



PRESIDENT'S MALARIA INITIATIVE



# USAID'S MALARIA ACTION PROGRAM FOR DISTRICTS

## YOUTH ANALYSIS NOVEMBER 2017

Contract No.: AID-617-C-160001



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Submitted to: United States Agency for International Development

### **DISCLAIMER**

The authors' views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development (USAID) or the United States Government.

# TABLE OF CONTENTS

<b>ACKNOWLEDGEMENTS</b> .....	<b>IV</b>
<b>ACRONYMS</b> .....	<b>V</b>
<b>EXECUTIVE SUMMARY</b> .....	<b>VI</b>
<b>1. INTRODUCTION</b> .....	<b>1</b>
<b>2. BACKGROUND</b> .....	<b>2</b>
2.1 COUNTRY CONTEXT .....	2
2.2 STUDY DESCRIPTION .....	6
<b>3. METHODOLOGY</b> .....	<b>1</b>
3.1 ANALYTIC FRAMEWORK .....	1
3.2 STUDY PROCESS .....	2
3.2.1 <i>Desk review</i> .....	2
3.2.2 <i>Fieldwork</i> .....	3
3.2.3 <i>Data analysis</i> .....	3
3.2.4 <i>Strengths and limitations</i> .....	4
<b>4. RESULTS</b> .....	<b>5</b>
4.1 MALARIA PREVENTION .....	5
4.1.1 <i>Intermittent preventive treatment in pregnancy</i> .....	5
4.1.2 <i>Improving access to and use of long-lasting insecticide treated nets</i> .....	9
4.1.3 <i>Malaria knowledge and education</i> .....	13
4.2 MALARIA DIAGNOSIS AND TREATMENT .....	18
4.2.1 <i>Treatment-seeking behavior</i> .....	18
4.2.2 <i>Youth-friendly services</i> .....	23
<b>5. CONCLUSION</b> .....	<b>29</b>
<b>6. RECOMMENDATIONS FOR MAPD</b> .....	<b>30</b>
<b>7. ADDITIONAL RECOMMENDATIONS</b> .....	<b>37</b>
<b>8. REFERENCES</b> .....	<b>39</b>
<b>ANNEX A: WORK PLAN AND INTERVIEW GUIDES</b> ..ERROR! BOOKMARK NOT DEFINED.	
<b>ANNEX B: LIST OF KEY INFORMANT INTERVIEWS</b> ..ERROR! BOOKMARK NOT DEFINED.	

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# ACRONYMS

ANC	Antenatal Care
CHEW	Community Health Extension Worker
DEO	District Education Officer
DHS	Demographic and Health Survey
DHT	District Health Team
FGD	Focus Group Discussion
HIV	Human Immunodeficiency Virus
HPV	Human Papilloma Virus
HSDP	Health Sector Development Plan
IPTp	Intermittent Preventive Treatment (for malaria) in Pregnancy
IRS	Indoor Residual Spraying
ITN	Insecticide-treated Net
KII	Key Informant Interview
LLIN	Long-lasting Insecticide-treated Net
MAAM	Mass Action Against Malaria
MAPD	Malaria Action Program for Districts
M&E	Monitoring and Evaluation
MIP	Malaria in Pregnancy
MSF	Medecins Sans Frontieres (Doctors Without Borders)
NGO	Non-governmental Organization
NMCP	National Malaria Control Program
PYD	Positive Youth Development
SBCC	Social and Behavior Change Communication
SRH	Sexual and Reproductive Health
STI	Sexually Transmitted Infection
UDHS	Uganda Demographic and Health Survey
UHMG	Uganda Health Marketing Group
UMIS	Uganda Malaria Indicator Survey
UMRSP	Uganda Malaria Reduction Strategic Plan
TASO	The AIDS Support Organization
USAID	United States Agency for International Development
VHT	Village Health Worker

# EXECUTIVE SUMMARY

The United States Agency for International Development's (USAID's) Malaria Action Program for Districts (MAPD), herein referred to as "the project", aims to improve the health status of the Ugandan population by reducing childhood and maternal morbidity and mortality due to malaria. The project supports the Government of Uganda to reduce deaths from malaria among the general population, especially children under five years of age. It works with the Ministry of Health's National Malaria Control Program (NMCP) and the district health teams (DHTs) in 47 districts in Uganda to implement results-oriented and field-tested strategies to contribute to the reduction of malaria and its social and economic effects for around 13 million Ugandans.

As part of USAID's commitment to youth in development,<sup>1</sup> the project conducted an analysis to examine youth<sup>2</sup> considerations, challenges and opportunities regarding malaria prevention and treatment in Uganda. The study was composed of a desk review and four-week field mission (February-March 2017) to collect qualitative data in the West Nile, Central, and Mid-Western regions. The positive youth development framework was to structure the study's design, implementation and analysis. The study's results and recommendations will be used to inform project implementation throughout the project life cycle.

Uganda has the third highest number of *P. falciparum* malaria infections in sub-Saharan Africa, and some of the highest reported malaria transmission rates in the world. Clinically diagnosed malaria is the leading cause of morbidity and mortality in Uganda. Malaria is estimated to account for 30-50 percent of health facility outpatient visits, 15-20 percent of hospital admissions, and 20 percent of hospital deaths. Malaria transmission has a stable, perennial transmission pattern in 90-95 percent of the country. Sixty-nine percent of the Ugandan population is less than 25 years of age.

## Findings<sup>3</sup>

Globally, there are few studies exploring malaria prevention and treatment among adolescents, with the exception of pregnant adolescents. This is despite the fact that malaria is the cause of 50 percent of deaths in sub-Saharan African school children. Data collections regarding adolescents' malaria prevention and treatment practices is scant, especially for boys. Key national health surveys, including the Malaria Indicator Survey and the Demographic and Health Survey, collect data from adolescent girls aged 15-19 years old, but do not collect data for the same age group in adolescent boys. While the Ugandan health information system collects data on all ages, there is no systematic effort to analyse data for the 10- to 19-year-old age group. There is some evidence from previous studies that younger adolescents are at greater risk than older adolescents due to immunological and hormonal factors, and that malaria has a negative impact on school performance. To the author's knowledge, this study is one of the first to undertake a

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<sup>1</sup> USAID, "Youth in Development: Realizing the Demographic Opportunity," (Washington, D.C.: USAID, 2012).

<sup>2</sup> The World Health Organization defines youth as 10-24 years, and adolescents as 10-19 years. For the purposes of this study, we use the term youth; however, the primary focus of the study is adolescents aged 10-19 years.

<sup>3</sup> Please see Section 4.0 of this report for all relevant data source references.

comprehensive examination of youths' malaria-related knowledge, behaviors and practices, and the ability of the health system to respond to them.

### *Preventing malaria in pregnancy*

One quarter of Ugandan girls between the ages of 15 and 19 years have begun childbearing. The provision of three or more doses of intermittent preventive treatment for malaria in pregnancy (IPTp) through antenatal care is part of the Government of Uganda's comprehensive approach to preventing malaria in pregnancy. Only 15.3 percent of Ugandan girls aged 15 to 19 years old are aware of a treatment that can prevent malaria in pregnancy. Data are not available for girls 10 to 14 years old. Data regarding access to IPTp through antenatal care for 10- to 19-year-olds is also not available, but existing data show that mothers less than 20 years of age attend antenatal care at the same frequency as older age groups in which IPTp uptake is estimated at 45 percent. While there are numerous reasons why adolescent girls may delay antenatal care, stigma and discrimination towards unmarried adolescent girls who become pregnant is the largest barrier to antenatal care and IPTp that was identified by study respondents. Adolescent girls report verbal abuse by health workers and parents for becoming pregnant at an early age. The situation is exacerbated by national policies that require adolescent girls to attend antenatal care with their partners, who will often refuse for fear of arrest and imprisonment under the national defilement law that prohibits sexual relations with a girl who is under 18 years of age. Adolescent girls' limited access to and control over financial resources further restricts their access to antenatal care and IPTp by limiting their ability to pay for transportation to reach the health facility or for drugs and other medical supplies as health facilities were reported to be often out of stock. Adolescent girls also report health workers demanding payment for treatment (publicly provided primary health care is free in Uganda), which they often cannot afford.

### *Increasing access to and use of long-lasting insecticide-treated nets*

The Government of Uganda's policy is to achieve universal coverage (one net for every two persons) with long-lasting insecticide-treated nets (LLINs). As of 2016, 79 percent of households have at least one insecticide-treated net (ITN), and 51 percent of households report universal coverage. Data on youth access to, and use of, ITNs are limited. Available data show that individuals between the ages of 5 and 34 years are significantly less likely to sleep under an ITN than all other age groups. Data also show that 93 percent of adolescent girls aged 15 to 19 years identify sleeping under an ITN as a way of avoiding getting malaria, but similar data are not available for boys.

Adults and youth reported that youth are not prioritized in the household for ITN use due to a series of related factors. A shortage of ITNs in households requires that scarce resources be allocated carefully. Consequently, pregnant women and children under five are prioritized for ITNs over other household members. It is standard practice for youth to sleep in groups of two or more with siblings of the same sex, making ITN use sub-optimal, since they are designed for only two people. Adults reported it is more difficult to enforce ITN use in the home or in school among youth compared to younger children given their growing independence.

Pregnant adolescents may have better access to ITNs than others because nets are distributed as part of antenatal care. However, this practice is not universal. In one instance, it was discovered that a health facility only provided antenatal care attendees with an ITN in their third trimester

as an award for regular antenatal care attendance. Despite having a higher likelihood of obtaining an ITN, less than half of young mothers who were interviewed reported sleeping under an ITN. One-third reported not having enough nets for their families.

#### *Improving malaria awareness and education*

Ugandan youths' knowledge of the causes and prevention methods for malaria is high, but misconceptions exist. Many youth who were interviewed confused water and sanitation and personal hygiene practices, such as hand-washing and drinking clean water, as ways to prevent getting malaria. The most common sources of information on malaria according to youth are school and teachers, parents, and health workers or health facilities. For young mothers, health workers or health facilities were the most common source of information, compared to in- and out-of-school youth, who most often reported schools and teachers as their primary malaria information source. Malaria education in schools is provided as part of the primary school curriculum. District health authorities are not systematically involved in malaria education in schools, though some schools and health facilities establish partnerships whereby health workers provide health education sessions in schools on an ad hoc basis. Youth identified their preferred sources of information as mass media-based, including posters, roadside advertisements, and radio and television, as well as health facilities, parents, and peers.

#### *Improving health-seeking behavior*

The quality of health services, including the availability of medicines, wait times, and negative health worker attitudes, appears to play a pivotal role in youth decisions to access treatment. For pregnant adolescents, fear of stigma and discrimination play a significant role in their decision-making process, but for youth in general, the lack of availability of drugs at health facilities greatly influences their decision to seek treatment. Instead, under the guidance of their parents or other influential adults in their lives, adolescents will self-medicate with leftover medication in the home or with traditional medicines, or purchase drugs at drug shops. Girls were more likely to report using herbs and traditional medicines to self-treat, while boys reported using illicit drugs. Boys displayed a further reluctance to go to health facilities for treatment because of a fear of being perceived as weak. Gendered cultural norms equate illness to weakness and instill in men and boys the misguided belief that they should be strong enough to fight off the infection themselves. Both adolescent boys and girls reported receiving support from their parents when they are ill, both in terms of financial support and care when they are sick, but this support can be limited by the resources available in the household.

#### *Strengthening youth-friendly services*

The Government of Uganda has a robust policy framework to support the establishment of youth-friendly services in the public health care system. However, there are significant challenges facing their implementation, including a shortage of dedicated and trained personnel and financial resources. Youth-friendly services currently rely heavily on volunteers, and do not have operating budgets to provide dedicated infrastructure or activities to attract youth. District health teams and health workers recognize the need for services provided in a manner that engages youth, especially in relation to sexual and reproductive health and HIV, but there is no consistent effort to provide training in youth-friendly service provision – likely due to resource constraints. Without training and resources, health facilities will continue to struggle to attract youth. Health facilities partnering with local councils, youth councils, and youth leaders to reach youth is a

promising strategy, but it is likely limited in effectiveness if there are no financial resources available to organize youth events or to provide youth-friendly services.

Youth-targeted malaria programming is uncommon, unless it is one small component of other youth services. However, existing efforts to provide youth-friendly services, including those provided by non-governmental organizations (NGOs), present an opportunity for the more systematic integration of malaria prevention and treatment education as part of youth-focused programs. Many different community-based youth programs – not all of which are health-related – exist, which can be leveraged for malaria education and outreach purposes. Again, the challenge is obtaining the necessary financial and human resources to facilitate partnership-building between the health sector, NGOs, and community youth programs.

## Recommendations

### *Preventing malaria in pregnancy*

1. Support district health authorities to equip health workers with skills to provide youth-friendly services, through improved understanding of youth issues surrounding malaria and improved interpersonal communication to reduce instances of discrimination and abuse. Engage youth, particularly those who sit on the District Committees on Adolescent Health, in the design and delivery of the training sessions to encourage dialogue between health workers and youth.
2. Establish separate youth-friendly spaces or different days for the provision of youth-friendly services.
3. Work with community leaders and influencers, including youth council members, to raise awareness in the community of the challenges faced by pregnant adolescents in accessing health care, and the importance of IPTp to prevent malaria in pregnancy.
4. Support female youth, especially young mothers and pregnant adolescents, and working with district health authorities, to design a social and behavior change communication (SBCC) campaign<sup>4</sup> to increase antenatal care (ANC) attendance and IPTp uptake among their peers.
5. Raise awareness with the NMCP and Reproductive Health Unit at the Ministry of Health of the unintended, negative consequences of the policies to prevent teenage pregnancy and encourage men's participation in ANC, and support ministry efforts at policy revision or adjustments to implementation.
6. Support district health authorities to sensitize health workers on the potentially negative repercussions of policies to prevent teenage pregnancy and encourage men's participation in ANC, and support district efforts to adjust policy implementation in a manner that does not obstruct access for female youth. For example, health workers can be sensitized to provide services to pregnant adolescents when their husband or partner does not accompany them.
7. Explore options for creating an incentives program to encourage ANC attendance by female youth and their partners

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<sup>4</sup> For SBCC activities, youth should be encouraged to identify the mediums most effective in reaching their peers, which may include mass media (radio, televisions, billboards, posters), community dramas, school clubs, and sports events. Debate clubs can be a useful forum for addressing myths and misconceptions.

