostic test with positivity rates of 66.7% nationwide. An increase of malaria cases has been reported in neighboring countries but not to the incidence rates found in Burundi. The case fatality has reduced from 0.1% (2012) to 0.04% (2016)<sup>2</sup> in spite of the increase in caseloads due to early diagnosis at community level and prompt referral upwards for complicated malaria. Preliminary results from the DHS 2016 report insecticide-treated mosquito net (ITN) use is low while reports from the USAID supported entomological sentinel sites indicate an increase in the number of mosquitoes in and around the houses sampled, reaching over 4,000 at some households during a 12-hour period. Indoor residual spraying (IRS) was only conducted in 4 of the 47 Health Districts in FY 2016, funded through the Global Fund to Fight AIDS, Tuberculosis, and Malaria (Global Fund). World Vision is planning to spray an additional five Health Districts.

In fiscal year (FY) 2009-2016 USAID and the Global Fund contributed 80% of the funding for malaria control in Burundi. In response to the declaration of a malaria epidemic by the Ministry of Health on 13 March 2017 on the recommendation of the World Health Organization (WHO), new partners provided financial, logistical, and technical support. The proportion of USAID funding to malaria control in 2017 was 33% of total funding, 63% of funding was provided by combined funds from USAID and the Global Fund (including the mass ITN distribution campaign). The total funding figure excludes technical assistance from WHO and humanitarian non-governmental organizations (NGOs).

---

<sup>1</sup> [www.isteebn.bi/index.php/economie-en-bref](http://www.isteebn.bi/index.php/economie-en-bref)

<sup>2</sup> HMIS

Coordination efforts were improved with the establishment of an epidemic response task force chaired by the Minister of Health and co-chaired by WHO, with eight sub groups for each malaria control area. The epidemic response plan contained case management, preventative interventions, surveillance and social mobilization, as well as planning and coordination components.

This Malaria Operational Plan (MOP) was developed in line with the priorities of the Ministry of Health taking into account both the increase in malaria cases, the vector presence, and the strengthened coordination efforts including with new partners. Following a visit from team members from USAID/Washington, USAID/Burundi conducted stakeholders' meetings and consulted with the financial donor health group. The activities that USAID is proposing to support with FY 2017 funding conform to the National Malaria Control Strategic Plan (2013-2017) for Burundi and the epidemic response plan and were developed concurrently with the Global Fund continuation proposal. The FY 2017 budget for Burundi is \$9 million.

**Entomologic monitoring and insecticide resistance management:** Burundi's long-term vector control management goal includes 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 in Burundi. While national entomology capacity remains limited, progress has been made over the last few years. With USAID support, an insectary was established in Bujumbura and a total of eight sentinel surveillance, entomologic, and monitoring sites have been established and have trained technicians. Burundi continues to report on a quarterly basis on vector behavior to guide programmatic decisions. With FY 2017 funding, USAID will continue to support building national entomology capacity through training, while maintaining support for surveillance and insectary activities.

**Insecticide-treated nets (ITNs):** Access to and use of ITNs is a crucial component of Burundi's malaria prevention strategy. In FY 2016 a mass distribution campaign is planned with the Global Fund funding and technical support from USAID. The previous national campaign was held in 2014 during which over five million ITNs were distributed. Reduced malaria caseloads were reported for six months following distribution and doubled in the year following distribution (2015). The goal is to achieve and maintain universal ITN coverage by providing one ITN per two people. Routine distribution via antenatal care clinics (ANC) to pregnant women and to children during immunization services continued in FY 2016. Preliminary results of the DHS indicate that possession of a mosquito net reduced from 52% (2010) to 46% (2016) and possession of a mosquito net for every two persons decreased from 23% (2010) to 17% (2016). Utilization of mosquito nets by pregnant women and children under 5 years of age also fell between DHS 2010 and the preliminary results from 2016 from 45% to 40% (children under 5 years of age) and 50% to 44% (pregnant women). With FY 2017 funding, USAID will procure and distribute over 900,000 ITNs for at ANC and immunization service delivery. In addition, activities to promote ITN utilization following the mass distribution ITN campaign will be conducted in line with Ministry of Health policy.

**Malaria in pregnancy (MIP):** In March of 2015, following several years of extensive support from USAID and the United Nations Children's Fund (UNICEF), Burundi launched intermittent preventive treatment of pregnant women (IPTp) as national policy, adding it to the package of services available through ANCs. Sulfadoxine-pyrimethamine (SP) is procured through the Global Fund grants and is provided at all health centers providing ANC services on a directly observation basis. Acceptance by women is reported to be high. The preliminary data from DHS 2016 indicates that while 49% of women attend 4 ANC visits only 13% of pregnant women receive 3 doses of SP. With FY 2017 funding,

USAID will continue to provide supportive supervision within the four USAID focus provinces: Karuzi, Kayanza, Kirundo, and Muyinga.

**Case management:** The national policy on malaria case management recommends confirmed diagnosis of all suspected cases through either microscopy or rapid diagnostic tests (RDTs), and prompt treatment with an efficacious antimalarial drug for all confirmed cases. The current guidelines, which USAID helped to revise and update, recommend the use of RDTs in 90% of all diagnostic needs. The 2016 End Use Verification (EUV) survey in children under five years of age, reported 65% of fever cases were tested with RDTs with 34% tested using microscopy tests.<sup>3</sup> All health centers are equipped with a microscope. For treatment, a fixed-dose of artesunate-amodiaquine (AS-AQ) is used to treat uncomplicated cases of malaria, while injectable artesunate is used as first line treatment of severe malaria. Community case management of malaria has been scaled-up to 30 out of 47 health districts. The most recent EUV (October 2016) indicated approximately 89% of children under five years of age that were confirmed to have malaria received an artemisinin based combination therapy (ACT) and 81% of facilities had at least one staff member trained in case management and stock management.

With FY 2016 funding USAID secured 5,127,800 RDTs and 5,146,850 ACTs. While there were delays in delivering USAID procured ACTs in Burundi the contribution of UNICEF secured the stocks at central and district level. Support in the strengthening of the national supply chain system continued in FY 2016 with the appointment of a supply chain logistics manager and warehouse maintenance officer. Improved pharmaceutical management via coaching, mentoring, and supervision at the national, district, and health facility levels will continue in FY 2017.

**Health systems strengthening and capacity building:** USAID is committed to providing the National Malaria Control Program (NMCP) with support to strengthen and sustain the program and national strategy, while emphasizing increased capacity development within the NMCP and key policy and structural reforms. In the past year, USAID has focused on support to the NMCP to manage and coordinate partners through quarterly reviews. With FY 2017 funding, USAID will support the development of the National Strategic Malaria Plan (2018-2022) and revision of the malaria treatment guidelines.

**Social and behavior change communication (SBCC):** Social and behavior change communication (SBCC) is a crucial part of the broader health and malaria strategy for Burundi. With support from USAID a new national communication strategy is being implemented. The SBCC sub-unit in the NMCP remains within the Monitoring and Evaluation (M&E) unit although not included in the official organigram. USAID supports SBCC through radio messages, theatre groups, leaflets, and routine health service provision in collaboration with the NMCP M&E unit through the Social Mobilization sub-group of the epidemic response. Key messages include utilization of ITNs, prompt action in seeking treatment, and correct measures to prevent the transmission of malaria and mitigate its impact during pregnancy. With FY 2017 funds USAID will continue to support the NMCP's SBCC activities through the social mobilization sub-group of the epidemic response plan and M&E unit.

**Surveillance, monitoring and evaluation (SM&E):** USAID support facilitated the development of a national surveillance, monitoring and evaluation (SM&E) plan for the National Malaria Strategic Plan 2013-17. In addition, USAID has been supporting the periodic gathering of additional malaria related data through the EUV survey (biannual) and supported the DHS (2016). Preliminary results were released in May 2017 with final results expected in July 2017. Finally, USAID has been training

---

<sup>3</sup> The EUV data represents 105 sites; it is not nationally representative.

NMCP, district and facility-level staff, to improve data collection and analysis. With FY 2017 funding, USAID will conduct biannual EUV surveys.

## II. STRATEGY

### 1. Introduction

The Republic of Burundi has been receiving United States Agency for International Development (USAID) Malaria funding since fiscal year (FY) 2009. This financial support is designed to complement the assistance from the Government of Burundi, the Global Fund to Fight AIDS, Tuberculosis, and Malaria (Global Fund) and other donors. Together, from 2009-2016, USAID and the Global Fund resources comprised over 80% of malaria control financing in support of Burundi's malaria strategy. A comprehensive package of malaria control activities including case management, entomological screening, mass distribution of insecticide-treated nets (ITNs) nationwide and routine distribution of ITNs to pregnant women and infants, behavior change communication, and indoor residual spraying (IRS). However, since 2013 the number of cases of malaria has increased significantly rising from 2.6 million cases (2013) to 8.2 million cases in 2016<sup>4</sup>. A malaria epidemic was announced by the Minister of Health on March 13, 2017. This announcement was made in response to the World Health Organization criteria for determining an epidemic and supported by all development partners in Burundi.

Burundi emerged from over a decade of protracted civil war in 2000, with the signing of the Arusha Peace Accord. Burundi's first democratic election after the civil war was held in 2005. However, Burundi is facing a new upsurge of political instability and violence brought about when the President sought and won a third term in office in a disputed election in 2015.

Until May 2017, USAID Burundi was designated as a post limited to adult dependents over 21 years of age who were employed at the U.S. Embassy. Despite the restrictions, a Senior Health Team Lead, Reproductive and Maternal Child Health Specialist, and Senior Malaria Adviser were recruited in the first half of 2017 to support the existing health team in country. Additional support to the team included a newly recruited international Acquisition and Assistance Specialist and Monitoring and Evaluation (M&E) Specialist. However, international non-governmental organizations (NGOs) have expressed challenges in recruiting senior international positions in country. The remaining challenges in Burundi pertain to new governmental directives imposed on NGOs, high turnover of key senior government officials, and delays in implementation. Changes in implementing partners always causes disruption but this is exacerbated in an unstable political climate in which obtaining NGO registration and acquiring visas for international experts hamper implementation of activities.

The activities that USAID is proposing in FY 2017 are in line with the new priorities of the Burundian Ministry of Health and the additional support from other donors to respond to the epidemic with the goal of reducing malaria incidence to pre-2013 levels. This Malaria Operational Plan (MOP) was developed concurrently with the Global Fund new proposal and in consultation with the National Malaria Control Program (NMCP) and with the participation of national and international partners involved in malaria prevention and control in the country. This document highlights the changing environment in terms of factors contributing to the epidemic, epidemiological and entomological evidence, changes in health-related behaviors, and new strategic responses developed collaboratively by government and development partners.

The total amount of USAID malaria funding for Burundi in FY 2017 is \$9 million.

---

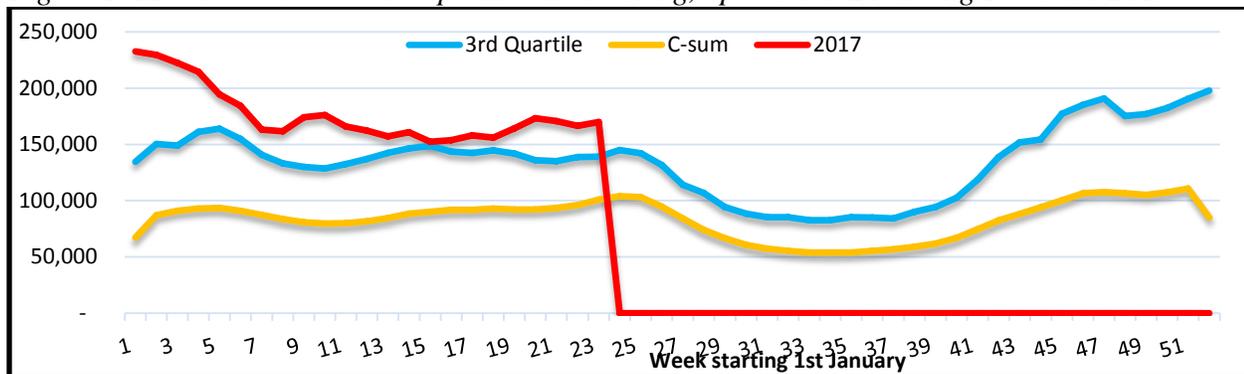
<sup>4</sup> Weekly Malaria Epidemic Threshold (HMIS)

## 2. Malaria situation in Burundi

Malaria has been considered a major public health problem in Burundi for many years and places a heavy burden on the health system. The number of malaria cases in 2016 reached epidemic<sup>5</sup> levels rising from 2.6 million (2012) to 5.3 million (2015), to a high of 8.2 million in 2016.<sup>6</sup> The Ministry of Health's (MoH) epidemic announcement triggered a collaborative approach from existing and new development partners to respond to the request for financial, technical, and logistical support. This FY 2017 MOP, therefore, presents a detailed implementation plan for USAID support to contribute to enhanced malaria control in Burundi, based on the national epidemic response plan (*Plan de Riposte contre les Epidemies de Paludism au Burundi*) and Burundi's National Malaria Control Strategic Plan (2013-2017) (*Plan Strategique Nationale de Lutte Contre le Paludism 2013-2017*).

Burundi's caseload exceeded an epidemic level for each week in 2016 and all weeks of 2017 except week 15 (Figure 1). In 2017, malaria cases were monitored weekly, comparing each week with the same period in the previous years. This data showed an average increase of 18% over the first 23 weeks of 2017. However, in mid-April the national average number of cases fell for the first time below the number of cases in 2016 but increased in subsequent weeks. Either microscopy or rapid diagnostic test (RDT) (99.5%) confirms almost all cases reported as malaria. National positivity rates are 66.7% with a range of 30% to 81% at Health District level<sup>7</sup>. Despite the internal disruption caused by the civil unrest, Burundi has maintained a fairly well functioning health system. Despite the increased case-load, the case fatality rate has *decreased* from 0.1% (2012) to 0.4% (2017)<sup>8</sup>, demonstrating that case management efforts remain strong. The scale up of performance-based financing (PBF) at the community level starting in 2018, as a result of a previous pilot, should further enhance the health system<sup>9</sup>.

Figure 1. Malaria caseload and epidemic monitoring, up to week 24 ending 10<sup>th</sup> June 2017<sup>10</sup>



*3<sup>rd</sup> quartile of the same week in the past five years.*

*C-sum: sum of the week described plus the week before and after for the past five years divided by 15.*

<sup>5</sup> This epidemic was calculated using two approaches. Firstly, by calculating the third quartile of the sum of cases for the previous five years and secondly by adding the sum of the week in question, the week before and after for the past five years and dividing by 15

<sup>6</sup> Weekly Malaria Epidemic Threshold (HMIS)

<sup>7</sup> HMIS 2016

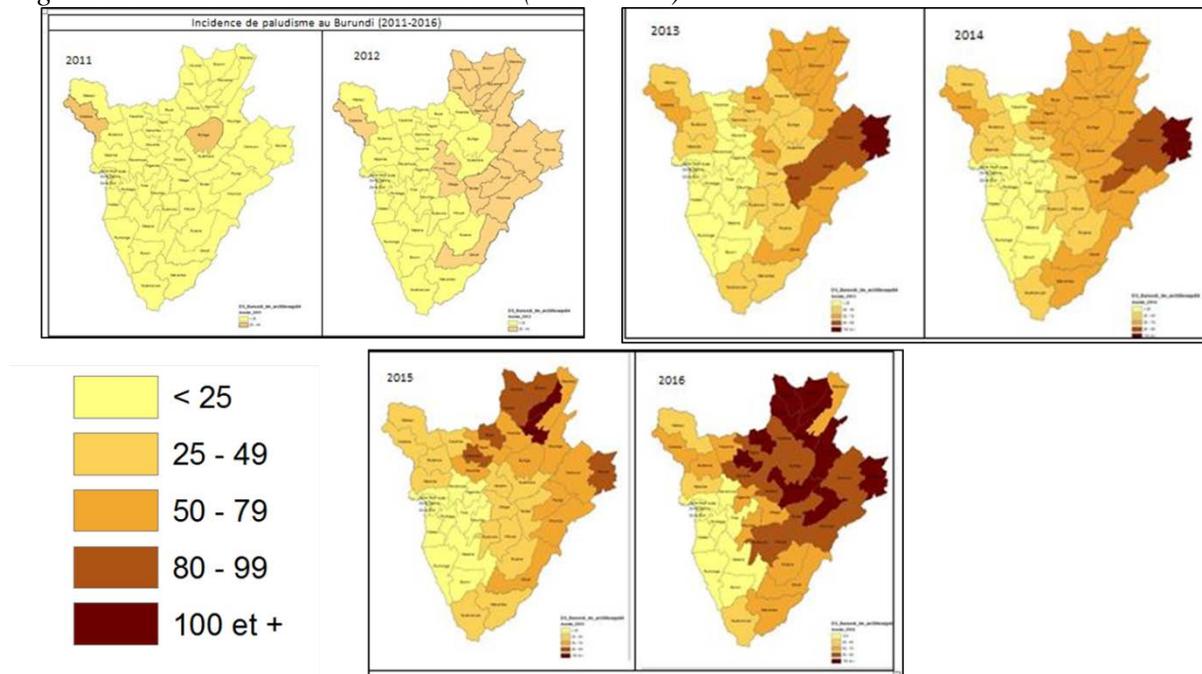
<sup>8</sup> HMIS

<sup>9</sup> Burundi- Health System Support Project (IDA/R2017-0015)

<sup>10</sup> Weekly Malaria Epidemic Threshold (HMIS); 2017 line drops because at time of writing data past week 25 had not yet been reported

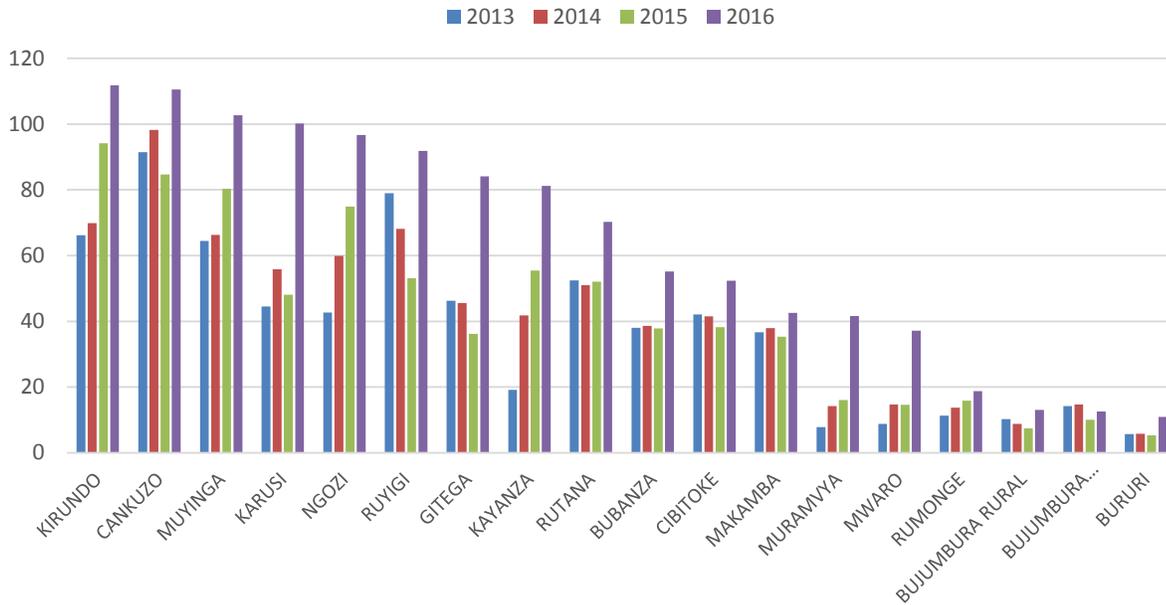
Before 2012, reported cases in the highlands were below 50 per 1000 population, since then there have been increasing trends of epidemic outbreaks in the central highlands - exposing non-immune populations in eight provinces (average altitude 1,756 meters) (Gitega (1,601m), Karuzi (1,662m), Kayanza (1,957m), Muramvya (1,925), Muyinga (1,731m), Mwaro (1,808m), Ngozi (1,820m), and Cankuzo (1,540m) compared with 750 meters on the shores of Lake Tangyanika (Figure 2).

Figure 2. Malaria incidence in Burundi (2011-2016)



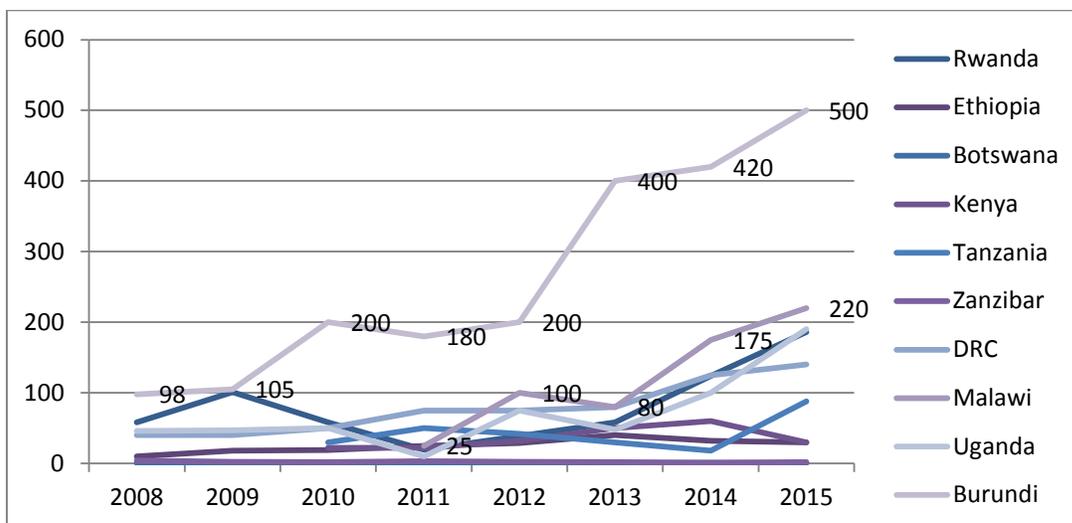
Malaria cases increased to over one episode per capita in three districts (Kirundo, Cankuzo and Muyinga) situated in the North and North West of Burundi. Each of these districts is situated at an average altitude between 1,300 to 1,731meters above sea level with large variations between the hills and valleys. An additional five districts showed incidence rates of 80-100. These included Ngozi, Ruyigi, Gitega and Kayanza, again, in high altitude areas ranging from an average of 1,601 to 1,957 meters. Increases of over 100% from 2013 levels were experienced in Karuzi, Ngozi, Gitega Muramvya, Mwaro, and Kayanza (Figure 3).

Figure 3. Incidence of malaria in Burundi per Province (2013-2016)



There has also been an increase in malaria incidence in other countries in the Central and East Africa Region of Africa. The World Health Organization (WHO) collects data for the number of cases and the number of deaths adjusted for population growth globally. Analysis of this data from 2008 to 2015 shows that while many neighboring countries experienced an increase in malaria cases in recent years the burden of malaria per population in Burundi (500 per 10,000 inhabitants) was almost double that of the country (Malawi) reporting the second highest incidence rate (220 per 10,000 inhabitants) Figure 4 shows data from nine countries.

Figure 4. Number of cases per 10,000 population (selected countries in the region)<sup>11</sup>



NB. Rwanda data from 2008-2014 uses current population data

<sup>11</sup> WHO World Malaria Report 2016

### 3. Country health system delivery structure and Ministry of Health organization

The Republic of Burundi is a small, densely populated country in the Great Lakes region of Central Africa bordered by Rwanda to the north, Tanzania to the south and east, and the Democratic Republic of the Congo to the west. Although the country is landlocked, it borders Lake Tanganyika to the southwest. Burundi is a member state of the East Africa Community, which is comprised of Burundi, Kenya, Rwanda, Tanzania, and Uganda. The country is divided into 18 provinces, 129 *communes* (5-11 per province) and 3,061 *collines*. Provincial administrations are structured upon these boundaries. Under the 18 Provinces there are 47 Health Districts with an average population of 150,000 each. Bujumbura is divided into two provinces, Bujumbura and Bujumbura Mairie, consisting of three urban *communes*.