### *Increasing access to and use of long-lasting insecticide-treated nets*

1. Support district health authorities to implement an SBCC campaign on the importance of all household members sleeping under an LLIN, including youth.
2. Extend school net distribution programs to include secondary school levels (S1 to S5).
3. Support the NMCP to conduct a review of LLIN distribution practices, including the recent mass distribution campaign, to understand how youth access to LLINs is addressed, and to identify lessons for future distribution campaigns and the implementation of the universal coverage policy.
4. Use the planned MAPD LLIN use, care and repair initiatives to include and engage youth and children (through community and school club activities).
5. Ensure that special consideration is given to adolescent girls' needs when promoting or discussing the net user ratio.
6. Support district health authorities to improve the availability of LLINs at health facilities for ANC attendees.
7. Support district health authorities to provide on-the-job coaching of health workers that includes instructions to provide an LLIN to all women and youth attending ANC at their first appointment. Supervision and performance reviews should support the coaching.
8. Organize a youth-led (and adult-guided) assessment of youth attitudes and practices regarding LLIN use. Provide a stipend for youth involved in the study.
9. Support male and female youth, working with district health authorities, to design an SBCC campaign to increase LLIN use among their peers.
10. Support youth leaders to bring together youth in their schools and communities to discuss the challenges they face in protecting themselves from malaria, including LLIN use, and to develop strategies to overcome them.

### *Malaria knowledge, education and outreach*

1. Support male and female youth, working with district health authorities, to design an SBCC campaign to educate youth on malaria causes and prevention methods, and to dispel common misconceptions.
2. Support district health authorities to work with education authorities to identify ways to improve coordination for improved malaria education in schools. Planned school LLIN distribution activities can be leveraged.
3. Support schools to incorporate malaria education into school clubs to promote youth dialogue and engender youth leadership on malaria prevention and treatment in schools and at home.
4. Support district health authorities to work with existing organizations conducting youth outreach, including public health facilities, NGOs and youth organizations, to integrate malaria prevention and treatment messages and services.
5. Create youth leagues with the MAPD village health clubs and link them to the youth councils so they can oversee and give support to these clubs in order to develop malaria skills among youth.
6. Engage youth in SBCC activities to select key influencers, promote youth dialogue, and to identify youth priorities in all health promotion activities.
7. Create youth leagues with the MAPD village health clubs and link them to the youth councils so they can oversee and give support to these clubs in order to develop malaria skills among youth.

8. Engage youth in SBCC activities to select key influencers, promote youth dialogue, and to identify youth priorities in all health promotion activities.

#### *Treatment-seeking behaviors*

1. Support male youth, working with district health authorities, to develop an SBCC campaign to challenge gender norms that result in delayed treatment-seeking by men and boys.
2. Support male youth in schools and communities to establish and lead peer support groups where they can discuss and challenge local concepts of masculinity and its impact on their health.
3. Support youth, working with district health authorities, to develop an SBCC campaign to promote the “test and treat” strategy among youth. Emphasize the importance of early treatment and adherence to treatment/medication in a youth-friendly manner.
4. Link with and share field-based information with Uganda Health Marketing Group (UHMG) which is responsible for supply chain so as to identify and address bottlenecks in the delivery of essential medicines, including anti-malarial drugs, to public health facilities.
5. Build capacity at the local level for ordering and managing drug stocks, and enhance supervision. Monitor stock levels and build the capacity of health workers to manage quantification and requisition of anti-malarial medication.
6. Advocate increase of essential medicines and commodities budgets and investments by the government and donors.
7. Support the NMCP to integrate malaria in the next iteration of the Adolescent Health Policy Guidelines and Service Standards.
8. Support NMCP and district health authorities to disseminate the revised guidelines, and to provide training to health workers on its implementation, working in partnership with the Ministry of Labour, Gender and Social Development and district community development officers.

#### *Youth-friendly services*

1. Support the establishment of dedicated national and district budgets for the operation of youth-friendly corners in health facilities, and youth outreach in communities.
2. Increase the numbers of youth who are trained as community health extension workers (CHEWs)/village health teams (VHTs)<sup>5</sup>.
3. Support district health authorities to deliver a malaria package in youth-friendly services, as per the revised Adolescent Health Policy Guidelines and Service Standards.
4. Support district health authorities to build the capacity of district staff and health workers for the provision of youth-friendly services. Engage youth in the design and delivery of

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<sup>5</sup>Under Government of Uganda policy, current VHTs remain employed but no new VHTs will be recruited. Their replacements, CHEWs, have not yet been recruited; when they are recruited, they will be working at the parish level and slowly taking on the work that is currently being done by VHTs. When VHTs relocate or leave their positions, they are not replaced. After about five years, it is anticipated that all VHTs will have been replaced by CHEWs.

capacity-building initiatives to encourage dialogue and collaboration between district health authorities and youth.

5. Involve youth at all levels of advocacy, including in district health management teams.
6. Support district health authorities to analyse existing malaria data disaggregated by age (10-14 years, 15-19 years) and by sex, and to incorporate the findings into district malaria programs.
7. Support youth to work with district health authorities to identify data gaps for malaria trends in youth, and to collect and analyse data among their peers to inform district malaria programs.

# 1. INTRODUCTION

The United States Agency for International Development's (USAID's) Malaria Action Program for Districts (MAPD), herein referred to as "the project", aims to improve the health status of the Ugandan population by reducing childhood and maternal morbidity and mortality due to malaria. The project supports the Government of Uganda to reduce deaths from malaria among the general population, especially children under five years of age. It works with the National Malaria Control Program (NMCP) at the Ministry of Health and the district health teams (DHTs) in 47 districts in Uganda to implement results-oriented and field-tested strategies to contribute to the reduction of malaria and its social and economic effects in about a third of the country, reaching around 13 million Ugandans. The project has three objectives:

1. Implement effective malaria prevention programs in support of the Uganda Malaria Reduction Strategic Plan;
2. Implement effective malaria diagnosis and treatment activities in support of the Uganda Malaria Reduction Strategic Plan; and
3. Build capacity of the National Malaria Control Program and district health teams to manage and sustain efficient malaria activities in focus districts.

As part of USAID's commitment to youth in development,<sup>6</sup> the project conducted an analysis to examine youth<sup>7</sup> considerations, challenges and opportunities across all project components: 1) Effective malaria prevention programs implemented in support of the Uganda Malaria Reduction Strategic Plan;<sup>8</sup> 2) Effective malaria diagnosis and treatment activities implemented in support of the Uganda Malaria Reduction Strategic Plan; and, 3) Capacity building of the NMCP and DHTs to manage and sustain efficient malaria activities in focus districts.

The study included a desk review and a four-week field mission (February-March 2017) to collect qualitative data in the West Nile, Central, and Mid-Western regions. After describing the country context and the study methodology, this report discusses key findings, broadly categorized by malaria prevention and malaria diagnosis and treatment. It then draws conclusions and provides recommendations to strengthen youth programming, participation and partnership in support of the project's objectives.

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<sup>6</sup> USAID, "Youth in Development: Realizing the Demographic Opportunity."

<sup>7</sup> The World Health Organization defines youth as 10-24 years, and adolescents as 10-19 years. For the purposes of this study, we use the term youth; however, the primary focus of the study is adolescents aged 10-19 years.

<sup>8</sup> National Malaria Control Programme (NMCP), "Uganda Malaria Reduction Strategic Plan 2014-2020," (Kampala, Uganda 2014).

## 2. BACKGROUND

### 2.1 Country context

Uganda is located in the East African region of sub-Saharan Africa, and lies across the equator, about 800 kilometers inland from the Indian Ocean. The country is landlocked, bordered by Kenya in the east; South Sudan in the north; Democratic Republic of Congo in the west; Tanzania in the south; and Rwanda in the southwest. Uganda has a total population of 34.9 million people with an annual increase rate of 3 percent. Uganda has one of the youngest populations in the world with 68.5 percent (70.1 percent male, 67 percent female) less than 25 years of age.<sup>9</sup> Adolescents (10-19 years) compose 25.6 percent (26.2 percent male, 25.1 percent female) of the population.<sup>10</sup>

Figure 1. Map of Uganda<sup>11</sup>



<sup>9</sup> Uganda Bureau of Statistics (UBOS), "National Population and Housing Census 2014," (Kampala, Uganda: UBOS, 2016).

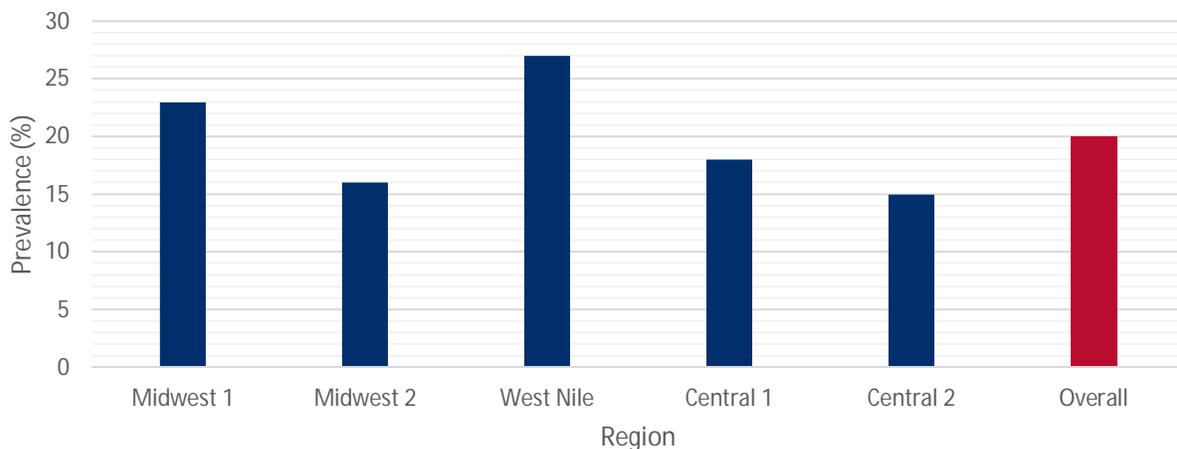
<sup>10</sup> Ibid.

<sup>11</sup> Uganda Bureau of Statistics and ICF International, "Uganda Malaria Indicator Survey 2014-15," (Kampala, Uganda, and Rockville, Maryland, USA: UBOS and ICF International, 2015).

Uganda has the third highest number of *P. falciparum* malaria infections in sub-Saharan Africa, and accounts for four percent of the total cases of malaria globally (behind Nigeria (29 percent), Democratic Republic of Congo (9 percent), and India (6 percent)).<sup>12</sup> Clinically-diagnosed malaria is the leading cause of morbidity and mortality in Uganda.<sup>13,14</sup> Despite the country's moderate population size, Uganda has some of the highest estimated numbers of malaria-related cases and deaths in sub-Saharan Africa.<sup>15</sup> Malaria is estimated to account for 30-50 percent of health facility outpatient visits, 15-20 percent of hospital admissions, and 20 percent of hospital deaths.<sup>16</sup> Malaria transmission has a stable, perennial transmission pattern in 90 to 95 percent of the country.<sup>17</sup> The most common malaria vectors are *Anopheles gambiae s.l.* and *Anopheles funestus*, both of which feed and rest indoors, with peak biting times in the late evening and early morning. Insecticide-treated nets (ITNs) and indoor residual spraying (IRS) are the primary vector control strategies in this context.<sup>18</sup>

The national malaria prevalence is 20.5 percent, with significant variation among regions, ranging from 15 percent in Central 2 region to 27 percent in West Nile region (Chart 1).<sup>19</sup> The malaria prevalence for women and men is 21.2 and 19.8 percent, respectively.<sup>20</sup>

**Chart 1. Malaria prevalence by region**<sup>21</sup>



<sup>12</sup> WHO, "World Malaria Report 2016," (Geneva: World Health Organization, 2016).  
<sup>13</sup> Uganda Bureau of Statistics (UBOS) and ICF, "Uganda Demographic and Health Survey 2016: Key Indicators Report," (Kampala, Uganda: UBOS, and Rockville Maryland: UBOS and ICF2017).  
<sup>14</sup> Uganda Bureau of Statistics and ICF International, "Uganda Malaria Indicator Survey 2014-15."  
<sup>15</sup> Ibid.  
<sup>16</sup> National Malaria Control Programme (NMCP), "Uganda Malaria Reduction Strategic Plan 2014-2020."  
<sup>17</sup> Ibid.  
<sup>18</sup> Ibid.  
<sup>19</sup> Uganda Bureau of Statistics and ICF International, "Uganda Malaria Indicator Survey 2014-15."  
<sup>20</sup> Ibid.  
<sup>21</sup> Ibid.

Uganda has made significant progress on malaria indicators in the last decade (Table 1). The percentage of households with at least one ITN increased from 16 to 78 percent between 2006 and 2016.<sup>22</sup> Over the same period, the proportion of pregnant women and children under five sleeping under an ITN grew from 10 percent to 64 percent and 62 percent, respectively.<sup>23</sup>

**Table 1. Progress on malaria indicators to date**

Indicator	2006	2009	2011	2014-15	2016
	UDHS	UMIS	UDHS	UMIS	UDHS
Percentage of households that own at least one ITN	16%	47%	60%	90%	78%
Proportion of children under five years of age sleeping under an ITN the previous night	10%	33%	43%	74%	62%
Proportion of pregnant women sleeping under an ITN the previous night	10%	44%	47%	75%	64%
Proportion of pregnant women who received at least two doses of IPTp, at least one during ANC	16%	32%	25%	45%	45%
Prevalence of parasitemia (by microscopy) in children 0-59 months	NA	42%	NA	19%	NA
Prevalence of severe anemia in children 6-59 months (Hb<8 g/dL)	NA	10%	5%	5%	6%

ITN = Insecticide-treated net  
 IPTp = Intermittent preventive treatment (of malaria) in pregnancy  
 ANC = Antenatal care  
 NA = Not applicable

However, challenges remain. Uganda has one of the highest global fertility rates (6.2 births per woman), making preventing malaria in pregnancy (MIP) a high priority.<sup>24</sup> While the percentage of women receiving antenatal care from a skilled provider for their last birth in the last five years is high (95 percent), only 45 percent of pregnant women received two or more doses (out of the recommended three) of intermittent preventive treatment for malaria in pregnancy (IPTp).<sup>25</sup> The population is also very young, with 51 percent below the age of 15, yet just 62 percent of children aged 5 to 14 years sleep under an ITN. Only 62 percent of households meet the definition of universal ITN coverage.<sup>26,27</sup>

The most recent Uganda Malaria Indicator Survey (UMIS) and Uganda Demographic and Health Survey (UDHS) do not disaggregate malaria data by age or sex in a manner that allows an analysis

<sup>22</sup> Uganda Bureau of Statistics (UBOS) and ICF, "Uganda Demographic and Health Survey 2016: Key Indicators Report."