A new health policy was developed and approved in 2016. This policy covers a five-year period from 2016 to 2020. The National Health Strategic Plan (*Plan National de Développement Sanitaire II 2011-2015*) was designed to implement the national health policies and specifically to address the Millennium Development Goals and expired in 2015. However, without any review or revisions to adapt to the changing situation, this plan was extended for a three-year period until 2018. The primary goals outlined in the Burundian health strategic plan (*Plan National de Développement Sanitaire II 2011-2015*) are to: reduce maternal and neonatal mortality; reduce infant and child mortality; reduce mortality from communicable diseases; and, strengthen the health system. The current National Health Policy places malaria control as first among eight strategies aiming to meet these goals and achieve the new Sustainable Development Goals.

The Ministry of Health (MoH) is organized into three levels with well-defined roles and responsibilities to implement the ambitious, national health strategy. The central level is comprised of the Minister and the Heads of Departments and Services who are tasked with setting policies and guidelines. The intermediate level is composed of the 18 health provinces that are administered by a Provincial Bureau, headed by a Chief Medical Officer. The tertiary level is composed of 47 Health Districts that are managed by Health District teams. Each Health District team is normally led by a physician, and composed of three supervisors, a health information system or data manager, an administrative officer, a drug stocks manager, an accountant, an administrative assistant, a driver, and up to three clerks.

Decentralization to the provincial and district levels is in effect as of 2014. Under the decentralization plan, the provincial health departments regulate and supervise district-level offices to ensure compliance with the central MoH level. The district-level offices oversee the delivery of health care services in the health centers and in turn the community. Provincial and District health departments are responsible for implementing and coordinating activities within their health zones. Each district has a district hospital and peripheral health centers. The primary level is composed of district-based health centers, staffed by nurses who provide preventive and curative interventions for the population.

The epidemic response had selected eleven districts<sup>12</sup> of the northern and eastern provinces of the country most affected by the increase in malaria cases for intensified interventions. One of the interventions is the identification of locations for additional treatment sites attached to each health center. These are at settings convenient to the public (e.g. schools and other public buildings) from

---

<sup>12</sup> Ngozi, Cankuzo, Muyinga, Ruigi, Kirundo, Karusi, Gitega, Kayanza, Rutana, Cibitoke, Buzanza,,

where health workers provide treatment to those who have fever or report to have had fever in the past 24 hours. The MoH was considering presumptive treatment (using the current first line treatment AS-AQ) in sites where the positivity rate is currently over 70%, but at the time of writing has decided to continue treatment based on confirmed malaria. In the meantime, health centers have been encouraged to use RDTs in place of microscopy tests as a first-line diagnostic tool to reduce congestion at the health centers. This is in line with the national diagnosis and treatment guidelines.

Burundi also supports integrated community case management (iCCM) where community agents appointed by their communities have been trained in treatment of three diseases, malaria, pneumonia, and diarrhea for children under five years of age. A set of tools including treatment algorithm, data reporting register, referral note template, and stock-management reporting cards were designed with technical and financial support from USAID, in collaboration with other development partners and adopted by the MoH. All implementing partners supporting iCCM use these tools.

The MoH adopted performance-based financing (PBF) countrywide in 2010 to strengthen the health system with the aim of improving quality of care and retaining key personnel. The next PBF project (Health Systems Support Project) due to commence in 2018 includes community PBF based on the pilot in three districts<sup>13</sup>. This will transition the current ad hoc payments to community agents to payments based on workload and quality of services. The Burundi PBF was the second country in Africa to scale up nationwide with good results<sup>14</sup>. In 2017 key donors continued to support the PBF even as government funding was reduced. A key new donor proposing to co-fund the PBF is The Vaccine Alliance (GAVI) for both the health center PBF and the proposed community PBF.

The economic situation in Burundi has deteriorated as international aid and investments dwindled, businesses closed down, and key exports (e.g. coffee) declined. The allocation of national budget to health in 2016 and 2017 was 6.3%, a decrease from 11% in 2012-14<sup>15</sup>. The most recent National Health Accounts was conducted in 2014. At this time, donors, the Government of Burundi, and private expenditures on health were each one quarter of total expenditures on health while out of pocket expenditure was 11% and NGO expenditure 13%<sup>16</sup> (Figure 5). National Health Accounts and Public Expenditure Reviews have not been conducted since 2014. The shrinking national budget and reduced allocation to health has compromised quality of health services. Furthermore, Burundi has been classified by the Global Fund as a country that is in a *High-Risk Environment* and falls under the *Additional Safeguard Policy* strengthening fiscal control and oversight of the grant.

---

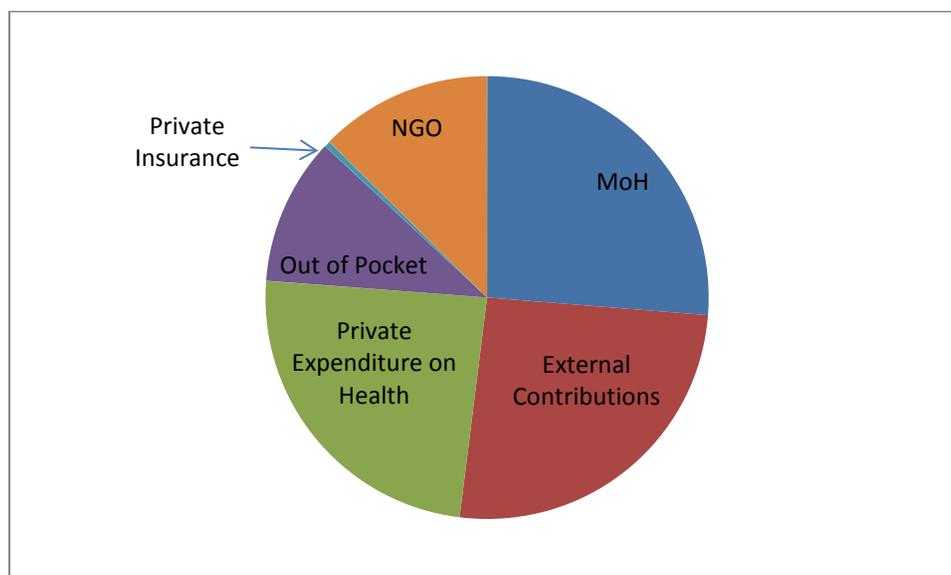
<sup>13</sup> *Evaluation finale du projet pilote FBP Communautaire au Burundi. Rapport Final*, December 2005

<sup>14</sup> *Improving Health System Efficiency: Reforms for improving the efficiency of Health Systems: lessons from 10 country cases* (2015) Yip, Hafez.

<sup>15</sup> Budget law 2012-2017

<sup>16</sup> Burundi NHA 1995-2014

Figure 5. Expenditure on Health, Burundi by category of organization in 2014<sup>17</sup>.



Other than personnel emoluments, the majority of funding for malaria control interventions comes from external donors such as USAID (26%), the Global Fund (44%), with additional epidemic resources being provided by WHO (1%), UNICEF (13%), World Vision (6%), World Bank<sup>18</sup> (3%), and NGOs (7%). This excludes Technical Assistance provided by WHO. In addition, support to community agents and health centers to facilitate malaria case management and prevention is provided through the World Bank, Belgium Bilateral, European Union (EU), and GAVI through the PBF.

#### 4. National malaria control strategy

Burundi's third national malaria strategy (*Plan Stratégic National de Lutte Contre le Paludisme 2013-2017*) currently guides programming but is due for review and update in 2017. With the support of the Government of Burundi and partners, the NMCP's strategy subscribes to the key malaria priorities and activities of universal coverage, improved diagnostics through RDT use, increased communication activities, provision of free, first-line malaria treatment, and free case management of severe malaria for children under five years of age and pregnant women.

Burundi's stated goal to reduce malaria morbidity and mortality by 75% from 2013 levels by 2017 was not achieved. Cases increased from 2.3 million to 8.5 million by 2016 and are predicted to reach over 10 million in 2017, with an increase of 18% in 2017 already reported<sup>19</sup>. The strategy is comprised of seven thematic areas: 1) case management, 2) malaria in pregnancy, 3) integrated vector control management, 4) epidemic surveillance, 5) communication, 6) monitoring and evaluation and operational research, and 7) capacity building of the national program. Each area has its own specific goals and objectives.

<sup>17</sup> *National Health Accounts 2014*

<sup>18</sup> World Bank contributions were not included in the Gap Analysis Tables as confirmation was not obtained at the time of writing this MOP

<sup>19</sup> Weekly Malaria Epidemic Thresholds (HMIS)

## **Case Management**

The principal objectives of malaria case management are to minimize severity and complications from malaria infections, thus reducing morbidity and mortality among vulnerable populations, and to increase access to appropriate, timely diagnosis and prompt treatment for people with malaria. The key requirements to achieve these objectives are to have an efficacious first-line treatment administered within 48 hours of onset of symptoms to people with confirmed uncomplicated malaria through either a RDT or microscopy and that those with symptoms of severe malaria are promptly referred to a hospital.

## **Malaria in Pregnancy**

IPTp has been scaled up to new provinces progressively, since being launched in 2015. This new intervention is a complement to the distribution of ITNs to pregnant women, providing a more comprehensive package of malaria prevention tools to this vulnerable population. The aim is for all pregnant women to receive at least three doses of SP during antenatal care clinic (ANC) visits, with doses being administered under direct observation of the health worker, as frequently as monthly intervals, starting in the second trimester, up to the day of delivery.

## **Integrated Malaria Vector Control**

Burundi's objectives for integrated vector control are: 1) ensure universal coverage of ITNs with at least 80% use, 2) maintain 100% coverage of households in targeted epidemic-risk districts receiving indoor residual spraying, and 3) establish and operationalize an entomologic surveillance system.

## **Epidemic Surveillance**

The main objective is for the program to develop a surveillance, detection, and alert system containing mapped, high-risk zones with the goal of detecting 100% of epidemics. The WHO are conducting weekly surveillance and reporting to the task force using the epidemic thresholds as a guide for each district.

## **Communication**

The primary objective under this theme is to ensure that at least 90% of the population will be aware of and adopts the appropriate use of malaria prevention and treatment interventions.

## **Monitoring and Evaluation**

The objective of this theme is to strengthen monitoring and evaluation of malaria control interventions, activities, policies, and strategies and to ensure that at least 80% of decisions are made using available evidence.

## **Capacity Building**

The principal objective is to strengthen capacity in program management, resource mobilization and coordination at all levels.

## **5. Updates in the strategy section**

The National Malaria Control Strategic Plan (2013-2017) was designed when annual malaria cases were below two million per year. While this national malaria strategy remains the cornerstone for planning and budgeting for malaria control activities, a response plan for the epidemic (*Plan de Riposte contre L'épidémie du Paludisme au Burundi*) was developed. Since the malaria control strategy does not contain a detailed contingency plan in epidemic circumstances, the epidemic response plan takes precedence over the national malaria strategy for planning activities for 2017 and 2018. This response

plan includes a sub-set of activities from the strategic plan such as routine testing and treatment including treatment of children under five years of age by community agents, the mass distribution of ITNs in July 2017, routine distribution of ITNs during ANC, and expanded program on immunization (EPI) clinics, and IRS in all epidemic-prone districts. The intervention not detailed in the national strategy but included in the epidemic response is the use of additional treatment sites in epidemic-affected health districts. Enhanced social mobilization and communication are included with planning taken down to the district level (*microplanification*). The World Health Organization (WHO) is co-leading the epidemic response with the Ministry of Health. The chair of the task force is the Minister of Health and the co-chair is the WHO Malaria Control Officer. Microplanning at district level has set out the interventions required in the short, medium, and long term to address the increased number of malaria cases in each health district. National Malaria Control Strategic Plan 2018-2022 development is expected to be completed by December 2017 when the current strategy expires. However, funding for FY 2017 will follow the current strategic plan (2013-17) and epidemic response plan.

## **6. Integration, collaboration and coordination**

The establishment of the Epidemic Response Task Force in January 2017 provided an effective forum for all government, health financers, and implementing partners to work together to establish both the financial and implementation gaps to reducing the malaria burden. This has greatly enhanced the collaboration of different donors and implementing partners as all work together on a single response including a set of interventions. Under the task force, eight sub-groups were established to work daily to ensure implementation of the epidemic response plan. The key actors are WHO, UNICEF, USAID (including implementing partners), the Global Fund, World Bank, World Relief, and World Vision. Other NGOs and humanitarian organizations are involved in the task force and ready to provide support as needed as coordinated through the United Nations Organization for Coordination of Humanitarian Affairs (OCHA). The EU and Belgium Bilateral arrangements and World Bank support the health systems predominantly through PBF, allowing for continuation of the activities of the community agents. Technical assistance is provided by USAID and WHO.

Following the declaration of the malaria epidemic on 13 March 2017, several partners including WHO, UNICEF, World Bank, World Vision, and Médecins Sans Frontières Belgique (MSF) procured ACTs and RDTs to supplement commodities from USAID and the Global Fund, to support the response plan. WHO provided technical assistance on entomology surveillance, data reporting, and case management reviews. USAID and the Global Fund will continue to supply commodities and support these technical interventions during and post-epidemic response.

The Global Fund's new funding model 2015-2017 comes to an end in December 2017. The continuation proposal (2018-2020) has been developed with support from USAID with a total budget of \$32 million for malaria activities. The proposal was submitted on 20 March 2017; feedback has been received from the Technical Review Panel of the Global Fund and is being incorporated into the revised version. The continuation proposal includes case management, including procurement of commodities and mass distribution of ITNs in 2020 as well as IRS in eleven districts. Health System Strengthening activities include support to CAMEBU (*Centrale d'Achat de Médicaments Essentiels du Burundi*), Health Management Information Systems, and surveillance and laboratory capacity building. A change in Principal Recipients (PR) structure is under discussion for the upcoming continuation grant. The current arrangement is that the PRs are the three national programs (HIV, TB, and Malaria) and two civil society organizations (CSOs). The Minister of Health and chair of the Country Coordinating Committee

(CCM) are proposing to replace the three programs with a single PR while maintaining the two CSOs. The grants are under additional safeguards under the revised Global Fund policy.

## 7. Progress on coverage/impact indicators to date

The preliminary results from the DHS show that ITN access and utilization has fallen. The proportion of children under five years of age with fever in the past two weeks who received an ACT has remained fairly constant between the DHS 2010 and 2016 (Table 1).

Table 1: Evolution of Key Malaria Indicators in Burundi 2005 to 2016

Indicator	2005 MICS	2010 DHS	2012 MIS	2016 DHS (preliminary results)	2017 Other sources
% Households with at least one ITN	8%	52%*	63%	46%	
% Households with at least one ITN for every two people				17%	
% Children under five who slept under an ITN the previous night	8%	46%	53%	40%	
% Pregnant women who slept under an ITN the previous night	N/A	50%	56%	44%	
% Households in targeted districts protected by IRS **					78%
% Children under five years old with fever in the last two weeks for whom advice or treatment was sought				69%	
% Children under five with fever in the last two weeks who had a finger or heel stick				66%	
% Children receiving an ACT among children under five years old with fever in the last two weeks	N/A	12%		11%	
% Women who received two or more doses of IPTp during their last pregnancy in the last two years *	N/A	N/A	N/A	21%	

\* IPTp was not policy in Burundi until 2014.

\*\*WHO Weekly Malaria Bulletin/ Burundi April 2017

### III. OPERATIONAL PLAN

#### 1. Vector monitoring and control

##### NMCP/USAID objectives

According to the National Malaria Control Strategic Plan (2013-2017) for Burundi, the vector control interventions include the distribution and promotion of the use of insecticide-treated nets (ITNs) and indoor residual spraying (IRS). The strategy also describes larviciding, but only in specific, well-defined situations. USAID supports the strategy by focusing on the procurement and distribution of ITNs via routine distribution through antenatal care clinics (ANC) and child vaccination services, as well as in building capacity in entomologic monitoring and surveillance.

##### **a. Entomologic monitoring and insecticide resistance management**

##### Progress since USAID malaria program was launched

Since the start of the USAID malaria program in Burundi effort has focused on increasing the national capacity to collect, analyze, and use entomologic data to inform the country's malaria prevention and control program. The support includes establishing a functioning insectary (2013), and the opening of eight sentinel sites over the years which, due to instability, have operated at varying capacity. USAID support over this period includes training in entomology in order to ensure proper management of the insectary as well as the sentinel sites, and to build capacity at the National Malaria Control Program (NMCP) to use information to inform program implementation.

##### Progress during the last 12 months

USAID support continued to focus on building and maintaining improved capacity in entomology with the aim of enhancing vector control interventions. As part of continued capacity building efforts, a five-day refresher training with 27 participants was led in the areas of: Malaria entomology trapping and identification of *Anopheles* mosquitoes, field collections, age grading and ovary dissection, insecticide resistance (WHO tube test), reporting, and analysis and interpretation of entomological data. The insectary in Bujumbura continues to operate well despite constraints. Unfortunately, due to civil unrest it was not possible to visit and collect data from the eight sentinel sites (Mpanda, Mabayi, Kirembe, Vumbi, Cankuzo, Matana, Gihofi and Nyanza-Lac) from April 2015 to October 2016. Since then, six surveys have been conducted. The surveys used three different collection methods including pyrethrum spray catches, light traps, and human landing catches (Table 2). However, the renovation planned to expand entomological services for field-collected specimens and standard entomology tests have been delayed due to political instability and timing constraints.

The entomological situation, along with the WHO IRS study, illustrates that vector density and activity are the key drivers of the malaria epidemic. In Burundi the major vectors transmitting malaria are *An. gambiae* and *An. funestus*. These species account for just over 10% of the mosquito population found in and around the homes<sup>20</sup>. Since the last national mass distribution campaign of 2014 there has been an increase in the average number of vectors per house per night from 1,129.75 (Nov 2014 - Aug 2015) to 2,459.80 (Oct 2016 – Mar 2017) across the sentinel sites. Density ranges from 328 to 4,221 per house per night across all sites. Human biting over an eight-hour period also more than doubled from 8.83 (Nov 2014 – Aug 2015) to 19.21 (Oct 2016 - Mar 2017). The highest average number of bites per night in the sentinel sites rose from 14.42 to 45.81, with averages around 23.8% countrywide and a range of 0-

---

<sup>20</sup> The other species are *anopheles.brochieri*, *anopheles maculipalpi*, *anopheles marshali*, *anopheles rufipes*, *anopheles squamosis*, *anopheles ziemanni*, *anopheles culicines*

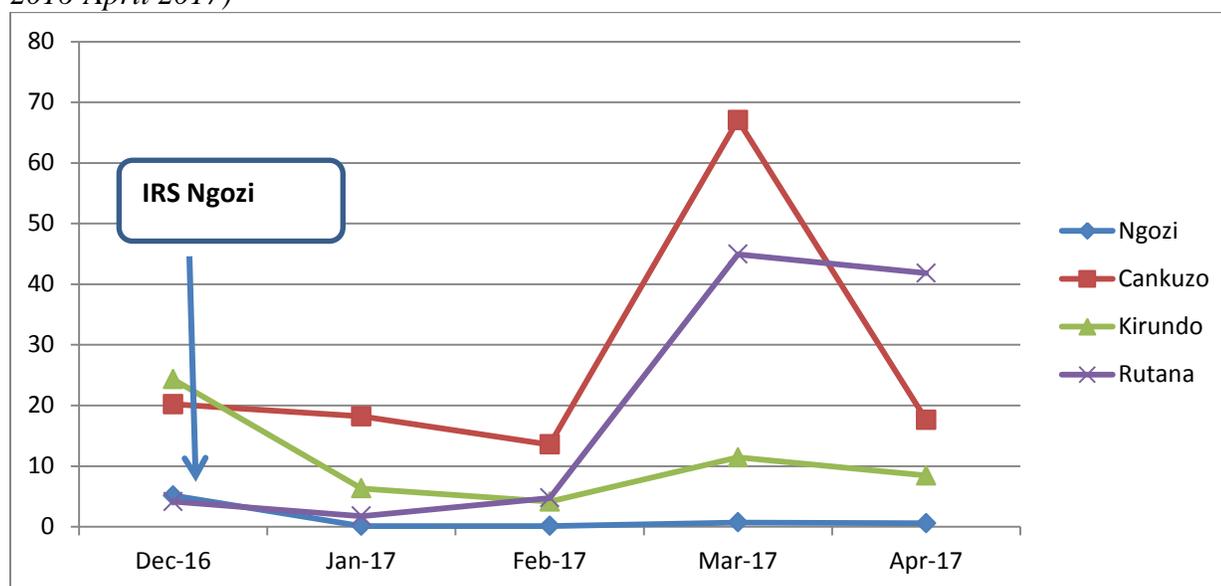
57). The parity rate, likelihood of the mosquito transmitting malaria, is 82% average countrywide with a range of 60-93%. Table 2 shows the vector situation in the six sentinel sites from November 2014 to March 2017<sup>21</sup>.

Table 2: Trends in vector density and human bites per night in sentinel sites (November 2014-March 2017)

Indicator	Nov 2014- Aug 2015		Nov 2015-Sep 2016		Oct 2016 - Mar 2017	
	Average	Range	Average	Range	Average	Range
Vector density	1129.75	114-1846	1108	224-1523	2459.8	328-4221
Human Bites per night	8.83	2.57-14.42	8.6	0-13.5	19.21	0.17-45.81

In the five months leading up to May 2017, human biting rates were calculated in the sentinel sites. Peak months were December and March with biting rates increasing from an average of 7.5 to 41.1 with the exception of Ngozi where IRS had been conducted in December 2016. In Ngozi, there was a decrease of 5.13 bites per night before IRS to 0.13 after the campaign and a rise to 0.69 during the peak month of March (Figure 6).

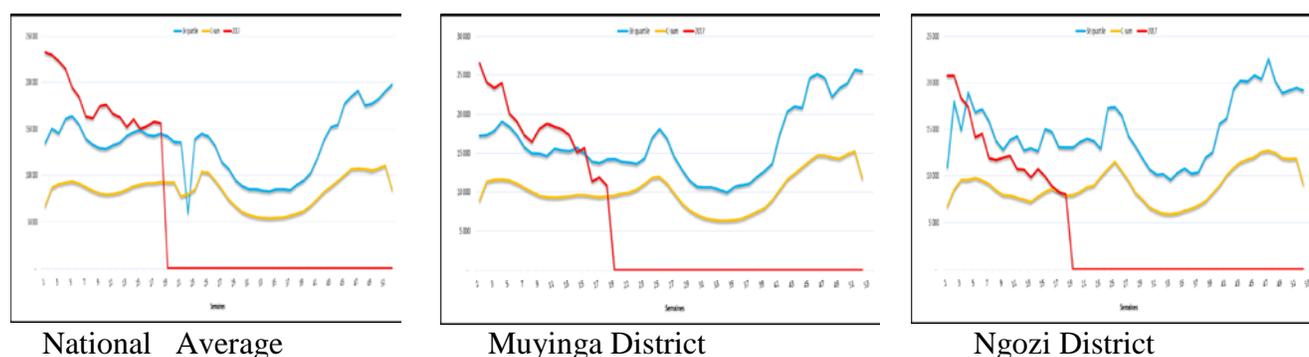
Figure 6: Human Biting Rate per person per night in four epidemic-prone districts, *An. gambiae* (Dec 2016-April 2017)



In addition, the burden of malaria in the districts where IRS was conducted, Ngozi and Muyinga, showed a decrease in the number of cases per week. These two districts' caseloads fell below epidemic level while the national caseloads remained above the epidemic threshold (Figure 7).