<sup>23</sup> Ibid.

<sup>24</sup> Uganda Bureau of Statistics (UBOS), "National Population and Housing Census 2014."

<sup>25</sup> Uganda Bureau of Statistics and ICF International, "Uganda Malaria Indicator Survey 2014-15."

<sup>26</sup> Defined as at least one net for every two persons.

<sup>27</sup> Uganda Bureau of Statistics and ICF International, "Uganda Malaria Indicator Survey 2014-15."

of youth trends.<sup>28</sup> However, some inferences can be made, such as individuals between the ages of 5 and 34 years are significantly less likely to sleep under an ITN than all other age groups (Table 2).

**Table 2. Use of mosquito nets by persons in the household<sup>29</sup>**

Age (in years)	Percentage who slept under any net last night	Percentage who slept under an ITN last night	Percentage who slept under an LLIN last night
<5	77.5	74.3	74.2
5-14	<b>64.9</b>	<b>62.4</b>	<b>62.2</b>
15-34	<b>70.1</b>	<b>66.5</b>	<b>66.4</b>
35-49	80.9	77.9	77.8
50+	77.3	74.1	74.1

Available statistics on IPTp uptake in women are similarly not broken down by age.<sup>30</sup> However, according to the UMIS (2014-2015), 25 percent of adolescents aged 15-19 years in Uganda have begun childbearing and 19 percent have given birth.<sup>31</sup> Adolescent childbearing is more common in rural than in urban areas in Uganda (27 versus 19 percent, respectively).<sup>32</sup> The proportion of teenagers who have started childbearing decreases with increasing level of education, and teenagers in the lowest wealth quintile tend to begin childbearing earlier than those in the highest quintile (34 versus 15 percent, respectively).<sup>33</sup>

Globally, there are few studies exploring the risk factors and burden of malaria in adolescents, with the exception of pregnant adolescents. This is despite the fact that malaria is the cause of 50 percent of deaths in sub-Saharan African school children.<sup>34,35</sup> There is some evidence from previous studies that younger adolescents are at greater risk than older adolescents due to

<sup>28</sup> The age breakdowns available for malaria indicators representing male and female respondents are: less than 5 years, 5-14, 15-34, 35-49, and 50 and above. For data on women only, 15-19 years and 20-24 years are analyzed separately.

<sup>29</sup> Uganda Bureau of Statistics and ICF International, "Uganda Malaria Indicator Survey 2014-15."

<sup>30</sup> Ibid.

<sup>31</sup> Ibid.

<sup>32</sup> Ibid.

<sup>33</sup> Uganda Bureau of Statistics (UBOS) and ICF, "Uganda Demographic and Health Survey 2016: Key Indicators Report."

<sup>34</sup> D. G. Lalloo, P. Olukoya, and P. Olliaro, "Malaria in Adolescence: Burden of Disease, Consequences, and Opportunities for Intervention," *Lancet Infectious Diseases* 6, no. 12 (2006).

<sup>35</sup> V. N. Orish et al., "Adolescent Pregnancy and the Risk of Plasmodium Falciparum Malaria and Anaemia—a Pilot Study from Sekondi-Takoradi Metropolis, Ghana," *Acta Tropica* 123, no. 3 (2012).

immunological and hormonal factors,<sup>36</sup> and that malaria has a negative impact on school performance.<sup>37,38,39</sup>

Existing government frameworks include strong references to youth engagement in health policies and programs. The Uganda Malaria Reduction Strategic Plan (UMRSP, 2014-2020) proposes to mobilize youth by engaging them in activities that seek to reduce malaria morbidity and related mortality and bring about sustainable social and individual behavior change.<sup>40</sup> Through the strategic engagement of school pupils, the UMRSP proposes to build champions that promote malaria intervention messages and act as change agents at home and among peers.<sup>41</sup> The Health Sector Development Plan (HSDP, 2016-2020) supports the engagement and mobilization of youth by promoting good nutrition and sexual and reproductive health education in schools and communities.<sup>42</sup> By linking the community to the formal health service and through community outreach, which includes hosting radio programs and family activities, the HSDP aims to successfully engage youth.<sup>43</sup> The National Strategy to End Child Marriage and Teen Pregnancy focuses on community mobilization, sensitization and raising awareness about the rights of women and children.<sup>44</sup> Proposed program interventions have taken the form of mass media campaigns (print and electronic media); music, dance and drama; provision of sexual reproductive health information; support of girl's education; equipping girls with vocational training skills; increased access to micro finance; and capacity building in financial literacy, which have not been assessed at this juncture. Lastly, the recently renewed Uganda National Youth Policy 2016, and the National Youth Council Act, Cap 319, establish youth council structures from village to national level to provide channels through which youth can consolidate their role in national development in the economic, social, cultural and educational fields.<sup>45</sup> Youth councils are meant to promote and provide a unified and integrated system through which youth can communicate and consolidate their ideas and activities.<sup>46</sup>

## 2.2 Study description

From February to March 2017, the project conducted a youth analysis to identify the age-related challenges and constraints that may hinder the project's goals and activities, and to identify the

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<sup>36</sup> Laloo, Olukoya, and Olliaro, "Malaria in Adolescence: Burden of Disease, Consequences, and Opportunities for Intervention."

<sup>37</sup> N. King, C. Dewey, and D. Borish, "Determinants of Primary School Non-Enrollment and Absenteeism: Results from a Retrospective, Convergent Mixed Methods, Cohort Study in Rural Western Kenya," *Plos One* 10, no. 9 (2015).

<sup>38</sup> D. A. P. Bundy et al., "What Should Schools Do About Malaria?," *Parasitology Today* 16, no. 5 (2000).

<sup>39</sup> A. W. Al Serouri et al., "Impact of Asymptomatic Malaria Parasitaemia on Cognitive Function and School Achievement of Schoolchildren in the Yemen Republic," *Parasitology* 121 (2000).

<sup>40</sup> National Malaria Control Programme (NMCP), "Uganda Malaria Reduction Strategic Plan 2014-2020."

<sup>41</sup> Ibid.

<sup>42</sup> Ministry of Health (Uganda), "Health Sector Development Plan 2014/15-2019/20," (Kampala, Uganda: Ministry of Health, 2014).

<sup>43</sup> Ibid.

<sup>44</sup> Ministry of Gender Labour and Social Development (MoGLSD) (Uganda), "The National Strategy to End Child Marriage and Teenage Pregnancy 2014/15-2019/2020," (Kampala, Uganda: MoGLSD, 2015).

<sup>45</sup> "Uganda National Youth Policy," (Kampala, Uganda: MoGLSD, 2016).

<sup>46</sup> Ibid.

possible differential effects of the project on male and female youth with an emphasis on those aged 10-19 years. The youth analysis sought to answer the following questions:

1. Are there any laws, policies and institutional practices with implicit or explicit age biases that could potentially affect youths' ability to participate in the project or access affordable high-quality malaria prevention, diagnosis and treatment services?
2. How do existing age-related norms and cultural beliefs affect malaria prevention-, diagnosis-, and treatment-related behaviors of youth?
3. How does the relative status of youth, including decision-making patterns, in families, communities, and the country influence the ability of youth to access resources related to malaria prevention, diagnosis and treatment?

The analysis was conducted in six districts across three regions using a purposive sampling strategy. In each of the study regions, two districts were selected, representing one urban and one rural population group. Among the study districts, Arua had the largest population at 782,077, while Koboko had the smallest population at 206,495 (Table 3).

**Table 3. Total population by sex in youth analysis study districts<sup>47</sup>**

Region	District	Rural/Urban	Male	Female	Total population	Estimated no. of young people (10-19 y)
West Nile	Koboko	Rural	102,529	103,966	206,495	52,863
	Arua	Urban	376,953	405,124	782,077	200,212
Central	Mukono	Urban	297,154	299,650	596,804	152,782
	Buikwe	Rural	212,827	209,944	422,771	108,229
Mid-West	Kasese	Urban	339,455	355,537	694,992	177,918
	Bundibugyo	Rural	108,766	115,621	224,387	57,443

<sup>47</sup> Uganda Bureau of Statistics (UBOS), "National Population and Housing Census 2014."

# 3. METHODOLOGY

## 3.1 Analytic framework

The Positive Youth Development (PYD) measurement framework<sup>48</sup> was used to structure the study's design, implementation and analysis. The PYD framework recognizes youth as resources to their communities when they are actively engaged; empowered with the necessary knowledge, skills and tools; and given a safe space to contribute their ideas and energy. It identifies four domains that are integral to achieving healthy, productive and engaged youth: Agency, Contribution, Assets, and Enabling Environment (Figure 2). Hinson et al.<sup>49</sup> define the domains as follows:

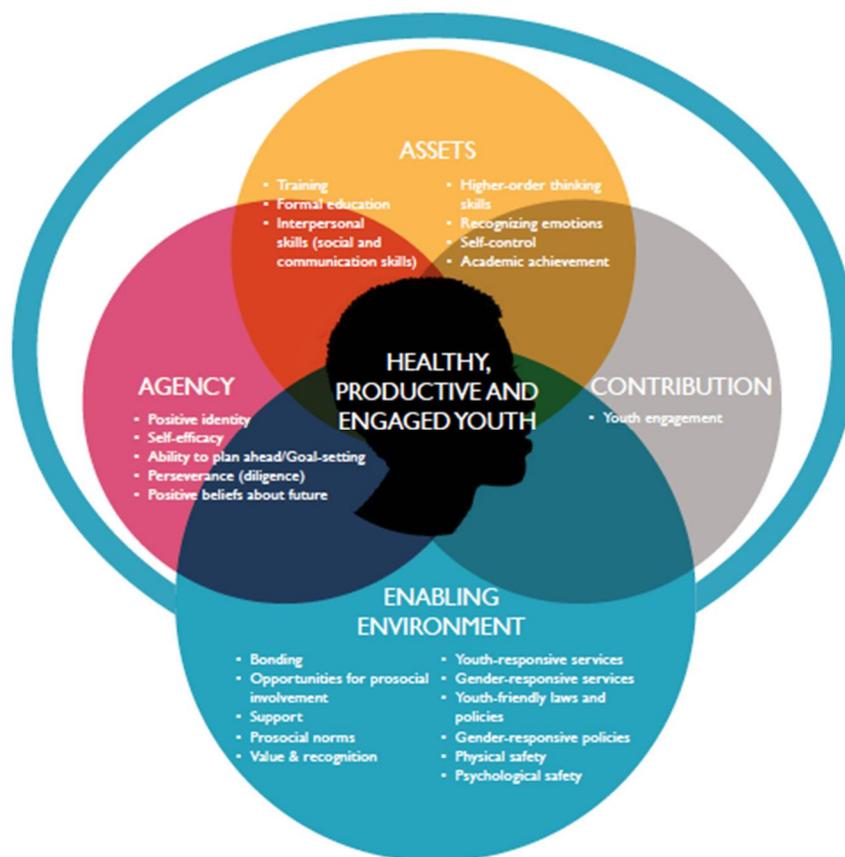
- **Assets:** Youth have the necessary resources, skills and competencies to achieve desired outcomes.
- **Agency:** Youth perceive and have the ability to employ their assets and aspirations to make or influence their own decisions about their lives and set their own goals, as well as to act upon those decisions in order to achieve desired outcomes.
- **Contribution:** Youth are engaged as a source of change for their own and for their communities' positive development.
- **Enabling environment:** Youth are surrounded by an environment that develops and supports their assets, agency, access to services, and opportunities, and strengthens their ability to avoid risks and to stay safe, secure, and be protected and live without fear of violence or retribution. An enabling environment encourages and recognizes youth, while promoting their social and emotional competence to thrive. The term "environment" should be interpreted broadly and includes: social (e.g., relationships with peers and adults), normative (e.g., attitudes, norms and beliefs), structural (e.g., laws, policies, programs, services, and systems) and physical (e.g., safe, supportive spaces).

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<sup>48</sup> Hinson et al., "Measuring Positive Youth Development Toolkit: A Guide for Implementers of Youth Programs," (Washington, DC: YouthPower Learning, Making Cents International, 2016).

<sup>49</sup> Ibid.

Figure 2. Positive Youth Development Measurement Framework<sup>50</sup>



## 3.2 Study process

### 3.2.1 Desk review

A rapid desk review was conducted to identify key issues related to youth vulnerability to malaria, and barriers to malaria prevention, diagnosis and treatment. A targeted literature search in Medline (OVID interface) and Web of Science was conducted to identify peer-reviewed articles with an emphasis placed on identifying studies conducted in Uganda or the East African region. The results from *USAID's Malaria Action Program for Districts Gender Analysis Report*<sup>51</sup> and a series of workshops on positive youth development conducted in Uganda with project partners in September 2017 were also used to inform the youth analysis.

Quantitative data concerning the patterns of malaria infection and control in Uganda by sex and age were summarized from existing resources, including the *2014-15 Uganda Malaria Indicator*

<sup>50</sup> Ibid.

<sup>51</sup> USAID, "Usaid's Malaria Action Program for Districts: Gender Analysis Report," (Washington, DC: USAID, 2017).

Survey, the 2011 Uganda Demographic and Health Survey, and the Uganda Demographic and Health Indicator Survey 2016: Key Indicators Report.<sup>52,53,54</sup>

### 3.2.2 Fieldwork

The youth analysis was conducted using qualitative methods that included key informant interviews (KIIs) and focus group discussions (FGDs) in six districts in the West Nile (Arua and Koboko), Mid-western (Kasese and Bundibugyo), and Central (Mukono and Buikwe) regions. A semi-structured interview guide was used in all KIIs and FGDs (see Annex A). The primary target population was female and male youth aged 10-19 years. To capture youth input, 42 FGDs were planned at the community level (seven per district):

1. In-school girls, 10-14 years
2. In-school girls, 15-19 years
3. Out-of-school girls, 12-17 years
4. Young mothers and pregnant adolescents, 15-19 years
5. In-school boys, 10-14 years
6. In-school boys, 15-19 years
7. Out-of-school boys, 12-17 years

Further, KIIs and FGDs were held with district health teams, district-level political representatives, health center staff and management, sub-county officials, local councils, village health teams, teachers, and parents of youth. At the national level, key informant interviews were conducted with project staff, representatives from the national government, international and national non-governmental organizations, and United Nations organizations (see Annex B for a full list of interviewees at national and district levels).

The research team consisted of one international youth specialist, the project gender and youth specialist, one national researcher, and two national youth researchers (one male and one female). The inclusion of two youth researchers ensured that youth perspectives were incorporated in the study's design, implementation and analysis, and strengthened the team's ability to engage with youth stakeholders. By doing so, the team also modeled for stakeholders how youth can be involved in the development of programs. The research protocol required two research team members to be present during each KII and FGD. One member was responsible for conducting the interview or focus group, and the other was responsible for note-taking. In the few instances where only one team member was present, the session was audio-recorded to ensure key observations were not lost.

### 3.2.3 Data analysis

Team members prepared detailed, typed summaries for all KIIs/FGDs. An international consultant reviewed all KII and FGD records to identify common themes and patterns, as well as any significant outliers, and prepared a narrative summary of the findings. The research team members

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<sup>52</sup> UBOS, Uganda Malaria Indicator Survey, 2015.

<sup>53</sup> UBOS, Uganda Demographic and Health Survey, 2017.

<sup>54</sup> UBOS, Uganda Demographic and Health Survey, 2012.

provided additional input on common themes, patterns and outliers, identified illustrative examples and case studies, and identified program opportunities, constraints and recommendations.

#### 3.2.4 Strengths and limitations

The research team worked closely with the project's regional offices and district health teams to effectively mobilize study participants at the community level. The use of standardized interview guides and data collection tools helped to ensure consistency across interviews and focus groups. Interviews were conducted until data saturation<sup>55</sup> was reached. Study findings were highly consistent across geographic regions, and aligned with the findings of the project's gender analysis that was conducted in six separate districts in January-February 2017.

The main challenges encountered were mobilizing a sufficient cross-section of youth to participate in focus group discussions and securing interviews with selected key informants, but this occurred in only a few instances. To overcome such challenges, the research team worked with local authorities to reach out to targeted key informants and to engage youth. Field work also began at the same time as the launch of the universal coverage campaign for LLINs which limited the availability of NMCP staff for interviews. In the end, the research team conducted 39 of the planned 42 youth FGDs, and 47 of the planned 50 KIIs. Finally, while the data analysis was disaggregated by sex, the level of effort required to conduct a systematic age-disaggregated analysis (10-14 years vs 15-19 years) was beyond the scope of the current report.

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<sup>55</sup> Theoretical saturation of data in qualitative research means that researchers reach a point in their analysis of data that sampling more data will not lead to more information related to their research questions.

# 4. RESULTS

## 4.1 Malaria prevention

### 4.1.1 Intermittent preventive treatment in pregnancy

One-quarter of Ugandan girls between the ages of 15 and 19 years have begun childbearing.<sup>56</sup> Pregnant women and girls are more susceptible to malaria due to their weaker immune status.<sup>57</sup> Malaria in pregnancy is associated with adverse outcomes including miscarriage, low birth weight, and maternal anaemia.<sup>58</sup> The Government of Uganda has adopted a three-pronged approach to preventing and treating malaria in pregnancy: (1) increasing ITN use, (2) providing three or more doses of IPTp through ANC, and (3) effective clinical case management for malaria infection.<sup>59</sup>

Statistics on the uptake of IPTp by adolescent girls are not available. According to the UMIS (2014-2015), only 15.3 percent of women aged 15-19 years are aware of SP/Fansidar as a medicine that can be given to pregnant women to avoid getting malaria.<sup>60</sup> This is significantly lower than other age groups (e.g., 41.5 percent for women aged 20-24 years, and 56.8 percent for women aged 25-29 years).<sup>61</sup> In comparison, mothers less than 20 years of age have comparable rates of receiving antenatal care from a skilled provider as mothers aged 20-34 years (97.3 and 97.6 percent, respectively).<sup>62</sup> Yet, statistics show that only 45 percent of women who attend ANC received two or more doses (out of the recommended three) of IPTp to prevent malaria in pregnancy.<sup>63</sup> It may be assumed that this rate is even lower in adolescent girls given their decreased awareness of SP/Fansidar as a method for preventing malaria in pregnancy.

The consequences of malaria in adolescent pregnancies are especially severe. For example, in Tanzania, pregnant adolescents were found to have higher levels of parasite prevalence, and a 1.4-fold increased risk of low birth weight compared to adult women.<sup>64</sup> These findings point to the critical need to prioritize preventing malaria in adolescent pregnancies for the successful control of malaria in pregnancy in Uganda.

### *Stigma and discrimination*

The current study explored the reasons adolescent girls may skip or delay consistent ANC attendance, affecting their access to, and uptake of, three or more doses of IPTp. Approximately

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<sup>56</sup> Uganda Bureau of Statistics (UBOS) and ICF, "Uganda Demographic and Health Survey 2016: Key Indicators Report."

<sup>57</sup> National Malaria Control Programme (NMCP), "Uganda Malaria Reduction Strategic Plan 2014-2020."

<sup>58</sup> World Health Organization and Roll Back Malaria Partnership, "Gender, Health, and Malaria," (Geneva: WHO, 2007).

<sup>59</sup> National Malaria Control Programme (NMCP), "Uganda Malaria Reduction Strategic Plan 2014-2020."

<sup>60</sup> Uganda Bureau of Statistics and ICF International, "Uganda Malaria Indicator Survey 2014-15."

<sup>61</sup> Ibid.

<sup>62</sup> Uganda Bureau of Statistics (UBOS) and ICF, "Uganda Demographic and Health Survey 2016: Key Indicators Report."

<sup>63</sup> Uganda Bureau of Statistics and ICF International, "Uganda Malaria Indicator Survey 2014-15."

<sup>64</sup> U. U. Wort, M. Warsame, and B. J. Brabin, "Birth Outcomes in Adolescent Pregnancy in an Area with Intense Malaria Transmission in Tanzania," *Acta Obstetrica Et Gynecologica Scandinavica* 85, no. 8 (2006).

half of young mothers who were interviewed reported challenges in accessing antenatal care, with the most challenges reported in Koboko district. The most prominent barrier to ANC reported by young mothers was the fear of stigma and discrimination by health workers, parents and community members. Pregnancy at a young age is considered taboo in Ugandan culture.<sup>65</sup> Pregnant adolescents can face discriminatory attitudes and treatment by health workers, which several adolescents expressed in focus group discussions:

*"[Pregnant] girls go for ANC but late because of fear to be seen. They fear nurses because some nurses are harsh. They may say 'You stupid lady, why did you conceive?' and may not attend to [the girl] because they are perceived as useless, and adding on to the already [heavy workload] of the health workers."*

*~ Out-of-school adolescent girl, Koboko district*

*"It's an abomination to get pregnant young. Because of fear for a youth to do something wrong about herself, you discipline a bit e.g. by beating, some give them to men who have impregnated them. Such youth may fear and fail to get access to malaria treatment. We sensitize parents of pregnant adolescents to forgive them."*

*~ Health workers, Mukono district*

Pregnant adolescents can also face discriminatory behavior, and even abuse, from parents or other community members. Because of this, they will often delay attending ANC to keep their pregnancy a secret as long as possible.

*"An adolescent who gets pregnant can be punished by a mother and may not be helped to access services because access is determined by the parents. Such delays in seeking treatment can lead to miscarriages."*

*~ District health team, Buikwe district*

The project's gender analysis that preceded the youth analysis found that Ugandan women and girls are restricted in their access to ANC and IPTp for many of the same reasons.<sup>66</sup> A study of the experiences of pregnant adolescents in Uganda found that girls face domestic physical violence and psychological abuse from parents, partners and the community.<sup>67</sup> Health workers were also found to be rude and unsympathetic, which contributed to delayed health-seeking.<sup>68</sup> Similarly, another Ugandan study found that pregnant adolescent girls were the group least likely to use ANC due to stigma and the negative attitudes of health workers.<sup>69</sup>

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<sup>65</sup> Guttmacher Institute, "Unintended Pregnancy and Abortion in Uganda," in *Series 2013* (Washington, DC: Guttmacher Institute, 2013).

<sup>66</sup> USAID, "Usaid's Malaria Action Program for Districts: Gender Analysis Report."

<sup>67</sup> L. Atuyambe et al., "Experiences of Pregnant Adolescents--Voices from Wakiso District, Uganda," *African Health Sciences* 5, no. 4 (2005).

<sup>68</sup> Atuyambe L, Mirembe F, Johansson A, Kirumira EK, Faxelid E. Experiences of pregnant adolescents--voices from Wakiso district, Uganda. *African Health Sciences* 2005; **5**(4): 304-9.

<sup>69</sup> Mbonye AK, Neema S, Magnussen P. Preventing malaria in pregnancy: a study of perceptions and policy implications in Mukono district, Uganda. *Health Policy and Planning* 2006; **21**(1): 17-26.

### *National policies*

Further, adolescent girls reported delays in attending and receiving antenatal care if they did not have a husband or partner to accompany them to the health facility. To encourage men's engagement in ANC, the Ministry of Health implemented a national policy requiring men to accompany women to their first ANC visit. As an incentive, couples who attend together are prioritized for service. While well-intentioned, the policy's implementation has led to some unintended negative consequences, including acting as a barrier to ANC and IPTp uptake for some women and girls. Adolescent girls reported health workers denying or delaying care because they were not accompanied by their partners.

*"When you have just gotten pregnant you may fear to go to the hospital. You may go and they ask for your husband so it's hard especially when someone impregnated you and they ran away. Or even denied the pregnancy. You may fear to go to the hospital."  
~ Young mothers, Bundibugyo district*

In Koboko district, young mothers reported that they were required to obtain letters from the local council to access antenatal care without their partners.

*"Some husbands deny [the pregnancy], and it is hard going for ANC. Some men run away after impregnating girls yet both are needed at health facilities. After delivering, we get challenges of finding clothes for the child. [Health workers] refuse to work on us at health facilities without our husbands, unless we get letters from the local council chairman."  
~ Young mothers, Koboko district*

A group of young mothers who were interviewed in Kasese district reported that they do not need to ask permission from their husbands to attend the health clinic. However, problems arise for them because health workers expect their husbands to accompany them.

*"We think the problem is because health facilities ask us to go with our husbands whom we have to convince, otherwise permission is not required."  
~ Young mothers, Kasese district*

A national law prohibiting sex with a person under the age of 18 years acts as a further deterrent to ANC attendance by adolescent girls. The defilement law,<sup>70</sup> as it is commonly called, is intended to prevent child marriage and teenage pregnancy, but it can also discourage underage girls from attending ANC if they fear their partners will be arrested.

One-quarter of district-level officials who were interviewed acknowledged that requiring male partner attendance at the first ANC visit discourages pregnant adolescents from seeking care. Evidence from a recent gender analysis conducted by the project found that some men with

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<sup>70</sup> "Acts Supplement No. 4," *The Uganda Gazette* No. 43 C (2007).

underage partners will avoid attending ANC, or actively discourage their partners' attendance, to avoid questions from health workers.<sup>71</sup>

#### *Limited access to and control of resources*

Respondents reported that financial constraints restrict ANC attendance by limiting adolescent girls' ability to purchase drugs and maternity ware. While publicly-funded health care is free in Uganda, drug and supplies shortages in public health facilities often require Ugandans to pay for medical supplies, drugs or services in private clinics and drug shops.<sup>72</sup> Previous research has found that adult women in Uganda often face difficulties in accessing health care due to their limited access to and control over resources.<sup>73</sup> However, the situation is likely worse for adolescent girls who are less likely to have their own sources of income compared to adult women, and are more likely to be without a husband as a source of financial assistance.<sup>74</sup> While 20 percent of girls aged 15-19 years are either married or cohabitating, 25 percent have begun childbearing.<sup>75</sup> Thus, more adolescent girls are pregnant than married, and likely face difficulties in obtaining sufficient financial resources to access health care.

Further compounding the problem is parents reported reluctance to support pregnant adolescents because they expect her partner or husband to take financial responsibility for the pregnancy. When he does not do so, either due to poverty or neglect, an adolescent girl has few other options to obtain the resources necessary to attend ANC.

*"Parents don't support pregnant adolescents because they expect their husbands to support them, but the husband may be poor. Some husbands just run away to avoid responsibility."*

*~ Health workers, Koboko district*

Adolescent girls can also face financial challenges when health workers demand payment for services, despite such requests being illegal. In Kasese district, young mothers reported health workers asking for payment before providing services. They also reported health workers denying services to clients who they believe do not have the resources to pay.

*"Sometimes nurses make us wait at a health facility and some ask us for money before working on us. After giving birth, we are asked to buy detergent, and they ask us to add 10,000/= for health workers. Some nurses say, 'Maybe this one has no money,' and they may not attend to you."*

*~ Young mothers, Kasese district*

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<sup>71</sup> USAID, "USAID's Malaria Action Program for Districts: Gender Analysis Report."

<sup>72</sup> Ibid.

<sup>73</sup> Ibid.

<sup>74</sup> N. M. Nour, "Health Consequences of Child Marriage in Africa," *Emerging Infectious Diseases* 12, no. 11 (2006).

<sup>75</sup> Uganda Bureau of Statistics (UBOS) and ICF, "Uganda Demographic and Health Survey 2016: Key Indicators Report."

#### 4.1.2 Improving access to and use of long-lasting insecticide treated nets

The Government of Uganda's policy is to achieve universal coverage<sup>76</sup> with LLINs<sup>77</sup> for the whole population.<sup>78</sup> The main distribution channels are mass distribution campaigns, and antenatal care and routine immunization programs that target pregnant women and children under five years of age. The latest mass distribution campaign was launched in January 2017. As of 2016, 78.4 percent of households have at least one ITN, and 51.1 percent of households have at least one ITN for every two persons.<sup>79</sup>

Data on youth access to, and use of, ITNs are limited beyond what is collected as part of the Demographic and Health Survey (DHS) Program, which is focused primarily on women of reproductive age (15-49 years) and children under five. The data that are available largely relate to levels of knowledge and awareness rather than access and use of ITNs. For example, according to the UMIS (2014-2015), the percentage of adolescent girls (15-19 years) who are aware that sleeping under a mosquito net can protect against malaria is high (93.4 percent)<sup>80</sup> (Table 4),<sup>81</sup> but ITN use by adolescent girls does not necessarily reflect this high level of knowledge, illustrating that knowledge alone is insufficient to influence behavior. The same report details that individuals between the ages of 5 and 34 years are significantly less likely to sleep under an ITN than all other age groups.<sup>82</sup> The Government of Uganda's policy of universal coverage of ITNs aims to improve these rates, but this study's findings suggest that more specific strategies are needed to improve access and use for youth.

**Table 4. Knowledge of ways to avoid malaria among women 15-49 years<sup>83</sup>**

<b>Age (in years)</b>	<b>Percentage who say there are ways to avoid getting malaria</b>	<b>Percentage who report sleeping under a mosquito net or ITN as a specific way to avoid getting malaria<sup>84</sup></b>
<b>15-19</b>	<b>95.1</b>	<b>93.4</b>
20-24	94.6	96.5
25-29	95.6	95.1
30-34	94.6	94.7
35-39	95.2	92.4
40-44	94.8	91.7

<sup>76</sup> Universal coverage is defined as one net for every two persons.