<sup>21</sup> Field work was not possible January and April to December 2015 and January to November 2016 due to civil unrest.

Figure 7: Malaria cases in districts where IRS was conducted compared with national averages (Jan-May 2017)<sup>22</sup>



Plans and justification

Using FY 2017 funding, USAID will continue to support entomological surveillance and monitoring activities as well as the insectary by providing specimens for susceptibility tests.

Proposed activities with FY 2017 funding: (\$150,000)

- *Support entomological capacity:* Continue to support entomological capacity including re-establishing operation of sentinel sites, collections, surveys and insectary, and ensuring that sentinel site operation is devolved to the local level. (\$150,000).

**b. Insecticide-treated nets**

Progress since USAID malaria program was launched

Since 2009, over 9.5 million ITNs have been procured, through the Global Fund and USAID, for both mass campaigns and routine distribution. USAID also provided technical assistance for nationwide campaigns in 2009 - 2011, 2014, and the anticipated campaign for July 2017, as well as capacity building support to manage ITNs as an essential medicine. Social marketing had been introduced with over 10,000 ITNs sold but this has since been discontinued since it was observed that no vendor imported ITNs during the pilot period. A key request made at the stakeholders’ meetings was for continuation of social marketing of ITNs. It was put forward that there was an unmet demand for purchase of ITNs.

Progress during the last 12 months

During this period, USAID support continued to focus on the procurement and distribution of ITNs for pregnant women at ANC clinics and children during routine immunization services. Using FY 2016 funds 863,750 ITNs were procured. Social and behavior change communication activities to promote ITN ownership and use, emphasizing vulnerable groups such as pregnant women and children under-five years of age, using various media such as radio, printed material, theatre groups and community outreach were conducted nationwide. Currently, USAID is promoting ownership and use of ITNs throughout the country in collaboration with other development partners through the social mobilization sub-group of the epidemic response task force. The members of this group include Ministry of Health (MoH), Civil Society, humanitarian non-governmental organizations (NGOs), United Nations organizations, and USAID. A visual toolkit has been jointly developed within this sub-group.

<sup>22</sup> WHO Weekly Malaria bulletin

Table 3: ITN Gap Analysis

Calendar Year	2016	2017	2018
Total Targeted Population <sup>1</sup>	9,736,174	10,400,938	10,681,186
<b>Continuous Distribution Needs</b>			
Channel #1: ANC <sup>2</sup>	486,809	520,047	534,059
Channel #2: EPI <sup>2</sup>	360,238	384,835	395,204
Channel #3: Schools <sup>3</sup>	215,000	0	0
Channel #4: Special Groups <sup>3</sup>	148,401	0	0
<i>Estimated Total Need for Continuous</i>	1,210,448	904,882	929,263
<b>Mass Distribution Needs</b>			
2017 mass distribution campaign	0	6,471,695	0
<i>Estimated Total Need for Campaigns</i>	0	6,471,695	0
<b>Total Calculated Need: Continuous and Campaign</b>	<b>1,210,448</b>	<b>7,376,577</b>	<b>929,263</b>
<b>Partner Contributions</b>			
ITNs carried over from previous year (4,5)	379,550	0	118
ITNs from Government	0	0	0
ITNs from Global Fund (7,8)	148,401	6,471,695	0
ITNs from Other Donors (UNICEF)	5,000	5,000	5,000
ITNs planned with USAID funding <sup>6</sup>	1,065,000	900,000	867,500
<b>Total ITNs Available</b>	<b>1,597,951</b>	<b>7,376,695</b>	<b>872,618</b>
<b>Total ITN Surplus (Gap)</b>	<b>387,503</b>	<b>118</b>	<b>-56,645</b>

<sup>1</sup>Population data is obtained from projections from the census of 2010. The exercise of counting household members nationwide in preparation for the Mass Distribution of ITNs showed a population of 12.7% more.

<sup>2</sup> The target population for ANC visits is 100% expected pregnant women. Since DHS preliminary results show the Total Fertility Rate dropped from 6.4 (2010) to 5.5(2016) live births per woman of reproductive age the figure provided is likely to be an over estimation of the number of ITNs required for ANC and EPI clinics

<sup>3</sup>Schools and special groups are not included immediately following the mass ITN distribution campaign planned in 2017

<sup>4</sup> Actual number in stock on 31<sup>st</sup> December. This figure includes ITNs remaining from 2014 mass distribution campaigns. Remaining usable nets will be distributed during campaign.

<sup>5</sup>Estimated number to be carried over based on ITN surplus calculations.

<sup>6</sup> FY 2018 USAID ITN contributions are planned figures and dependent on final funding obligations

### Plans and justification

Using FY 2017 funding, USAID plans to procure and distribute approximately 900,000 ITNs to be made available for routine distribution. The amount is based on the gap analysis done by the NMCP in collaboration with key partners, including USAID, which was the basis for the country's Global Fund concept note. This would fill the need for ITNs to be distributed via ANC and expanded program on immunization clinics (EPI). USAID is also providing technical assistance for the mass campaign for July 2017 and will contribute to communication and promotion activities related to the 2017 mass distribution campaign. Intensified interventions to both prevent sale and mis-use of ITNs and promote proper use are planned within the malaria epidemic response plan.

### Proposed activities with FY 2017 funding: (\$3,690,000)

- *Procurement of ITNs:* Procure approximately 900,000 rectangular ITNs for routine distribution. (\$2,690,000);
- *Distribution and warehousing of ITNs:* Distribute ITNs via routine channels including ANC and EPI. (\$900,000);
- *Technical support for 2017 mass distribution campaign:* Provide technical assistance support for the planning and communication activities related to the 2017 mass distribution campaign. (\$100,000)

## **2. Malaria in pregnancy**

### NMCP/USAID objectives

According to the National Malaria Control Strategic Plan (2013-2017) for Burundi the objectives of the malaria in pregnancy (MIP) program are to ensure that every pregnant woman receives at least three treatments of intermittent-preventive treatment during pregnancy (IPTp) with sulfadoxine-pyrimethamine (SP), with each treatment being administered under direct observation of the antenatal ANC attendant, starting in the second trimester, at one-month intervals, up to the day of delivery. Additionally, each pregnant woman will receive an ITN at her first ANC visit. Finally, pregnant women in their first trimester will be treated for uncomplicated malaria using oral quinine, while women in their second and third trimesters will be treated using an artemisinin-based combination therapy (ACT). USAID supports the full package of MIP activities in the national strategy. Severe malaria treatment in pregnancy is administered according to national protocols.

### Progress since USAID malaria program was launched

In 2009, USAID and other key partners began advocating that the MoH revise its policy on SP, which had been removed from the MoH essential drug list since 2002. In 2014, Burundi adopted IPTp, and included it in its updated MIP policy guidance, which initially only included distribution of ITNs at ANC and treatment guidelines for both uncomplicated and severe malaria (2002). In preparation for the launching of the new IPTp policy, USAID purchased 1,860,000 treatments of SP as well as identified

target districts in which IPTp rollout would start. Working closely with UNICEF, USAID helped spearhead the IPTp launch in March of 2015, which was followed by training of health workers and development of communication materials to raise public awareness on the new policy.

*Progress during the last 12 months*

USAID supported the scaling up of IPTp to health facilities to 17 Districts. In this period, there was a surplus of SP so no purchases were made. The 2016 DHS results showed that 30% of pregnant women were given one dose of SP, 21% received two doses, and 13% received all three recommended doses. The proportion of women attending ANC four times was 49%. These results suggest that while there is good uptake for this new intervention, IPTp still requires additional support at the health facility level to ensure that the manuals are followed and provision of this service is provided to all pregnant women. Furthermore, support for ensuring a functioning routine reporting system that captures the provision of this service countrywide is essential. During the stakeholders meeting there was consensus that IPTp coverage was improving well. Table 4 shows the status of IPTp policy in Burundi.

*Table 4. Status of IPTp policy in Burundi*

WHO policy updated to reflect 2012 guidance	2014
Status of training on updated IPTp policy	Completed
Number of health care workers trained on new policy in the last year	0
Are the revised guidelines available at the facility level?	Yes
ANC registers updated to capture 3 doses of IPTp-SP?	Completed
HMIS/ DHIS updated to capture 3 doses of IPTp-SP	Completed

Table 5: SP Gap Analysis for Malaria in Pregnancy

Calendar Year			
Total Population <sup>1</sup>	9,736,174	10,400,938	10,681,186
<b>SP Needs</b>			
Total number of pregnant women attending ANC for three visits <sup>2</sup>	1,460,426	1,560,141	1,602,178
<b>Total SP Need (in treatments)</b>	4,381,278	4,680,423	4,806,534
<b>Partner Contributions</b>			
SP carried over from previous year (3,4)	7,440,500	3,059,222	1,108,799
SP from Government	0	0	0
SP from Global Fund	0	2,730,000	0
SP from Other Donors	0	0	0
SP planned with USAID funding	0	0	0
<b>Total SP Available</b>	7,440,500	5,789,222	1,108,799
<b>Total SP Surplus (Gap)</b>	3,059,222	1,108,799	4,276,681

<sup>1</sup>Population data is obtained from projections from the census of 2010. The exercise of counting household members nationwide in preparation for the Mass Distribution of ITNs showed a population of 12.7% more.

<sup>2</sup>The target population for ANC visits is 100% expected pregnant women. Since DHS preliminary results show the Total Fertility Rate dropped from 6.4 (2010) to 5.5 (2016) live births per woman of reproductive age the figure provided is likely to be an over estimation of the number of ITNs required for ANC and EPI clinics

<sup>3</sup> Actual number in stock on 31<sup>st</sup> December 2016

#### Plans and justification

Using FY 2017 funding, USAID plans to provide support at health facility level for supervision and continued use of IPTp in the four USAID-supported provinces. USAID will continue to monitor these supplies, as well as to monitor the status of ANC registry updates to reflect the new policy and the health management information system (HMIS) for capturing the three-doses of SP.

#### Proposed activities with FY 2017 funding: (\$150,000)

- *Supervision of IPTp*: Provide continued support for supervision of IPTp at ANC and increasing uptake of IPTp 2 and 3 in the four provinces of Karuzi, Kayanza, Kirundo and Muyinga. (\$150,000).

### 3. Case management

#### a. Diagnostics and treatment

##### NMCP/USAID objectives in diagnostics

Burundi's malaria treatment guidelines require diagnostic confirmation of all fever cases before treatment with an ACT, either by rapid diagnostic test (RDT) or microscopy. The guidelines for use of RDT and microscopy testing are unclear as to when and where a microscopy should be used following an RDT test and require updating. The Burundi Malaria treatment guidelines (*Directives Nationales de Traitement du Paludisme*) state that 90% of all confirmatory tests should use RDTs and 10% microscopy testing but the guidelines do not specify which level of the health system should use RDTs versus microscopy.

##### Progress since USAID malaria program was launched

Since the USAID Malaria program was launched in 2009, Burundi was able to review the malaria treatment guidelines, roll out and scale-up the use of RDTs, and introduce and scale-up integrated community-case management (iCCM). Currently RDTs are used nationwide and at community level.

##### Progress in the past 12 months

Access to malaria diagnostics is now universal with microscopy available in most health centers and hospitals and use of RDTs has also expanded nationwide. HMIS 2016 data show confirmatory testing rates in Burundi are 99.9%, with 64.3% by RDTs and 35.7% by microscopy. The malaria positivity rate was 67.6% ranging from 81% in Vumbi Health District, Kirundu to 30.1% in Rwibaga District, Bujumbura<sup>23</sup>.

As a component of the epidemic response, eleven districts most-affected by the increase in malaria cases, will have additional treatment sites attached to each health center. These are at locations convenient to the public (e.g. schools and other public buildings) from where health workers will provide treatment to those who have fever or report to have had fever in the past 24 hours. The MoH has also started to promote use of RDTs, over microscopy, in health facilities and at mobile clinics to help reduce congestion at these sites. In addition, the MoH is considering introducing presumptive treatment for a period of three months at health facilities within districts where the positivity rate is 70% or over. However, no decision had been made at the time of developing this Malaria Operational Plan (MOP).