<sup>77</sup> Long-last insecticide treated nets (LLINs) are a type of insecticide treated bed net (ITN). For the purposes of this report, we use the term ITN to encompass LLINs and ITNs.

<sup>78</sup> National Malaria Control Programme (NMCP), "Uganda Malaria Reduction Strategic Plan 2014-2020."

<sup>79</sup> Most recent data available is Uganda Bureau of Statistics (UBOS) and ICF, "Uganda Demographic and Health Survey 2016: Key Indicators Report."

<sup>80</sup> Similar data are not available for boys, nor for younger age groups.

<sup>81</sup> Uganda Bureau of Statistics and ICF International, "Uganda Malaria Indicator Survey 2014-15."

<sup>82</sup> Ibid.

<sup>83</sup> Ibid.

<sup>84</sup> Among women aged 15-49 years who say there are ways to avoid getting malaria.

### *Lack of prioritization for limited numbers of ITNs*

Study respondents reported that youth are not prioritized for ITN use in the household because the priority is placed on protecting pregnant women and children under five years of age. Ministry of Health policies prioritize these two populations for malaria prevention, diagnosis and treatment given their greater susceptibility to infection and greater risk of serious health consequences. Hence, the majority of malaria awareness-raising efforts to date have emphasized this point. Study respondents shared their views that younger children benefit more from government ITN programs than youth.

*"It is good for young ones with the government program now, but it is a big problem for youths. It is a big problem [for them] to get nets."*

*~ Parents of youth, Koboko district*

Respondents further reported that youth are less likely to be allocated an ITN when the household has insufficient numbers, which was often the case.

*"Parents are responsible for getting nets except for child- or youth-headed homes. In a home with limited nets, youth will tend to be neglected."*

*~ Sub-county officials, Arua district*

Sharing ITNs among siblings is common, according to youth respondents. Female youth who were interviewed reported sharing with their sisters, mothers or younger male siblings. Similarly, male youth reported sharing nets with their brothers. Young mothers reported sharing with their husbands, if married, and their children. Youth explained that sharing is necessary because there are not enough nets or beds for all household members, requiring people to share. In some cases, multiple children can sleep under one net.

*"VHTs<sup>85</sup> give nets for households and for us we sleep in groups and bed nets are not enough. They normally give like two nets for a household. They give one to all of us (youth) and then take one for dad and mum and baby."*

*~ Adolescent girls, out-of-school, Koboko district*

*"Even in villages, children can sleep four or five in one mosquito net."*

*~ Adolescent girls, in-school, Kasese district*

*"Yes, all of us sleep under bed nets. Not everyone has their own net. I share with my brother."*

*~ Adolescent boy, in-school, Kasese district*

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<sup>85</sup> Village health teams (VHTs) are volunteer community health extension workers who are given basic training on major health programs so that they can in turn mobilise and sensitize communities to actively participate in utilizing the available health services.

Literature shows that co-sleeping<sup>86</sup> among adolescents in sub-Saharan Africa is common. A study of bed-net use in Central Kenya found that large, rectangular nets which could cover more people were preferred by survey participants because co-sleeping is common.<sup>87</sup> A 2014 study on intra-household allocation of bed nets in Uganda found that households prioritized pregnant women and infants, as they were the most susceptible to malaria, and that they were less concerned about older children, stating, "They are also young but can resist malaria, unlike the young one who is very vulnerable to malaria."<sup>88</sup> In the 17 households interviewed, children between the ages of 5 and 14 were the population with the smallest percent of net usage.<sup>89</sup>

### *Youth resistance to ITN use*

Approximately half of the parents interviewed said that they encourage all family members to use ITNs. However, parents reported difficulties in convincing adolescents to sleep under an ITN.

*"Some who have children ensure they always [use a] net. Adolescents sleep in their own way without a net."*

*~ Parents of youth, Arua district*

Teachers reported facing similar problems when trying to promote ITN use in schools. They reported children refusing to use nets, or failing to bring them to school, as required by school policy.

*"We spray dormitories and encourage the use of bed nets. Though it is mandatory to come with a net, some fail to buy, others keep them, and others claim it makes them hot."*

*~ Teachers, Mukono district*

*"The issue of bed net use is very hard. You can talk about them but ensuring that [youth] access them is not possible."*

*~ Teachers, Buikwe district*

The challenges faced by parents and teachers in convincing youth to use ITNs may be due to adolescents' increased tolerance for risk-taking,<sup>90</sup> but further study is needed. Rational decision-making only begins to develop in mid to late adolescence (15-17 years), making it difficult for youth to consider long-term implications of immediate actions.<sup>91</sup>

### *Pregnant adolescents' access to and use of ITNs*

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<sup>86</sup> Co-sleeping refers to either sleeping in the same bed as another, or in the same room.

<sup>87</sup> P. N. Ng'ang'a et al., "Bed Net Use and Associated Factors in a Rice Farming Community in Central Kenya," *Malaria Journal* 8 (2009).

<sup>88</sup> Y. Lam et al., "Decision-Making on Intra-Household Allocation of Bed Nets in Uganda: Do Households Prioritize the Most Vulnerable Members?," *Ibid.* 13.

<sup>89</sup> *Ibid.*

<sup>90</sup> R. R. Kipping et al., "Multiple Risk Behaviour in Adolescence," *Journal of Public Health* 34 (2012).

<sup>91</sup> Global Early Adolescent Study. Publication forthcoming (Oct. 2017) in the *Journal of Adolescent Health*.

Pregnant adolescents were reported to have better access to ITNs through antenatal care compared to boys who have fewer interactions with the health system. The requirement at all health facilities (as per government policy) is to provide ITNs to all pregnant women and adolescents as part of antenatal care.

*"Since malaria mostly affects pregnant women and under five-year-olds, these have been the targeted categories. As soon as any pregnant woman visits a health facility for the first time, she is given IPTp and a bed net."*

*~ District health team, Buikwe district*

However, access to ITNs by pregnant women and adolescents is often limited by supply shortages at health facilities. At some health facilities, such as in Koboko District, it was noted that health workers in the antenatal care units only give ITNs to women and girls who are able to attend at least three ANC visits.

*"Pregnant adolescents are given IPTp, and for those who finish their third trimester, we give them a bed net."*

*~ Health workers, Koboko district<sup>92</sup>*

While this is done as a way of encouraging antenatal care uptake, those who cannot attend at least three times are denied ITNs, denying them a critical malaria prevention tool. There are many reasons that women and adolescent girls cannot regularly attend ANC that are out of their control, and instituting attendance requirements to receive ITNs is disempowering and increases the risk of infection as protection is only provided late in the pregnancy.

Access to ITNs may be higher for pregnant adolescents, but this does not necessarily translate into increased use. About half of young mothers who were interviewed reported having access to ITNs, though less than half reported using them. Young mothers also reported regularly sharing ITNs with their children, husband or sister. One third of young mothers said they do not have enough ITNs for all family members.

Previous research has found that the views of adults and youth may differ on youth ITN use preferences. The project's gender analysis found that while parents and other adults view youth as "difficult" and "lazy" when it comes to protecting themselves from malaria, the majority of male and female adolescents who were interviewed said they would sleep under an ITN if one was available.<sup>93</sup> In Malawi, a study of school-aged children (5-15 years) found that they were significantly less likely than the rest of the population to use a net when households have an insufficient number to meet universal coverage criteria, and that children aged 11-15 years were

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<sup>92</sup> MAPD has taken these barriers into consideration in the design of work plans, and these changes are reflected in ongoing activities. For example, in Year 3, MAPD plans to provide targeted technical assistance for the provision of youth-friendly services and outreach in health facilities.

<sup>93</sup> USAID, "Usaid's Malaria Action Program for Districts: Gender Analysis Report."

significantly less like to use nets than children aged 5-10 years.<sup>94</sup> In addition, youth may be perceived by adults to be more capable of protecting themselves, and therefore be expected to obtain and maintain their own ITNs without adult support.<sup>95</sup> These findings point to the nuances behind ITN access and use by youth that need to be further explored given the paucity of studies conducted on the subject to date.

There is an urgent need for more research into youth attitudes and practices regarding ITN access and use, especially for boys. The data available through the DHS suggest that individuals aged 5-34 years are less likely to sleep under an ITN, with only 29 percent of youth between the ages of 5-14 and 35 percent of youth aged 15-34 sleeping under an ITN. More research is needed to understand why. Existing data show that a high proportion of girls aged 15-19 years are aware of ITN use as an effective malaria prevention method, but this study suggests that this high level of awareness does not translate into a similarly high prevalence of ITN use. Adolescent girls may have greater access to ITNs than boys through ANC, but efforts are needed to ensure that adolescent girls receive ITNs at the beginning of antenatal care, and not as a reward for regular ANC attendance. Adolescent girls may also benefit from current SBCC campaigns that prioritize women and children for ITN use, especially when supplies are limited. With the switch to a policy of universal coverage, SBCC campaigns need to adapt their messaging to promote ITN use for all household members.

#### 4.1.3 Malaria knowledge and education

Globally, data about youth malaria knowledge and education are sparse.<sup>96</sup> Data from the 2015 Malaria Indicator Survey show that a common source of malaria messaging in Uganda is mass media. Among women aged 15-19 years who had seen or heard any malaria messaging in the six months preceding the survey, 82.5 percent had done so through radio, 18.8 percent through television, and 20.5 percent through posters or billboards.<sup>97</sup> Community health workers and community events were a source for 29.4 percent and 14.9 percent, respectively. The rates were similar across all age groups (Table 5). Data are not available for men and boys, representing a significant information gap. Previous studies point to schools as a valuable source of knowledge on malaria prevention and treatment for school-aged children<sup>98</sup>. The Uganda Malaria Reduction Strategic Plan identifies the strategic engagement of school pupils to champion malaria intervention messages and act as change agents at home and among peers.<sup>99</sup>

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<sup>94</sup> A. G. Buchwald et al., "Bed Net Use among School-Aged Children after a Universal Bed Net Campaign in Malawi," *Malaria Journal* 15 (2016).

<sup>95</sup> Y. Lam et al., "Decision-Making on Intra-Household Allocation of Bed Nets in Uganda: Do Households Prioritize the Most Vulnerable Members?," *Ibid.* 13.

<sup>96</sup> J. Nankabirwa et al., "Malaria in School-Age Children in Africa: An Increasingly Important Challenge," *Tropical Medicine & International Health* 19, no. 11 (2014).

<sup>97</sup> Uganda Bureau of Statistics and ICF International, "Uganda Malaria Indicator Survey 2014-15."

<sup>98</sup> Nankabirwa et al., "Malaria in School-Age Children in Africa: An Increasingly Important Challenge."

<sup>99</sup> National Malaria Control Programme (NMCP), "Uganda Malaria Reduction Strategic Plan 2014-2020."

**Table 5. Exposure to malaria messages, women aged 15-49<sup>100</sup>**

Age (in years)	Percentage who have seen or heard a message about malaria in the past 6 months	Number of women	Radio	Television	Poster or billboard	Community health worker	Community event	Any other source
15-19	60.1	1,228	82.5	18.8	20.5	29.4	14.9	29.5
20-24	65.1	1,132	83.5	21.9	26.5	32.4	15.4	22.6
25-29	66.5	957	77.5	20.6	21.1	34.6	15.7	26.5
30-34	64.4	741	81.0	17.2	20.3	35.6	19.0	24.6
35-39	63.4	547	82.0	19.6	20.4	37.0	22.6	20.4
40-44	66.4	425	85.0	13.4	16.8	36.1	16.8	21.8
45-49	60.7	292	87.2	9.5	15.8	40.2	18.9	20.5

*Levels of knowledge and awareness*

This study found that youth have a good knowledge level of causes and prevention methods of malaria, though common misconceptions within the age group do exist. Most youth respondents identified mosquitos, lack of ITN use, and the presence of stagnant water and overgrown bushes as causes of malaria. However, incorrect causes related to water and sanitation and personal hygiene practices, such as drinking unclean water, leaving food uncovered, and not handwashing, were also often cited as causes of malaria. The most common prevention methods mentioned were: sleeping under an ITN, draining stagnant water, clearing bushes, removing broken bottles, drinking boiled water, maintaining daily personal hygiene, washing hands after using the latrine, treating illness early, spraying insecticide, not eating contaminated food, washing dishes/utensils, cleaning latrines, and taking medications. This shows there is some confusion between water and sanitation concerns and malaria prevention methods. A few respondents mentioned closing doors and windows early, and burning mosquito coils as useful preventive measures. In Kasese district, girls in- and out-of-school identified playing in the rain, exposure to wind, and eating raw mangoes as ways of contracting malaria. These myths may exist because mango season corresponds to higher levels of precipitation, and a higher incidence of malaria.

*“Mosquitoes bite if you don’t sleep in a bed net and may transmit malaria. Not boiled water causes malaria. Staying outside for long hours when there is a cold wind can cause malaria. Playing in stagnant water and the wind can bring the flu leading to malaria. If you go to the garden and the rain falls on you a lot, you may get [malaria]. Eating raw mangoes causes malaria.”*

*~ Adolescent girls, out-of-school, Kasese district*

<sup>100</sup> Uganda Bureau of Statistics and ICF International, "Uganda Malaria Indicator Survey 2014-15."

Behavior change communication messaging should place an emphasis on dispelling myths related to malaria prevention, such as mangoes and rain as causes of malaria, and to address confusion between personal hygiene practices and malaria prevention methods.<sup>101</sup>

### *Information sources*

The most common sources of information on malaria identified by youth were school or teachers (78 percent of FGDs), parents (63 percent of FGDs), and health workers or health facilities (63 percent of FGDs) (Table 6). When participants are sub-divided into in-school youth, out-of-school youth, and young mothers, teachers or schools remain the most common source of knowledge for in- and out-of-school youth, while health workers / health facilities are the most common for young mothers (80 percent of young mother FGDs). Mass media, including radio, television, posters and advertisements were the fourth highest cited information source (28 percent of FGDs).