USAID has pledged to support the MoH's diagnostic policies, and in the last year, procured a total of 5,127,800 RDTs for distribution through CAMEBU (*Centrale d'Achat de Médicaments Essentiels du Burundi*), for use in health facilities and iCCM. Despite high levels of confirmatory testing noted in the HMIS, supervisory visits, and the End Use Verification (EUV) survey reveal that there is still a need for supervision in malaria diagnosis according to guidelines. Table 6 describes the current RDT gap analysis using numbers agreed on by the national quantification committee

---

<sup>19</sup> HMIS2015

*Commodity gap analysis*

*Table 6: RDT Gap Analysis*

Calendar Year	2016	2017	2018
<b>RDT Needs</b>			
Total country population <sup>1</sup>	9,736,174	10,400,938	10,681,186
Population at risk for malaria <sup>2</sup>	9,736,174	10,400,938	10,681,186
USAID-targeted at-risk population	9,736,174	10,400,938	10,681,186
Total number of projected fever cases <sup>3</sup>	10,614,377	13,867,428	13,867,428
Percent of fever cases tested with an RDT <sup>(4)</sup>	67%	90%	90%
<b>Total RDT Needs</b>	<b>7,111,633</b>	<b>12,480,685</b>	<b>12,480,685</b>
<b>Partner Contributions</b>			
RDTs carried over from previous year <sup>(5)</sup>	2,909,725	1,807,142	63,457
RDTs from Government	1,608,400	0	0
RDTs from Global Fund <sup>(6)</sup>	4,400,650	1,949,200	0
RDTs from Other Donors <sup>(7)</sup>	0	3,660,000	0
RDTs planned with USAID funding <sup>(8)</sup>	2,010,300	5,127,800	6,000,000
<b>Total RDTs Available</b>	<b>8,918,775</b>	<b>12,544,142</b>	<b>6,063,457</b>
<b>Total RDT Surplus (Gap)</b>	<b>1,807,142</b>	<b>63,457</b>	<b>-6,417,228</b>

<sup>1</sup>Population data is obtained from projections from the census of 2010. The exercise of counting household members nationwide in preparation for the Mass Distribution of ITNs (2014) showed a population of 12.7% more.

<sup>2</sup>The total population of Burundi is considered at risk for malaria

<sup>3</sup>Total number of confirmed malaria cases tested with an RDT.

<sup>4</sup>Proportion of fever cases tested with an RDT in 2016. 90% NMCP goal for 2017 and 2018.

<sup>5</sup> Actual number in stock on 31<sup>st</sup> December

<sup>6</sup> Concept note still being finalized. Final commodities unknown at the time of writing MOP.

<sup>7</sup> Other donors include UNICEF, World Bank (to be confirmed), MSF Belgique,

<sup>8</sup> FY 2017 planned RDT procurements will use FY 2016 and FY 2017 funds

### NMCP/USAID objectives in treatment

Burundi malaria treatment guidelines recommend artesunate-amodiaquine (AS-AQ) co-formulated fixed dose for first-line treatment for uncomplicated malaria. For patients who fail to respond to AS-AQ, a seven-day course of oral quinine-clindamycin or a three-day course of arthemether-lumefantrin (AL) is the recommended second-line treatment. For treating malaria infections during pregnancy, quinine-clindamycin is used during the first trimester, while AS-AQ is recommended for the second and third trimesters. Injectable artesunate is the recommended treatment for severe malaria. The preliminary result from one sentinel site of the therapeutic efficacy study (TES) indicated that resistance to AS-AQ is not a concern. Data collection continues for remaining three sites.

The MoH, through the NMCP and partners, is scaling up iCCM, taking into account the malaria prevalence in health districts. The Global Fund, UNICEF, World Vision, World Relief, and WHO are committed to supporting the MoH in continuing integration of malaria, diarrhea, and pneumonia treatment to the community health workers' (CHWs) package and to expanding the strategy geographically. At the time of developing the MOP, 30 out of 47 Districts had fully functioning iCCM. Community agents are functioning with support from several development partners including USAID. These agents are chosen by the community and trained to test and treat children under five years of age presenting with fever or a history of fever. The health centers performance-based financing (PBF) earnings include 5% allocated for community level activities. These funds are frequently used to support the community agents

### Progress since USAID malaria program was launched

See response above under diagnosis and treatment.

### Progress during the past 12 months

USAID remains committed to supporting access to treatment for confirmed malaria cases throughout the country. In the last fiscal year, USAID procured 3,750,950 doses of ACTs. DHS 2016 preliminary results reported 11% children under five years of age with fever during the past two weeks were treated with an ACT. According to the October 2016 EUV, in the twelve provinces<sup>24</sup> where the EUV was conducted, 89% of confirmed malaria cases in children under 5 years of age were treated with an ACT per national guidelines. The EUV also reported case management and associated algorithms were available in 86 - 90% of facilities, over 80% of staff were trained in treatment guidelines and staff turnover is low, as 88% were still present in the same facility.

Following the declaration of the malaria epidemic on 13 March 2017, 5,330,494 additional ACTs were procured using funds through UNICEF, World Vision, and Médecins Sans Frontières Belgique (MSF). In addition, WHO procured artemether-lumefantrin and World Bank also committed to procuring ACTs through the existing International Development Assistance loan.

There have been stockouts of artesunate injection since December 2016, in addition to stockouts at the service delivery point of ACTs and RDTs, exacerbating abilities to properly test and treat for malaria during the epidemic. The Global Fund will provide artesunate injection in calendar year 2018 to cover the country's needs.

iCCM continues to focus on proper diagnosis and treatment of malaria in children under five years of age at the community level and has been expanded to 30 out of 47 Health Districts. To date, all previous

---

<sup>24</sup> Out of 105 service delivery points and 120 storage facilities

CHWs have benefited from refresher training and replacement of used and/or missing equipment in their medical kits.

As a key component of the epidemic response fixed ‘outreach’ sites were established to provide testing and treatment of uncomplicated malaria free of charge. These sites attracted over 110,000 people over a six-week period in three provinces with 67% positivity rates. These included malaria cases not previously receiving treatment.

Commodity gap analysis

Table 7: ACT Gap Analysis

Calendar Year	2016	2017	2018
<b>ACT Needs</b>			
Total country population <sup>1</sup>	9,736,174	10,400,938	10,681,186
Population at risk for malaria <sup>2</sup>	9,736,174	10,400,938	10,681,186
USAID-targeted at-risk population <sup>2</sup>	9,736,174	10,400,938	10,681,186
Total projected number of malaria cases <sup>(3,4)</sup>	8,836,174	10,426,638	10,426,638
<b>Total ACT Needs</b>	<b>8,836,174</b>	<b>10,426,638</b>	<b>10,426,638</b>
<b>Partner Contributions</b>			
ACTs carried over from previous year <sup>(5)</sup>	668,225	805,577	3,083,708
ACTs from Government	0	0	0
ACTs from Global Fund	4,507,250	2,227,425	7,538,151
ACTs from Other Donors <sup>(6)</sup>	715,326	5,330,494	0
ACTs planned with USAID funding <sup>(7)</sup>	3,750,950	5,146,850	4,973,312
<b>Total ACTs Available<sup>(8)</sup></b>	<b>9,641,751</b>	<b>13,510,346</b>	<b>15,595,171</b>
<b>Total ACT Surplus (Gap)</b>	<b>805,577</b>	<b>3,083,708</b>	<b>5,168,533</b>

<sup>1</sup>Population data is obtained from projections from the census of 2010. The exercise of counting household members nationwide in preparation for the Mass Distribution of ITNs showed a population of 12.7% more.

<sup>2</sup> The total population of Burundi is considered at risk for malaria

<sup>3</sup> Total number of confirmed malaria cases for Calendar year 2016 (HMIS)

<sup>4</sup> Total number of cases for first 6 months of 2017 plus 18% increase as reported by May 2017 (HMIS).

<sup>5</sup> Actual number in stock on 31st December. However, stockouts were noted in country in early 2017.

<sup>6</sup> Other donors include UNICEF, MSF Belgique, WHO. The contribution from UNICEF and WHO were considered a one-off donation that is not expected to be repeated in FY 2018 if epidemic subsides.

<sup>7</sup> FY 2017 planned ACT procurements will use FY 2016 and FY 2017 funds

<sup>8</sup> These calculations do not take into account the reduced minimum level of stock at CAMEBU, health district and health centers. An additional six months stock will be required to reach the recommended minimum stock levels.

### Plans and justification

Malaria laboratory diagnosis is a key component of high-quality case management and USAID will continue to support the strengthening of microscopic and RDT diagnosis of malaria in health facilities and at the community level. Case Management and diagnosis guidelines have been developed and distributed in all health centers. Supervision for the adherence to guidelines will be promoted.

Ensuring prompt, effective, treatment with an ACT to all patients with confirmed malaria in Burundi is a key priority for NMCP and its partners. Furthermore, to avoid complications or deaths resulting from delayed care seeking or some other barriers, iCCM is an effective approach to ensure that children under five years of age have access to prompt and effective treatment. In addition, the use of ‘outreach’ testing and treatment sites was found to increase access to prompt treatment for all age groups. USAID will continue to scale up and support iCCM in USAID-supported districts.

### Proposed Diagnostic and Treatment Activities with FY 2017 Funding: (\$3,430,000)

- *Procurement of RDTs:* Procure up to 2,000,000 RDTs to contribute to the estimated RDT need based on the new requirements of current diagnosis protocols. (\$800,000).
- *Procure ACTs:* Procure about 2,200,000 million AS-AQ treatments, which will contribute to filling the needs for calendar year 2018, along with contributions from other partners. (\$1,100,000).
- *Strengthen case management:* Continue to support case management activities in USAID focus provinces (Karuzi, Kayanza, Kirundo and Muyinga) and expand to cover all provinces for case management at all levels (hospital, community, and facility). This will include iCCM in communities, including training, supervision, and support to ‘outreach’ testing and treating sites (\$1,530,000).

## **b. Pharmaceutical management**

### NMCP/USAID objectives

The National Malaria Control Strategic Plan (2013-2017) highlights the objective of ensuring a functioning national supply chain system and ensuring the availability of quality-assured malaria medicines and diagnostics. These assured medicines should also follow the national guidelines on malaria treatment. Achieving the case management objectives outlined in the strategic plan hinge on guaranteeing a strengthened supply chain system and the sustained availability of malaria commodities.

The Department of Pharmacies, Medicines, and Laboratories (DPML) is the division of the MoH charged with providing regulation and oversight to the pharmaceutical sector. The DPML also regulates the semi-autonomous central purchasing and warehousing agency CAMEBU in line with the national pharmaceutical policy.

CAMEBU is responsible for procurement and management of public sector pharmaceuticals destined for public health facilities, both government and faith-based health facilities that follow Government of Burundi policies. CAMEBU is directly responsible for management of malaria commodities on arrival at their central warehouse, including storage and distribution. The DPML updates the essential drugs list about every three years with CAMEBU issuing tenders, and procuring and managing the distribution of essential drugs to public sector facilities. With the income from PBF and user fees, districts and

hospitals may opt to purchase additional supplies and drugs from the private sector. Health element/disease programs are essentially vertical, responsible for the management of their commodities, including the management of orders, procurement, distribution, and general oversight to CAMEBU as it relates to their commodities. CAMEBU shares distribution and inventory data on a monthly basis with the NMCP, the minimum stock level of 6-9 months is not respected. CAMEBU does not currently manage ITNs within its warehouse due to limited space.

The MoH has, until the epidemic response, been operating a pull pharmaceutical supply system based on health district orders. The usual practice is for the District Pharmacist to travel to Bujumbura to gain approval for the monthly medicines request. With this authorization they then proceed to CAMEBU to collect the health commodities. Transport is usually managed by districts, either with their own vehicle or through hiring. Quantification of pharmaceutical supplies is primarily based on districts' requests intended to add monthly consumption to a security stock level of two months consumption as per guidelines. However, for some time health district requests ensure a security stock of only fourteen days. In case of stockouts of essential medicines, including malaria commodities, health districts can purchase from regulated private outlets using their own funds. CAMEBU via the assistance of the Global Fund, UNICEF, and the Government of Burundi completed the expansion of their central warehouse in 2014. There is currently one central warehouse although discussions related to the current Global Fund grant includes rehabilitation of three additional warehouses in strategic locations in Burundi, including a provincial warehouse based in the centrally located town of Gitega. Health center personnel collect supplies from the health district. During the epidemic, ACTs procured were sent directly to health districts from CAMEBU through a push system.