*“Those working in health centers give us information. At times, they do some sensitization and mobilization and provide information. We also get information from VHTs, from adverts on radios, from posters about malaria, from chairpersons of local councils, and in school during studies.”*

*~ Adolescent girls, out-of-school, Koboko district*

Out-of-school youth identified school as their most common source of malaria information despite no longer being in regular attendance. Thus, malaria education before adolescence (and before children leave school) may play a critical role in malaria education and awareness-raising. Further research is needed to explore the apparent contradiction between pregnant adolescents' reluctance to attend health facilities for antenatal care, and the prominent role health facilities play as information sources for young mothers. A possible explanation is that young mothers eventually increase their interactions with the health system to seek care for their children once they are born. Young mothers were the only group to not identify VHTs as a source of knowledge on malaria, despite the VHT mandate to provide integrated malaria services for children under five. Most young mother focus groups (80 percent) identified health facilities, antenatal care, and hospitals as their main sources of information. Young mothers in Kasese district reported that they have people in their communities that monitor personal hygiene, which may be a reference to VHTs. It may be that VHTs are present in communities, but are not providing malaria education as part of their services. Young mothers in Buikwe district said they do not have VHTs in their communities.

*“[You can prevent malaria by] sleeping under a bed net, taking boiled water, draining stagnant water, covering food, clearing bushes around homes. We learnt them from schools, by World Vision workers, our parents, and at health facilities they teach us about these things. We don't see VHTs in communities and we don't know them.”*

*~ Young mothers, Buikwe district*

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<sup>101</sup> This finding has influenced MAPD's gender and youth work, specifically the development of gender and youth talking points to dispel malaria-related myths among girls and boys as well as among men and women.

Given the challenges to health facility attendance described earlier in the section regarding the prevention of malaria in pregnancy, more effort is needed to provide malaria education and awareness to young mothers through VHTs and other channels such as radio and community outreach.

**Table 6. Number and percentage of focus group discussions that mentioned a specific source of knowledge**

Source	In-school youth (N = 24) No. of groups (%)	Out-of-school youth (N = 11) No. of groups (%)	Young mothers (N = 5) No. of groups (%)	Total (N = 40) No. of groups (%)
School/teachers	<b>19 (79%)</b>	<b>10 (91%)</b>	2 (40%)	<b>31 (78%)</b>
Parents	18 (75%)	5 (45%)	2 (40%)	25 (63%)
Health workers/health center/hospital/clinic	15 (63%)	6 (55%)	<b>4 (80%)</b>	25 (63%)
Radio/TV/poster	4 (17%)	7 (64%)	0	11 (28%)
VHTs	4 (17%)	3 (27%)	0	7 (18%)
Siblings	4 (17%)	2 (18%)	0	6 (15%)
Health workers who visit the school	2 (8%)	2 (18%)	0	4 (10%)
Local leaders	3 (13%)	1 (9%)	0	4 (10%)
ITN mass distribution campaign	1 (4%)	0	1 (20%)	2 (5%)
NGO / "visitors" to the community	1 (4%)	0	1 (20%)	2 (5%)
Community counsellor	1 (4%)	1 (9%)	0	2 (5%)
Friends	1 (4%)	0	0	1 (3%)
Drug shop	1 (4%)	0	0	1 (3%)
Other relative	1 (4%)	0	0	1 (3%)
Neighbor	0	1 (9%)	0	1 (3%)
Youth club	0	1 (9%)	0	1 (3%)

In contrast, mass media was the most often cited preferred source of information by youth. Youth gave the examples of posters with friendly pictures, road side advertisements, and radio and televisions spots as preferred mass media sources. Youth also identified health facilities, their parents, and peers.

*"The best way to reach youth with information is to sensitize through radio, and through posters when we have enough time to stop and look at them. They should have pictures to attract our attention."*

*~ Adolescent girls, out-of-school, Koboko district*

#### *In-school malaria education*

Uganda's current education system structure is a four-tier model, and it has been in existence since 1963. It consists of seven years of primary education, followed by a four-year cycle of lower secondary and a two-year cycle of upper secondary, after which there are two to five years of tertiary education. There is also a two-year pre-primary stage of education attended by 3-5 year-olds before joining primary school. Malaria education is taught in primary school, but not in

secondary school. According to the Ministry of Education and Sports, 60 percent of boys and 63 percent of girls complete primary school in Uganda.<sup>102</sup>

**Table 7. Sex-disaggregated primary school survival rate for Ugandan students<sup>103</sup>**

Level of education	Survival rate (%) - Boys	Survival rate (%) - Girls
Up to grade 5	59.9	63.3
Up to grade 7	31.7	32.3
Completion of grade 7	59.7	63.4

Identified sources of information on malaria in schools included science teachers, school clubs, visiting health workers, the school nurse, and the school curriculum.

*"Clubs teach us how to talk without fear, and how to give good guidance. We discuss about malaria in the anti-AIDS club and the debate club."*

*~ Adolescent girls, in-school, Buikwe district<sup>104</sup>*

The health sector provides some support to schools for the provision of malaria education. Health workers reported providing malaria prevention information and other support at schools, but the frequency is ad-hoc and not consistent across districts. Only 10 percent of adolescent focus groups mentioned health worker visits to schools as a source of malaria information. District health teams reported they do not oversee health services provided by health workers in schools, nor any other in-school health-related education activities.

*"At times, we do school health programs when we are informed by a school. For those out of school, we usually provide them with condoms. VHTs inform us on what youth want."*

*~ Health workers, Mukono district*

*"All in all, health education in schools is very weak and barely supported. We don't coordinate with schools, but maybe some schools partner with [nearby] medical facilities."*

*~ District Health Team, Buikwe district*

*"There is no connection between the school, the [District Health Officer's] office and the health workers in the health centers."*

*~ District Health Team, Kasese district<sup>105</sup>*

<sup>102</sup> Ministry of Education and Sports, "Education and Sports Sector Fact Sheet 2002-2016," <http://www.education.go.ug/files/downloads/FACT%20%20%20SHEET%202016.pdf>.

<sup>103</sup> Ibid.

<sup>104</sup> MAPD is supporting and enhancing the existing clubs, including school-based clubs, to implement malaria-related activities, specifically those under school-based net distribution and accompanying SBCC activities.

<sup>105</sup> This finding has influenced MAPD's recommendations, including #7.

Strengthening collaboration between national and district health and education authorities offers an opportunity to reach youth with malaria prevention messaging. Greater involvement by health authorities in the provision of health education activities in schools will help to ensure accurate and consistent messaging on malaria prevention, as well as help to strengthen the relationship between youth and the health system by providing opportunities for youth and health workers to interact. This may encourage youth attendance at health facilities if they have already established trusting relationships with health workers in their communities.

Other studies in Tanzania and Ethiopia have similarly found that school children's knowledge of the causes of malaria is high,<sup>106,107</sup> even though comprehensive malaria messaging is often not included in school texts.<sup>108</sup> The most recent UMIS (2014-2015) found that the most common sources of malaria messages for women aged 15-19 years were radio (82.5 percent) followed by community health workers (29.4 percent), and posters (20.5 percent). Similarly, a study of school children in Tanzania identified mass media, such as radio and television, as primary malaria information sources.<sup>109</sup> Ugandan youth in this study articulated a preference for messaging via mass media, but a majority did not identify a relevant mass media message as a current information source. 55 percent of Ugandan households report radio as their main source of information (not malaria-specific), followed by word of mouth (20 percent), according to the 2014 National Population and Housing Census.<sup>110</sup> This may indicate an absence of malaria messaging via radio, and a potential opportunity to scale up malaria prevention and treatment messaging via radio, family members and peers in Ugandan youth.

## 4.2 Malaria diagnosis and treatment

### 4.2.1 Treatment-seeking behavior

#### *Self-medicating behaviors*

Youth respondents all expressed a clear understanding of the seriousness of malaria infection, and the importance of obtaining treatment in a timely manner. However, their decision to seek treatment at a health facility is influenced by various factors, notwithstanding parental guidance/permission. Youth's expectations regarding the availability and affordability of anti-malarial treatment at public health facilities affects their decision to obtain health care. Most youth reported drug stock-outs as a significant barrier to health care. Consequently, the behavioral pattern that was consistently expressed by male and female youth was to first self-medicate with

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<sup>106</sup> F. Edson and E. J. Kayombo, "Knowledge on Malaria Transmission and Its Prevention among Schoolchildren in Kyela District, South-Western Tanzania," *Tanzania Health Research Bulletin* 9, no. 3 (2007).

<sup>107</sup> Y Debelo, Z Birhanu, and Y Kebede, "Malaria Related Knowledge and Child to Parent Communication Regarding Prevention and Control of Malaria among Primary School Students in Jimma Zone, South West Ethiopia," *American Journal of Health Research* 2, no. 5 (2014).

<sup>108</sup> D. Nonaka et al., "Content Analysis of Primary and Secondary School Textbooks Regarding Malaria Control: A Multi-Country Study," *Plos One* 7, no. 5 (2012).

<sup>109</sup> D Sumari et al., "Knowledge, Attitudes and Practices on Malaria in Relation to Its Transmission among Primary School Children in Bagamoyo District, Tanzania," *Malaria World Journal* 7, no. 2 (2016).

<sup>110</sup> Uganda Bureau of Statistics (UBOS), "National Population and Housing Census 2014."

medications available at home, such as Panadol,<sup>111</sup> Coartem,<sup>112</sup> and herbal medicines. If their condition does not improve, they then attend a health facility or hospital.

*“Some parents give drugs kept in the house first. Some give us herbs and they are helpful.”*

*~ Adolescent girls, in-school, Buikwe district*

*“Like at our home, when any of us get sick, we first take medicine like Coartem that is in the house. At times things are brought from the nearby clinic or that would have remained from someone’s previous treatment.”*

*~ Adolescent girl, in-school, Bundibugyo district<sup>113</sup>*

*“If my parents were not at home and I felt sick with malaria I would go to a drug store. I would borrow money to pay for drugs.”*

*~ Adolescent boy, in-school, Kasese district*

The reasons behind this approach are rooted in poverty and the poor quality of health services in public health facilities. Youth repeatedly reported being forced to purchase medications at drug shops or private clinics because public health facilities had no supplies. Many also reported long queues for services, or health workers prioritizing patients who can pay for services despite government policy that stipulates the free provision of health care in public facilities. Thus, to youth, it makes more sense to first attempt self-treatment or to buy medication from local drug shops or herbalists before making the effort to go to a health facility, which often requires additional time and resources for transport, where they may not receive the treatment they need.

*“You may not be able to afford the bills at a health facility, and [health workers] will not attend to you. Public health facilities may test your blood, check your pressure, give you Panadol, and [recommend] other drugs to buy, yet [you have] no money.”*

*~ Adolescent girls, out-of-school, Kasese district*

*“No, we are not able to get malaria prevention and treatment services in our community. Many times, we go to the health center and we are told there are no drugs. So, we use herbs.”*

*~ Adolescent boys, out-of-school, Arua district*

*“VHTs have to advise youth when drugs are to be bought. However, youth lack the money to buy them.”*

*~ Local council members and VHTs, Koboko district*

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<sup>111</sup> Panadol, a brand name for paracetamol (also known as acetaminophen), is a medication used to treat pain and fever. It is typically used for mild to moderate pain.

<sup>112</sup> Coartem is a prescription medication used to treat acute uncomplicated malaria infections due to *Plasmodium falciparum* in adults and children who weigh at least 11 pounds (5 kg).

<sup>113</sup> MAPD is hoping to address self-medicating behaviors through SBCC interventions; this is reflected in recommendations #6, 8, 10.

Youth also reported concerns about the services they receive in the private sector, including receiving expired medications, incorrect prescriptions, and insufficient doses. Youth attributed the receipt of expired or incorrect medications to poor training of health workers in private clinics. They reported that the receipt of insufficient doses is due to private clinics only providing enough medication based on a patient's ability to pay instead of their medical need.

*"Drugs are expired so they can't cure malaria, especially in private drug shops."*

*~ Adolescent boys, out-of-school, Buikwe district*

*"You can get medicine expired already... You may fail to find drugs or there is a lack of enough medicine. You may get medicine which you are not supposed to take due to poorly skilled nurses in [private] clinics and lack of blood testing."*

*~ Adolescent girls, in-school, Kasese district*

### *Traditional medicines and drug abuse*

The use of traditional medicines to treat malaria symptoms was repeatedly raised by youth. Female youth were more likely to say they would use herbal treatments before attending a health facility. Out of the 22 female youth focus groups that were held, 16 FGDs (73 percent) mentioned herbal treatments as a first step. In comparison, only seven of 17 male FGDs (41 percent) identified herbs as a form of treatment. A systematic review of the use of traditional medicines among African women found traditional medicines are widely used by African women for maternal and reproductive health issues due to lack of access to the mainstream maternity care.<sup>114</sup> A similar lack of access to malaria care may explain women's and girls' reliance on traditional medicine to treat malaria as well. Similarly, a study of adolescent health-seeking during pregnancy and early motherhood in Uganda found that adolescent girls mostly utilize the traditional sector for health care because it is most accessible in terms of distance, cost and cultural context.<sup>115</sup>

On the other hand, boys reported the use of illicit drugs to treat malaria. Out-of-school boys in Arua district identified using mairungi<sup>116</sup> as helpful in relieving malaria symptoms. According to youth respondents, the drug is readily accessible in the district, compared to anti-malarial treatments.

*"Many times, we go to the health center and we are told there are not drugs. So, we use herbs. When you use mairungi, malaria goes away. When you are feeling cold and you take mairungi, the fever goes away and when you stop, malaria comes back so you have to take more. Mairungi will make malaria hide but it will come back."*

*~ Adolescent boys, out-of-school, Arua district*

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<sup>114</sup> Z. Shewamene, T. Dune, and C. A. Smith, "The Use of Traditional Medicine in Maternity Care among African Women in Africa and the Diaspora: A Systematic Review," *Bmc Complementary and Alternative Medicine* 17 (2017).

<sup>115</sup> L. Atuyambe et al., "Seeking Safety and Empathy: Adolescent Health Seeking Behavior During Pregnancy and Early Motherhood in Central Uganda," *Journal of Adolescence* 32, no. 4 (2009).

<sup>116</sup> Mairungi, or khat, is a flowering plant native to the Horn of Africa and the Arabian Peninsula. It is used as a stimulant and it is a controlled substance in many countries. The World Health Organization (WHO) has classified it as a drug of abuse.

Health workers in Arua and Koboko districts both reported drug abuse as a serious issue facing youth, especially boys, with implications for malaria treatment. They reported that youth will use illicit drugs to self-medicate either due to their addiction which causes them to buy illicit drugs instead of seeking treatment, or because it is the only option available when anti-malarial drugs are out of stock.

*“Drug addiction [is a problem] because all the money [youth] get they use to buy drugs instead of buying drugs for malaria.”*

*~ Local council members and VHTs, Arua district*

*“Youth are more into drug abuse... They even say that their drugs will cure them.”*

*~ Health workers, Koboko district*

The reliance on self-treatment by male youth may be explained by gender norms that equate illness with personal weakness in men and boys. Youth, health workers and local leaders reported that male youth only visit a health facility for treatment as a last resort because to be seen at a health facility is believed to be a sign of weakness. Similar findings concerning poor treatment-seeking among men and boys were reported in the project's gender analysis report.<sup>117</sup> Cultural definitions of masculinity delay men and boys from seeking health care because they fear being perceived as weak.

*“When you get sick, it is assumed that it is your responsibility as a male. As a result, boys feel they have to show they are strong, translating to poor health-seeking behavior.”*

*~ Local official, Arua district*

Adults reported that youth do not complete treatment regimens because they do not like to take medications, but youth rarely reported this to be an issue. The reasons for this discrepancy are unclear and further research is needed to determine whether the problem is due to a dislike of medications or an inability to complete a treatment regimen because of insufficient drug supplies, an inability to afford the necessary quantity of medication, or a desire to save unused medications for future bouts of illness.

*“As far as Coartem is concerned, you know that children don't like taking drugs. There is poor adherence sometimes, and parents send children back to school without taking them back to health facilities. Some children just refuse drugs; some take herbs.”*

*~ Teachers, Mukono district*

*“We health workers are supposed to provide full doses, but youth do not complete them. When they come to a health facility, they may say that they have [already] swallowed the medicine, or they got lost last time, when they return for treatment.”*

*~ Health workers, Koboko district*

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<sup>117</sup> USAID, "Usaid's Malaria Action Program for Districts: Gender Analysis Report."

### *Parental support*

Youth reported that they commonly sought and received financial and other forms of support from their parents, neighbors and relatives when they are ill. Further, they reported that they can borrow money from neighbors or relatives if their parents are away, and that they can also rely on friends and neighbors to help them get to a hospital when they are sick. Thus, there is evidence of a support network that is available to youth.

*"When my parents are not at home, I can call for help from neighbors to take me for treatment."*

*~ Adolescent boys, in-school, Bundibugyo district*

*"I go to the neighbor to ask her to lend me some money and I buy some drugs from the clinic and when [my mother] comes back, we can refund the money."*

*~Adolescent girl, in-school, Kasese district*

Most youth reported that boys and girls receive the same level of care at home, though a minority did report that they believed girls receive preferential treatment. Two reasons for this were given. The first was because of the unfounded cultural perception that girls are biologically weaker than boys and in more need of care. The second was because girls are perceived to be more valuable to the household because they assist with chores, care for the sick, etc. Parents of adolescents reported they do not treat boys and girls differently when it comes to health care. The extent to which care and treatment are provided along gender lines requires further study.

*"Yes, boys and girls are cared for differently because they are not the same sex. Girls get more care because girls are not as strong as boys."*

*~ Adolescent boys, in-school, Bundibugyo district*

*"My brother is stronger than me so he is more likely not to receive enough [care], but girls are weak. They would get enough care."*

*~ Adolescent girl, in-school, Arua district*

*"I am given first priority because I can easily help my parents [compared to] my brother, especially when it comes to house chores."*

*~ Adolescent girl, in-school, Kasese district*

These results demonstrate the challenges of instilling health-promoting behaviors in youth, given they are neither "old children" nor "young adults."<sup>118</sup> Youth propensity for risk-taking, their desire to assert their independence from adults, and their inability to consider the long-term consequences of their actions all point to the importance of designing malaria prevention programs that emphasis shorter-term planning and the use of peer role models to encourage positive behavior change. Equally important is the adults' (including parents and service providers)

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<sup>118</sup> "Global Accelerated Action for the Health of Adolescents (Aa-Ha!): Guidance to Support Country Implementation," (Geneva: World Health Organization, 2017).

understanding of youth, their practices, and the reasons behind these practices so as to inform their strategies to meaningfully engage youth.

#### 4.2.2 Youth-friendly services

According to the Government of Uganda's Adolescent Health Policy Guidelines and Service Standards,<sup>119</sup> adolescent-friendly services shall be:

1. affordable, accessible, available, appropriate, attractive and welcoming to young people;
2. should observe the needs and rights of the young people; and
3. offered in facilities which observe confidentiality and infection prevention.

The guidelines list the components of adolescent-friendly health services as including:

- Clinical care for sexual and gender-based violence
- Prenatal care and maternity care for pregnant adolescents
- Human papilloma virus (HPV) immunization
- HIV counseling and testing
- Breast examination and information on cervical cancer
- Information and counselling on health, especially growth and development
- Information on adolescents' rights and responsibilities
- Referral and follow-up

The guidelines do not explicitly mention malaria as a component of adolescent-friendly services.

#### *Service availability*

Most district health teams and health centers reported that they provide youth-friendly services at health facilities, but not for malaria specifically. Identified services include immunization for meningitis, HPV, and hepatitis B; HIV counselling and testing; sexual and reproductive health (SRH) services; and prevention and treatment of sexually-transmitted infections (STIs). Malaria services were reported to be targeted at the general population, with an emphasis on pregnant women and children under five due to their increased vulnerability. However, where youth-friendly services are available, youth can access care for malaria, but the priority is placed on SRH services. This is likely due to both the demand by youth for SRH services, and a focus on addressing the sexual and reproductive health and rights of adolescents in the Adolescent Health Policy Guidelines and Service Standards.

*"For the youth, there are no [malaria services] unless they are pregnant. But we target them with SRH, youth-friendly services such as youth clubs at the health facility level, and we equip them with skills."*

*~ District health team, Buikwe district*

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<sup>119</sup> Ministry of Health (Uganda), "Adolescent Health Policy Guidelines and Service Standards," (Kampala, Uganda: Ministry of Health, 2012).

*"Where there are [youth-]friendly services here, you find [youth] going. Health workers are also not trained in segregation of services; they are trained to offer general services."*

*~ District health team, Kasese district*

Respondents reported that youth-friendly corners, designed to protect patient privacy, largely target female youth whom they perceive to be more hesitant to use health services without the provision of a safe space separate from men and boys. These findings suggest that boys' desire for privacy, given their tendency to delay health care to avoid being perceived as weak, may be overlooked.

*"Youth-friendly corners mainly focus on girls who may not easily open up to men. This has been a gap, but trainings are being done for service providers to provide segregated services for male and female youth."*

*~ District health team, Bundibugyo district*

### *Resource challenges*

The greatest barrier to implementing youth-friendly services in public health facilities identified by district health teams and health workers was a lack of resources, including the number and training of personnel, and infrastructure. Most health worker respondents recognized the need for youth corners to protect youth privacy, but they reported a lack of resources for their effective establishment and staffing. It was very common for volunteers to oversee youth programs, and for district health teams and health workers to report a lack of resources to implement activities that will attract youth, such as television, games and sports activities.

*"Youth are accessing services... We are thinking of creating youth-friendly services in facilities so that they can access easily services, though this calls for more resources in terms of infrastructure, and personnel wages and skills."*

*~ District health team, Koboko district*

*"Youth need entertainment, e.g. ball games, Scrabble, Ludo, which we don't have. Sometimes they watch TV in the ANC clinic."*

*~ Health workers, Arua district*

District health teams frequently reported that they did once have successful youth-friendly programs that were externally-funded by donors and non-governmental organizations, but the programs were forced to close once external funding ended, indicating that sustainability is an important consideration for future youth programming.

*"Sometime back we had a project that included youth-friendly services which was attracting more youth. When the project closed, youth [stopped coming]."*

*~ District health team, Koboko district*

### *District-level youth-friendly training and capacity*

Few district health teams and health workers reported receiving training in the provision of youth-friendly services. The exceptions were Arua and Mukono districts. The district health team

in Arua district reported training health workers to provide youth-friendly services, and included exit interviews for youth who attended youth-friendly corners at health facilities to improve service provision. Health workers in Mukono district reported that two staff members had received training, but one had since been transferred to another facility. Health workers who were interviewed in Bundibugyo district expressed a desire to receive youth-friendly service training.

Some health workers expressed disparaging views of youth, such as labelling them 'lazy,' to explain their poor treatment-seeking behavior. Such views may reflect a lack of sensitivity on the part of health workers to the complexity behind youth behaviors, needs and motivations when it comes to accessing health care.

*"Cases of late coming among youth are common. Youth are the laziest people. They are degenerated in their minds. [They] always say that, 'I will make it,' and they never do it. Even during meningitis infections, they were coming late."*

*~ Health workers, Koboko district*

*"[Male youth] are impatient and may not want to go through a long procedure at a public health facility."*

*~ Health workers, Arua district*

Health workers reported that their medical training included strategies for targeting women of reproductive age and children under five, but not for youth. Health workers expressed frustration with the Ministry of Health and implementing partners, who they reported often speak about the importance of youth-friendly corners and the provision of youth-friendly services, but provide little guidance on how to implement the relevant policies. The MAPD Gender and Youth team has designed a series of activities to launch in Year 3 to address this gap. These include youth community dialogues, targeted technical assistance to health facilities, and the revitalization of a youth corner in the West Nile or Rwenzori region.

District health teams reported being aware of, but not having copies of, the revised 2016 National Youth Policy. Youth leaders who were interviewed were also unaware of the revised guidelines. Further, none of the district health teams who were interviewed referenced the Adolescent Health Policy Guidelines and Service Standards as a guidance document for their youth-related programming.

#### *NGO-led initiatives*

Most district health teams and health workers pointed to youth-friendly health services provided by NGOs in their districts, including Médecins Sans Frontières (MSF) (Kasese district), World Vision (Buikwe district), The AIDS Support Organization (TASO) (Bundibugyo and Mukono districts), and the Uganda Health Marketing Group (UHMG) (Koboko district). These services are primarily focused on SRH and HIV.

*"Young pregnant women are attended to and sent to the youth-friendly center supported by TASO. We encourage them to visit ANC; deliver [at] a facility."*

*~ Health workers, Mukono district*

*“Now [tuberculosis] is becoming rampant, so we are targeting youth in outreaches as well. We partner with MSF which provides youth-friendly services like [tuberculosis] and HIV.”*

*~ Health workers, Kasese district*

Youth also spoke favorably about the youth-friendly services provided by NGOs because of the youth activities offered and the high quality of services. They reported that even though the youth program may not focus on malaria, they can access treatment if they are sick.

*“We have a health center called [Médécins Sans Frontières] which is an NGO. They have different games for youth. They even paint our nails. Even if you are not sick they give you Albendazole.<sup>120</sup> But if you are sick, they give you free drugs. But they mainly don’t talk about malaria, but sexual reproductive health and rights. But if you go there when you have malaria they treat you.”*

*~ Adolescent girl, out-of-school, Kasese district*

#### *Youth engagement and outreach*

District health teams and health workers who were interviewed reported it was difficult to attract youth to health facilities. In addition to the lack of personnel, poor infrastructure, and entertainment facilities needed to provide youth-friendly services, the hours of operation of health facilities were identified as a challenge. Facilities were often reported to be closed on weekends or in the evenings, when it is more convenient for youth to attend.

*“Young people access services late, on certain weekends and in the evening. They prefer using technology.”*

*~District health team, Arua district*

It was rare for district health teams and health workers to report including youth in program planning or implementation. An exception was Arua district. One form of youth engagement that they have adopted is the conducting of exit interviews with youth who attend youth corners at health facilities. Youth are also engaged as peer educators.

*“The youth are engaged. Their concerns are taken into consideration even at the health facility. Though some concerns tend to be ambitious [compared to] what we can provide. Youth receive training and talks from people who are trained in youth-friendly services. We conduct exit interviews for youth who visit the health center.”*

*~ District health team, Arua district*

In Buikwe district, youth champions are engaged to encourage their peers to visit health facilities. The champions are elected by their peers and they participate in most of the youth-friendly services and programmes organized by the district, including outreach.

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<sup>120</sup> Albendazole is a medication used for the treatment of a variety of parasitic worm infestations, and is commonly used in low- and middle-income countries as part of mass deworming campaigns in children and youth.

Some health facilities described innovations they employ to engage youth, such as organizing ball games and card games, and engaging peer educators to give health talks. By attracting youth for social purposes, they can then engage them in a dialogue on health issues that are important to them. Where possible, health facilities engage youth volunteers to lead these activities. In addition, some district health officials reported working through local councils and the youth chairperson to encourage youth attendance at health facilities. Local council members and VHTs who were interviewed were often able to identify existing youth leaders and youth-focused programs that are present in their communities, though none were focused on malaria. However, the existence of youth programs in many communities presents an opportunity to engage youth and encourage their attendance at health facilities for malaria services.

*"We try to target [youth] but we don't find it easy. We try to involve local leaders to mobilize youth to come. We use VHTs and Local Council 1 members. We have started some games which attract youth to the health facility. They play here and we talk to them to not fear health services. It is staff-initiated and is led by a youth chairperson in the sub-county."*

*~ Health workers, Koboko district*

#### *Health care access in schools*

As with malaria prevention, youth in school likely have better access to malaria treatment compared to out-of-school youth. Most in-school youth who were interviewed reported the ability to see a school nurse or visit a sick bay at school where they receive care, including anti-malarial medication when it is available. If the illness is serious, youth are sent to a health facility for treatment and then home to recover.

*"At school, they check and give you treatment. In the sick bay, they treat you for two days. When you don't get cured they call your parents. If you're too sick, they take you to the health facility and your parents pay."*

*~ Adolescent girl, in-school, Mukono district*

However, shortages of drugs and qualified staff also plague the health services provided through schools. School nurses often fill multiple roles, and may not have proper medical training.

*"We get treatment services at school, but the medicine is not enough. While at school, we go to the school nurse to get medicine. She has three roles: she is a teacher, nurse and school canteen attendant at the same time."*

*~ Adolescent boys, in-school, Bundibugyo district*

District health teams reported that they do not provide oversight of the medical care that is provided by school nurses. The only links that exist between the public health system and school health services occur when schools partner with nearby health facilities, but this is dependent on the individual school or health facility to make an effort to forge a partnership. In Kasese district, the district health team reported that health facilities are responsible for supervising schools within their catchment area, but the DHT does not provide oversight.

*“Some of the schools around partner with nearby health facilities for treatment. Those with school nurses or teachers in charge of treatment are not monitored by the DHT.”*  
~ District health team, Buikwe district

Some youth reported receiving treatment quickly when they attend health facilities wearing their school uniform. District health authorities confirmed this practice.