Although CAMEBU functions fairly well there are still many constraints in the pharmaceutical management and supply chain system throughout the country. Some hospitals and districts have computers and logistics management information systems, but the systems are neither linked to each other or to CAMEBU's system to facilitate quick, automated national quantification and ordering. Currently hospitals, which are autonomous bodies, can order directly from CAMEBU and immediately receive malaria-related medicines, while health districts, government institutions, must go through an indirect process of approvals.

#### *Progress since USAID malaria program was launched*

Since the beginning of the USAID malaria program in Burundi, malaria commodity delivery has improved due to better coordination with donors and partners, increased training and supervision, standard operating procedures (SOPs) in pharmaceutical management, and improved practices for delivering commodities. When the USAID malaria program began, stockouts were the norm and it took months for malaria commodity orders to be delivered and distributed. USAID supported the formation of a coordination body for the management of medicine stocks to enable regular meetings to be held among CAMEBU, NMCP, and the Global Fund. As part of this coordination body, USAID facilitated a revised requisition process for the ordering and approval of ACT orders among all partners, which has greatly decreased request and delivery time of orders. New SOPs for pharmaceutical management for the district and facility level were introduced in 2012. The new SOPs improved the ACT requisition system.

#### *Progress during the last 12 months*

In the past 12 months USAID continued to support the strengthening of the malaria pharmaceutical management system, including drug forecasting, procurement, storage, inventory, and transportation. USAID continued to support the coordination body for the management of medicine stocks, led by the

DPML and held among CAMEBU, NMCP, and the Global Fund. Monthly stock status reports and meetings are still held in an effort to improve planning and coordination and adherence to supply plans has improved. The National Quantification Committee for malaria commodities has been officially established and it serves as the platform for strengthening and supporting regular forecasting and supply planning exercises.

Over the course of 2016 and into early 2017, stockouts in all malaria commodities were reported at various times and at various levels. Stockouts ranged from 30 – 70 days and over 5 months for injectable artesunate; particularly during peak malaria season. Due to the epidemic and low stocks in country, stock managers revised their requests accordingly from normal SOPs. Thus, many health facilities did not follow set minimum (two months) and maximum stock levels and were only requesting up to two weeks of stock. Once the national stock situation stabilizes, USAID and partners will work with stock managers to revert to normal SOPs. In addition, all women were issued a coupon to receive an ITN during periods of stockout, however it is unclear if distribution was made, against the coupons, for women who had delivered before ITNs were back in stock.

#### Plans and justification

USAID will continue to support strengthening of the malaria supply chain and pharmaceutical management for malaria system at the national, district, and facility levels. Enhanced supervision and capacity building at all levels will focus on enforcing use of SOPs and improving forecasting and supply planning including attention to consumption and use of newly introduced commodities such as injectable artesunate, SP, and clindamycin. USAID will continue coordination efforts with other donors, including the Epidemic Task Force logistics sub group and the UNICEF SMS stock data collection to improve stock availability. USAID will provide technical support to improve the logistics information management system and mode and system of transportation of commodities.

#### Proposed activities with FY 2017 funding: (\$500,000)

- *Strengthen national supply chain management capacity:* Continue support for supply chain logistics and pharmaceutical management at the national level in collaboration with CAMEBU, including refresher trainings, and coordination of planning committees. This investment will also strengthen the NMCP's capacity to quantify all malaria commodities, and improve the pharmaceutical management capacity in targeted districts. (\$300,000).
- *Fee to CAMEBU for storage and distribution:* A fee of 5% total cost of malaria commodities procured through USAID will be paid to CAMEBU for storage and distribution. (\$200,000).

#### **4. Health system strengthening and capacity building**

##### NMCP/USAID objectives

The NMCP was established in January 2009 and is organized into four key program units including case management, vector control, monitoring and evaluation, and resources management. These program units are supported by 21 staff members, which include two physicians, four biologists (who have received some entomology training), several laboratory technicians, and an economist. A director and a deputy director lead the program. There have been six NMCP directors since its inception in 2009, the current director was appointed on June 15<sup>th</sup> 2017. The continual replacement of NMCP directors adversely affects the smooth functioning of the program especially during periods of intense, complex activities like the coming mass distribution campaign, grant making for recently submitted proposals to the Global Fund, and upcoming development of a new strategic plan for 2018 - 2020.

### Progress since USAID malaria program was launched

One of the four goals of the Burundi National Health Plan is to enhance the performance of the national health system. One of these goals is to devolve critical health system functions to the health districts by forming and empowering district health teams. The aim is to be able to better provide quality health services, including clinical and community malaria prevention and treatment services. There are, however, no malaria focal persons at the district or health facility levels; rather, health personnel are trained to provide and manage integrated health services, including those for malaria. USAID's health program fully supports this Burundi health goal and is funding activities to improve the health information system, drug management, the supply chain, and human capacity development in an integrated fashion at the health district level.

The HMIS in Burundi is supported by many donors comprising USAID, Global Fund, and the Belgian Technical Cooperation. The Global Fund through the health systems strengthening component of the HIV concept note, planned to support both provincial and district levels to install and train all teams on the District Health Information System 2 (DHIS2) software that replaced the less performant GESIS<sup>25</sup> previously used. USAID budget earmarked to HMIS takes into account all the existing partners' contributions.

### Progress in the last 12 months

USAID continues to provide targeted support to the NMCP with the aim to improve critical operations of their office and functionality of their staff that impact on controlling malaria. This support includes facilitation of quarterly meetings with in-country Roll Back Malaria (RBM) partners, and training in entomological skills particularly at the district sentinel sites. With USAID's support, 106 pharmacy staff received training in supply chain management. Continued training of health district teams is required to gather quality data, to analyze data collected, and to make informed decisions based on that analysis. As part of a health district team capacity building activity, data collection of IPTp data occurred in 171 health facilities in Karuzi, Kayanza, Kirundo and Muyinga until such time as IPTp is included in routine HMIS system.

USAID supported the training of central level officers from relevant departments and key Development Partners on data audit tools. Continuous technical support on the use of the DHIS2 was provided to the HMIS unit.

### Plans and justification

USAID will continue to support the NMCP to lead the RBM partnership, which will include hosting quarterly meetings and ensuring good coordination among donors, NGOs and government institutions charged with supporting the National Malaria Control Strategic Plan (2013-2017). The FY 2017 funding will also support development of the follow-on national malaria strategic plan 2018-2022.

### Proposed activities with FY 2017 funding: (\$150,000)

- *Support to NMCP:* Provide support to the NMCP to host quarterly meetings with in-country RBM partners, ensuring good coordination and planning with regard to the National Malaria Control Strategic Plan (2013-2017). (\$50,000).
- *Support to HMIS:* Provide support to HMIS unit of the MoH to improve data completeness and accuracy in the area of malaria control. (\$100,000).

---

<sup>25</sup> GESIS= *gestion du Système d'Information Sanitaire* (a software previously used in the HMIS)

Table 8: Health Systems Strengthening Activities

Health Services	Case Management	Improve, through training and supervision, QA systems to monitor the quality of laboratory diagnostic services. In addition to provide supervision of the iCCM activities at the HF and <i>colline</i> level.
Health Workforce	Health Systems Strengthening	Build, through training and technical assistance, host country managerial and leadership capacity for effective malaria control particularly at the District Health Team level.
Health Information	Monitoring and Evaluation	a) Strengthen disease surveillance systems to improve decision-making, planning, forecasting and program management. b) Improve the health information system, and in particular make sure that HMIS collection tool through the new DHIS II includes 3 doses of IPTp-SP uptakes and iCCM data.
Essential Medical Products, Vaccines, and Technologies	Case Management	USAID will support improved forecasting, procurement, quality control, storage and distribution of malaria commodities, such as insecticide-treated nets, artemisinin-based combination therapies and rapid diagnostic tests. Coordinating with partners to ensure the supply chain system returns to normal despite increase in consumptions due malaria epidemics.
Health Finance	N/A	
Leadership and Governance	Health Systems Strengthening	Strengthen national coordinating and regulatory bodies to direct and manage malaria resources, develop guidelines, and improve quality of services.

## 5. Social and behavior change communication

### NMCP/USAID objectives

Social and behavior change communication (SBCC) is an important component of malaria prevention and control activities and is crucial to achieving coverage and use objectives. A National Communication Strategy for Malaria was developed in 2014 and considered during the development of the Global Fund concept note. By 2017, the strategy aims to further raise awareness in the general population to increase acceptance and adoption of behaviors related to malaria prevention and treatment.

### Progress since USAID malaria program was launched

Currently there is only one full-time SBCC staff person at the NMCP, and the SBCC technical working group in the NMCP is not yet functional. The NMCP decided to create an SBCC unit and appoint new staff to strengthen SBCC activities in collaboration with the central SBCC department. Strategies for SBCC conducted using USAID Malaria funding include radio messages, theatre shows, and the

distribution of leaflets and other visual tools to transfer knowledge to key populations on malaria control. The 2016 Demographic and Health Survey (DHS), preliminary results, however, indicate a deterioration in key indicators from the baseline 2010 DHS. The reported use of ITNs among pregnant women the night before the survey decreased from 56% in 2010 to 44% in 2016. Among children under five years of age, ITN reported use the night before the survey decreased from 54% in 2010 to 40% in 2016. The MoH with its partners are reviewing the messages provided. Furthermore, while 49% of pregnant women attended ANC four times during their pregnancy only 13% were given three doses of SP. A breakdown of DHS data by Province will help to indicate the impact of support including malaria SBCC messages supported by USAID.

#### Progress during the past 12 months

USAID's investment in SBCC activities have focused on increasing uptake of malaria services, including correct and consistent use of ITNs, prompt care seeking behavior for febrile illnesses, and ANC attendance to increase uptake of IPTp among pregnant women. Theatre groups, leaflets, and radio messages have reached populations in the most severely affected districts. USAID partners work closely within the Social Mobilization sub-group of the Malaria Task Force to improve the content and visualization of key messages. Efforts are made to communicate the importance of ITN utilization following the mass distribution of ITNs campaign, with a focus on preventing selling of ITNs immediately following the campaign.

#### Plans and justification

Using existing pipeline, USAID will continue to support SBCC activities in Burundi into 2017. The plan thereafter is to continue support for SBCC activities but ensuring that the messages provided are having an impact on behavioral change, particularly following the mass ITN distribution campaign.

#### Proposed activities with FY 2017 funding: (\$500,000)

- *Support malaria SBCC activities:* Provide support for communication activities through various channels including radio, local community groups, and health facilities, prevention and treatment uptake of malaria services, including correct and consistent use of ITNs, prompt care seeking behavior, and promoting ANC attendance in four provinces, including Karuzi, Kayanza, Kirundo and Muyinga. (\$500,000).

## **6. Surveillance, monitoring, and evaluation**

#### NMCP/USAID objectives

The NMCP is currently operating under the 2013-2017 national Monitoring and Evaluation (M&E) plan. The plan includes use of data supervision sheets to verify if planned activities have been implemented according to the annual work plans, identifying gridlocks, and proposing solutions. The plan also identifies key indicators linked to the malaria control database and describes mechanisms to provide feedback to peripheral levels so that local policy makers and partners can make informed decisions about future planning, using health data. The foundation for malaria data is the Burundi Department of Statistics (DSNIS), which collects information from facilities, who are required to report, each month, the number of diagnostically-confirmed and treated cases.

#### Progress since USAID malaria program was launched

Since the USAID malaria program started in Burundi, support has included technical input into the development of the current national M&E plan for malaria, as well as associated training of M&E technical experts who subsequently assisted with the roll out of the M&E plan by training local health

officials, who, in turn, are responsible for supervising facilities and advising on data-driven decision-making at the local level. The USAID malaria program also supported the Malaria Indicator Survey (MIS) in 2012, which provided parasitemia rates for the first time in Burundi.

The HMIS in Burundi is supported by many donors comprising USAID, Global Fund, and the Belgian Technical Cooperation. The Global Fund through the health systems strengthening component of the HIV concept note, planned to support both provincial and district levels to install and train all teams on the District Health Information System 2 (DHIS2) software that will replace the less performant GESIS<sup>26</sup> previously used. USAID budget earmarked to HMIS takes into account all the existing partners' contributions to HMIS improvement (Global Fund and Belgian Technical Cooperation).

*Progress during the last 12 months*

During the last 12 months USAID supported the technical assistance of *Institute Statistique et d'Etudes Economique du Burundi* (ISTEEBU) for the DHS 2016 - 2017 data collection, which had originally been delayed from 2015 due to political instability. Preliminary malaria results are already available with final results expected in December 2017 including HIV results. An EUV survey highlighting the key observations and the status of pharmaceutical management and case management practices in country was conducted between October and November of 2016.

*Table 8: Surveillance, Monitoring, and Evaluation Data Sources*

Data Source	Survey Activities	Year								
		2010	2011	2012	2013	2014	2015	2016	2017	2018
Household surveys	Demographic Health Survey (DHS)	X						X		
	Malaria Indicator Survey (MIS)			X						
	EPI survey									
Health Facility and Other Surveys	School-based malaria survey									
	Health facility survey									
	SPA survey									
	EUV survey							X	X	(X)
Malaria Surveillance and Routine System Support	Support to malaria surveillance system									
	Support to HMIS				X	X	X	(X)	(X)	(X)
Therapeutic efficacy	In vivo efficacy									

<sup>26</sup> GESIS= *gestion du Système d'Information Sanitaire* (a software previously used in the HMIS)

monitoring	testing									
Entomology	Entomological surveillance and resistance monitoring			X	X	X	X	X	(X)	(X)
Other Data Sources	Malaria Impact Evaluation									

X – activities completed or under-way

(X) – activities planned

Plans and justification

Using FY 2017 funding, USAID plans to support two EUV surveys as part of the overall supply chain and case management support.

Proposed activities with FY 2017 funding: (\$80,000)

- *Support EUV:* Support two EUV surveys. (\$80,000).

**7. Operational research currently not currently supported by USAID.**

**8. Staffing and administration**

Two health professionals, (a Malaria Advisor and a Malaria Specialist), serve to oversee the USAID Malaria Program in Burundi. Burundi is a USAID Field Office and is part of the USAID/East Africa Regional Program. The Malaria Advisor position, vacant since June 2012, was filled in January 2017. The Malaria Adviser and Specialist are part of the health team, supervised by the Senior Health Team Lead, a position filled in May 2017 and led by the USAID Country Representative. The USAID Malaria team shares responsibility for development and implementation of USAID Malaria program strategies and work plans, coordination with national authorities, managing collaborating agencies, and supervising day-to-day activities.

The USAID Malaria professional staff work together to oversee all technical and administrative aspects of the USAID Malaria Program, including finalizing details of the project design, implementing malaria prevention and treatment activities, monitoring and evaluation of outcomes and impact, reporting of results, and providing guidance and direction to USAID implementing partners.

The USAID Malaria lead in country is the USAID Country Representative who also works in coordination with the East Africa Regional Program in Kigali, Rwanda. The day-to-day lead for the USAID Malaria program is delegated to the USAID Health Team Lead and thus the two malaria professional staff report to the USAID Health Team Lead for day-to-day leadership, and work together as a part of a single team. Technical expertise housed in Washington complements USAID programmatic efforts.

The two malaria staff are physically based within the USAID health office but are expected to spend approximately half of their time with and providing TA to the NMCP and implementing partners, including time in the field monitoring program implementation and impact.

The number of locally-hired staff and necessary qualifications to successfully support USAID Malaria activities either in Ministries or in USAID will be approved by the USAID Country Representative. Because of the need to adhere to specific country policies and USAID accounting regulations, any transfer of USAID Malaria funds directly to Ministries or host governments will need to be approved by the USAID Country Representative and Controller, in addition to the U.S. Global Malaria Coordinator.

*Proposed activities with FY 2017 funding: (\$350,000)*

- *In-country USAID staff salaries, benefits, travel and other malaria program administrative costs:* Continued support for two USAID staff personnel to oversee activities supported by USAID in Burundi. Additionally, these funds will support USAID Burundi staff and mission-wide assistance from which the malaria program benefits.

**Table 1: Budget Breakdown by Mechanism  
President's Malaria Initiative – BURUNDI  
Planned Malaria Obligations for FY 2017**

<b>Mechanism</b>	<b>Geographic Area</b>	<b>Activity</b>	<b>Budget (\$)</b>	<b>%</b>	
TBD- Vector Control IDIQ	Nationwide	Support entomological capacity	150,000	2%	
IFRC/AMP	Nationwide	Support to 2017 universal campaign microplanning	100,000	1%	
GHSC - PSM	Nationwide	Procurement of ITNs	2,690,000	68%	
GHSC - PSM	Nationwide	Distribution and warehousing of ITNs	900,000		
GHSC-PSM	Nationwide	Procurement of RDTs	800,000		
GHSC-PSM	Nationwide	Procurement of ACTs	1,100,000		
GHSC-PSM	Nationwide	Strengthen national supply chain management capacity	300,000		
GHSC-PSM	Nationwide	Support to CAMEBU for warehousing and distribution of malaria commodities	200,000		
GHSC-PSM	Nationwide	EUV	80,000		
GHSC-PSM	Nationwide	Support to NMCP	50,000		
GHSC-PSM (PSI)	Nationwide	Support malaria SBCC activities	350,000		4%
TBD - Service Delivery	Nationwide (minus IHPB provinces)	Strengthen case management	800,000		9%
IHPB	Karuzi, Kayanza, Kirundo and Muyinga	Strengthen case management	730,000	11%	
IHPB	Karuzi, Kirundo, Muyinga and Kayanza	MIP	150,000		
IHPB	Karuzi, Kirundo, Muyinga and Kayanza	Support malaria SBCC activities	150,000		
Measure Evaluation	Nationwide	Support data quality	100,000	1%	
USAID Staffing and Administration	Nationwide	Staffing and Administration	350,000	4%	
<b>Total</b>			<b>9,000,000</b>	<b>100%</b>	

**Table 2: Budget Breakdown by Activity  
President's Malaria Initiative – BURUNDI  
Planned Malaria Obligations for FY 2017**

Proposed Activity	Mechanism			Geographic Area	Description
		Total \$	Commodity \$		
<b>PREVENTIVE ACTIVITIES</b>					
<b>VECTOR MONITORING AND CONTROL</b>					
<b>Entomologic monitoring and insecticide resistance management</b>					
Support entomological capacity	TBD- Vector Control IDIQ	150,000		Nationwide	Continue support entomological capacity, monitoring and surveillance particularly in 8 sentinel sites. Continue operation of insectary. Additional monitoring and surveillance in NMCP supported IRS districts (potential additional visits to spray areas). Support resistance monitoring for IRS and ITNs. Continue to support PNILP in assisting ento monitoring.
<b>Subtotal Ento monitoring</b>		<b>150,000</b>			
<b>Insecticide-treated Nets</b>					
Procurement of ITNs	GHSC-PSM	2,690,000	2,690,000	Nationwide	Procure up to 900,000 ITNs for routine distribution through ANC and EPI.
Distribution and warehousing of ITNs	GHSC-PSM (PSI)	900,000		Nationwide	Distribution and warehousing of up to 900,000 routine ITNs
Support to 2017 universal campaign microplanning	IFRC/AMP	100,000		Nationwide	Technical assistance to 2017 mass campaign planning.
<b>Subtotal ITNs</b>		<b>3,690,000</b>	<b>2,690,000</b>		
<b>SUBTOTAL VECTOR MONITORING AND CONTROL</b>		<b>3,840,000</b>			
<b>Malaria in Pregnancy</b>					
Supervision of IPTp	IHPB	150,000		Karuzi, Kayanza, Kirundo and Muyinga	Continue and expand support for IPTp at ANC in the 4 focus provinces, including increasing uptake of IPTp 1, 2 and 3.
<b>Subtotal Malaria in Pregnancy</b>		<b>150,000</b>			
<b>SUBTOTAL PREVENTIVE</b>		<b>3,990,000</b>	<b>2,690,000</b>		

<b>CASE MANAGEMENT</b>					
<b>Diagnosis and Treatment</b>					
Procurement of RDTs	GHSC-PSM	800,000	800,000	Nationwide	Procure approximately 2,000,000 RDTs.
Procurement of ACTs	GHSC-PSM	1,100,000	1,100,000	Nationwide	Procure approximately 2,200,000 treatments of ACTs (AS/AQ).
Strengthen case management	IHPB	730,000		Karuzi, Kayanza, Kirundo and Muyinga	Continue to support and expand case management at all levels (hospital, community, facility) including supervision and support to outreach testing and treating activity.
Strengthen case management	TBD - Service Delivery	800,000		Nationwide except IHPB Provinces	Support and expand case management at all levels (hospital, community, facility) including supervision and outreach testing and treating activity.
<b>Subtotal Diagnosis and Treatment</b>		<b>3,430,000</b>	<b>1,900,000</b>		
<b>Pharmaceutical Management</b>					
Strengthen national supply chain management capacity	GHSC-PSM	300,000		Nationwide	Train new staff at all levels, district, facility and community on pharmaceutical management. Continue assisting CAMEBU and PNILP forecasting and supply chain. Continue to support supply chain logistics and pharmaceutical management at the national level and district level, including rollout of SMS text messaging in other districts. Also continue data collection and stock monitoring through tools such as the PPMRm.
Support to CAMEBU for warehousing and distribution of malaria commodities	GHSC-PSM	200,000		Nationwide	5% management fee for storage, distribution and warehousing of malaria commodities
<b>Subtotal Pharmaceutical Management</b>		<b>500,000</b>			
<b>SUBTOTAL CASE MANAGEMENT</b>		<b>3,930,000</b>			

<b>HEALTH SYSTEM STRENGTHENING / CAPACITY BUILDING</b>					
Support to NMCP	GHSC-PSM	50,000		Central	Provide support to the NMCP to develop 2018-2022 national malaria strategy and revise case management guidelines, hold quarterly malaria partner meetings and regular supervision visits with partners.
Data Completeness and Quality Improvement	Measure Evaluation	100,000		Nationwide	Provide support to the Ministry of Health to improve data completeness and quality.
<b>SUBTOTAL HSS &amp; CAPACITY BUILDING</b>		<b>150,000</b>			
<b>SOCIAL AND BEHAVIOR CHANGE COMMUNICATION</b>					
Support malaria SBCC activities	GHSC-PSM (PSI)	350,000		13 remaining provinces	Provide support to supervise communication activities for the prevention and treatment of malaria. Continue BCC net messages post campaign, emphasize access/correct use/protecting families.
Support malaria SBCC activities	IHPB	150,000		Karuzi, Kayanza, Kirundo and Muyinga	Provide support to supervise communication activities for the prevention and treatment of malaria. Continue BCC net messages post campaign, emphasize access/correct use/protecting families.
<b>SUBTOTAL SBCC</b>		<b>500,000</b>			
<b>SURVEILLANCE, MONITORING, AND EVALUATION</b>					
EUV	GHSC-PSM	80,000		Nationwide	Conduct two end-use verification studies per year
<b>SUBTOTAL SM&amp;E</b>		<b>80,000</b>			
<b>IN-COUNTRY STAFFING AND ADMINISTRATION</b>					
USAID Staffing and Administration		350,000		Central	Support full time USAID staff salaries and benefits (1 Malaria Advisor and 1 FSN Malaria Specialist)
<b>SUBTOTAL IN-COUNTRY STAFFING</b>		<b>350,000</b>			
<b>GRAND TOTAL</b>		<b>\$9,000,000</b>			