*“At the health center, they serve old people first and attend to young people last, even when they are the first in the queue. However, when you are wearing a school uniform, they will serve you first.”*

~ In-school boys, 15-19 years, Arua district

*“Youth in uniform are prioritized, or those with a referral letter from matrons or the senior woman teacher. We plan to have age-segregated consultation rooms to allow young ones to open up.”*

~ District health team, Kasese district

Other research confirms the finding that Uganda has a strong youth-friendly policy framework, but that implementation and dissemination remain the primary challenges.<sup>121</sup> Research by the International Youth Foundation identified barriers to youth-friendly services for Ugandan youth, including: requiring partner approval for services for married youth, and prohibitive costs of services and transportation.<sup>122</sup>

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<sup>121</sup> International Youth Foundation (IYF), "Navigating Challenges. charting Hope. A Cross-Sector Situation Analysis of Youth in Uganda," (Baltimore, Maryland: IYF, 2011).

<sup>122</sup> Ibid.

## 5. CONCLUSION

There is a growing body of evidence that malaria during adolescence can have many negative repercussions, including decreased school performance and cognitive development, and poorer birth outcomes compared to women in other age groups. USAID's Malaria Action Program for Districts can help to minimize these impacts in Uganda by adopting a youth empowerment approach that acknowledges youth as a population with unique needs and capabilities, and partners with them in the design and implementation of youth-friendly malaria programming in their communities and schools.

While knowledge of malaria causes and prevention methods is high among Ugandan youth, misconceptions remain. Youth behavior and practices do not reflect these high levels of awareness as youth regularly self-medicate and delay obtaining health care because their needs are not met by the health system. Poverty plays a critical role in curtailing youth efforts to prevent and treat malaria. ITN use is limited by insufficient numbers of nets in households, and youth not being considered as a priority population for their use. In-school youth may have better access than out-of-school youth to prevention and treatment, but both require strengthened youth-friendly services in public health facilities to improve health outcomes, including improved monitoring of in-school health services by district health authorities. The youth-friendly services that are provided in public health facilities or through community outreach do not include malaria as a program area, and face severe resource restrictions. Providing gender- and youth-sensitive training to health workers may begin to address some of the supply-related barriers that deter youth from obtaining health care, but the larger challenge of drug shortages in public health facilities dominates the reasons why youth do not seek treatment in a timely manner. Pregnant adolescents have specific needs when it comes to malaria prevention and treatment. Stigma and discrimination by health workers, their families, and community members deter pregnant adolescents from attending antenatal care. Government policies meant to protect adolescent girls act as a further barrier to malaria prevention and treatment services.

Despite these challenges, there is a robust policy framework in place, and examples of successful youth interventions that are already in place for sexual and reproductive health interventions that can be leveraged to provide youth-friendly malaria programs. Most importantly, youth need to be empowered to contribute to the malaria response in their schools, health facilities, and communities. Youth should be leveraged as community change agents by supporting them to lead the design and implementation of malaria prevention and treatment awareness-raising in their schools and communities, and to lead their communities in identifying local needs and responses to reduce the malaria burden. District health teams, health workers, and community leaders and influencers will need to be sensitized to the importance of youth engagement in malaria response, and encouraged to support youth empowerment in this manner.

## 6. RECOMMENDATIONS FOR MAPD

Gaps	Recommended Actions
IPTp	
<p>1 Stigma, discrimination and, at times, abuse by health workers, parents, and community members deter pregnant adolescents from attending antenatal care, and reduce access to IPTp.</p>	<p>Support district health authorities to equip health workers with skills to provide youth-friendly services, through improved understanding of youth issues surrounding malaria and improved interpersonal communication to reduce instances of discrimination and abuse. Engage youth, particularly those who sit on the District Committees on Adolescent Health, in the design and delivery of the training sessions to encourage dialogue between health workers and youth (<b>Capacity Building Team</b>).</p> <ul style="list-style-type: none"> <li>Integrate youth-friendly skills into existing on-the-job coaching and supportive supervision programs to reduce budget requirements (<b>Capacity Building Team</b>).</li> </ul> <p>Work with community leaders and influencers, including youth council members, to raise awareness in the community of the challenges faced by pregnant adolescents in accessing health care, and the importance of IPTp to prevent malaria in pregnancy (<b>SBCC Team</b>).</p> <ul style="list-style-type: none"> <li>Support youth council members to design awareness campaigns under the guidance of health workers. Offer support to cover the costs of materials, equipment, transport and meals.</li> </ul> <p>Support female youth, especially young mothers and pregnant adolescents, and working with district health authorities, to design an SBCC campaign<sup>123</sup> to increase ANC attendance and IPTp uptake among their peers (<b>SBCC Team</b>).</p>

<sup>123</sup> For SBCC activities, youth should be encouraged to identify the mediums most effective in reaching their peers, which may include mass media (radio, televisions, billboards, posters), community dramas, school clubs, and sports events. Debate clubs can be a useful forum for addressing myths and misconceptions.

	<ul style="list-style-type: none"> <li>• Meaningfully engage female youth in the design and delivery of awareness raising campaigns.</li> <li>• Create a peer support network of female youth to guide, mentor or support other female youth in their communities. Provide training to peer support network leaders and promote the network at the community level. <sup>124</sup></li> </ul>
<p>ies to increase male attendance reduce teenage pregnancy and e barriers to antenatal care for nts.</p>	<p>Raise awareness with the NMCP and Reproductive Health Unit at the Ministry of Health of the unintended, negative consequences of the policies, and support ministry efforts at policy revision or adjustments to implementation (<b>MIP Team</b>).</p> <ul style="list-style-type: none"> <li>• Organize a review of the results of the implementation of the policies with health officials. If results are not available, propose to conduct a simple survey or focus group discussions and key informant interviews with health workers at health facilities. Ensure youth through youth councils are part of the process.</li> <li>• Document concerns as well as recommendations from health workers at health facilities. Their perspective will be important to improving health worker attitudes and health service quality.</li> </ul> <p>Support district health authorities to educate health workers on the negative repercussions of the policies, and support district efforts to adjust policy implementation in a manner that does not obstruct access for female youth. For example, health workers can be sensitized to provide services to pregnant adolescents when their husband or partner does not accompany them. (<b>MIP Team</b>).</p>
<p>not have sufficient numbers of ehold members, and youth are the limited number of nets that</p>	<p>Support district health authorities to implement an SBCC campaign on the importance of all household members sleeping under an LLIN, including youth (<b>SBCC Team</b>).</p> <ul style="list-style-type: none"> <li>• Build on existing campaigns and ensure youth participation in all aspects of the campaign design, delivery and evaluation. Allow for innovation and diversity based on messaging that youth consider interesting and useful to them.</li> </ul>

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- Ensure that LLINs will be available to meet increased demand created by the campaign (**Malarial Technical Team**).
  - Involve rural communities to ensure different dialects and community-specific messaging are employed.

Explore the possibilities of extending LLINs to secondary school levels (**Malaria Technical Team**).

Advocate to NMCP to pay particular attention to youth in its future LLIN distribution-related reviews, including the mass distribution campaigns, to understand how youth access to LLINs is addressed, and to identify lessons for future distribution campaigns and the implementation of the universal coverage policy (Monitoring and Evaluation (**M&E**) Team).

- Organize a youth-led (and adult-guided) assessment of how LLINs are accessed and distributed to youth. Provide a stipend for youth involved in the study.

Use the planned MAPD LLIN use, care and repair initiatives through community dialogues to include and engage youth and children (through school club activities) (**SBCC and Malaria Technical Teams**).

Ensure that special consideration is given to adolescent girls' needs when promoting or discussing the net user ratio (**Malaria Technical Team**).

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4 LLINs are not consistently available through ANC, or they are given to patients at their last ANC appointment.

Support district health authorities to improve the availability of LLINs at health facilities for ANC attendees (**MIP Team**).

- Examine the procurement, storage and distribution system at the district level, and identify opportunities for improvement.

Support district health authorities to provide on-the-job coaching of health workers that includes instructions to provide an LLIN to all women and youth attending ANC at their first appointment. Supervision and performance reviews should support the coaching (**MIP Team**).

- Examine the distribution system at health centers to determine why (or why not) LLINs are distributed to adolescent girls through ANC and identify opportunities for improvement.

5	There are significant data gaps concerning youth decision-making to use LLINs, especially for boys.	Organize a youth-led (and adult-guided) assessment of youth attitudes and practices regarding LLIN use. Provide a stipend for youth involved in the study ( <b>M&amp;E Team – could be input for forthcoming UMIS</b> ).
		Support male and female youth, working with district health authorities, to design an SBCC campaign to increase LLIN use among their peers ( <b>SBCC Team</b> ).
		<ul style="list-style-type: none"> <li>Organize youth group discussions, panels, and community activities where they can engage in a discussion in a systematic manner. Obtain leadership support from district health teams and local leaders, and publicize the events to grow interest and participation.</li> </ul>
		Support youth leaders to bring together youth in their schools and communities to discuss the challenges they face in protecting themselves from malaria, including LLIN use, and to develop strategies to overcome them ( <b>SBCC Team</b> ).
		<ul style="list-style-type: none"> <li>Organize youth groups, discussions, panels, and school activities in partnership with school leadership. Bring schools together for recreational activities, such as debates, theatre, sports competitions, and video production/competitions, and use these opportunities to organize educational talks, videos, and roundtable discussions within the Mass Action against Malaria (MAAM) framework.</li> </ul>

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**Knowledge, education, and outreach**

6	Some youth have misconceptions about malaria's causes and prevention methods.	Support male and female youth, working with district health authorities, to design an SBCC campaign to educate youth on malaria causes and prevention methods, and to dispel common misconceptions. The targeted SBCC activities should go beyond malaria management and consider messaging about fever management. Much as malaria will remain the focus, starting with fevers rather than malaria will make the youth appreciate the fact that not all fevers are malaria, and they could be more willing not to use anti-malarials for all fever episodes ( <b>SBCC Team</b> ).
7	Malaria education in schools is inconsistent, and not overseen by district health authorities	Support DHMTs to work with District Education Officers (DEOs) to identify ways to improve coordination for improved malaria education in schools. Planned school LLIN distribution activities can be leveraged to also include improvement of both individual and institutional capacity to educate pupils on fevers and malaria.

	Support schools to incorporate malaria education into school clubs to promote youth dialogue and engender youth leadership on malaria prevention and treatment in schools and at home ( <b>SBCC and Malaria Technical Teams</b> ).
8 Malaria-related community outreach activities do not have specific strategies to engage youth. Youth outreach activities do not consistently include malaria messaging.	<p>Support district health authorities to work with existing organizations conducting youth outreach, including public health facilities, NGOs and youth organizations, to integrate malaria prevention and treatment messages and services (<b>SBCC Team</b>).</p> <p>Create youth leagues with the MAPD village health clubs and link them to the youth councils so they can oversee and give support to these clubs in order to develop malaria skills among youth.</p> <p>Engage youth in SBCC activities to select key influencers, promote youth dialogue, and to identify youth priorities in all health promotion activities.</p>

### Treatment-seeking

9 Gender norms perpetuate the belief among male youth that they can cure themselves through illicit drug use or other methods of self-treatment.	<p>Support male youth, working with district health authorities, to develop an SBCC campaign to challenge gender norms that result in delayed treatment-seeking by men and boys (<b>SBCC Team</b>).</p> <p>Support male youth in schools and communities to establish and lead peer support groups where they can discuss and challenge local concepts of masculinity and its impact on their health (<b>SBCC Team</b>).</p>
10 Youth will self-medicate through drug shops, use of herbal medicines, illicit drugs, or leftover medications in the household before seeking treatment at a health facility.	Support youth, working with district health authorities, to develop an SBCC campaign to promote the “test and treat” strategy among youth. Emphasize the importance of early treatment and adherence to treatment/medication in a youth-friendly manner ( <b>SBCC Team</b> ).
11 Adults’ disparaging views of youth treatment-seeking habits deter youth from attending health facilities, or affect the quality of care they receive when they do visit.	See Recommendation #1
12 Youths’ lack of funds to purchase medication or to pay for transport to health facilities can affect their health care access.	See Recommendation #3

13 Drug shortages in public health facilities deter youth from seeking treatment, and increase their risk of taking expired or incorrect medications, or receiving incomplete treatment regimens through private sector drug shops and clinics.	<p>Link with and share field based information with UHMG, which is responsible for supply chain, so as to identify and address bottlenecks in the delivery of essential medicines, including anti-malarial drugs, to public health facilities (<b>MIP and Malaria Technical Teams</b>).</p> <p>Build capacity at the local level for ordering and managing drug stocks, and enhance supervision. Monitor stock levels and build the capacity of health workers to manage quantification and requisition of anti-malarial medication.</p> <p>Advocate increase of essential medicines and commodities budgets and investments by the government and donors (<b>MIP and Malaria Technical Teams</b>).</p>
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### Youth-friendly services

14 Strong youth-friendly policies exist, but dissemination and implementation are inconsistent. Malaria is not currently included in the Government of Uganda's Adolescent Health Policy Guidelines and Service Standards.	<p>Support the NMCP to integrate malaria in the next iteration of the Adolescent Health Policy Guidelines and Service Standards.</p> <p>Support NMCP and district health authorities to disseminate the revised guidelines, and to provide training to health workers on its implementation, working in partnership with the Ministry of Labour, Gender and Social Development and district community development officers (<b>MIP and SBCC Teams</b>).</p>
15 The delivery of youth-friendly services is severely hampered by a lack of dedicated personnel and financial resources at the district and health facility levels.	Support the establishment of dedicated national and district budgets for the operation of youth-friendly corners in health facilities, and youth outreach in communities.
16 Malaria prevention and treatment are not consistently integrated in existing youth-friendly services.	Support district health authorities to deliver a malaria package in youth-friendly services, as per the revised Adolescent Health Policy Guidelines and Service Standards ( <b>SBCC and Malaria Technical Teams</b> ).
17 In-school treatment services vary by school, and are not monitored by district health authorities.	See Recommendation #7
18 District health authorities and health workers are not trained to design and implement youth-friendly services.	Support district health authorities to build the capacity of district staff and health workers for the provision of youth-friendly services. Engage youth in the design and delivery of capacity building initiatives to encourage dialogue and collaboration between district health authorities and youth ( <b>SBCC Team</b> ).

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		Involve youth at all levels of advocacy, including in district health management teams <b>(MIP, SBCC and Malaria Technical Teams)</b> .
19	District-level malaria programs do not include youth-specific strategies for social and behavior change communication, or community outreach.	See Recommendations #1, 2, 7-10
20	Malaria data available through routine data systems include data on the youth demographic, but are not analysed separately. There is limited data available on malaria trends in youth.	<p>Support district health authorities to analyse existing malaria data disaggregated by age (10-14y, 15-19y) and by sex, and to incorporate the findings into district malaria programs <b>(M&amp;E Team)</b>.</p> <ul style="list-style-type: none"> <li>Engage women and youth from universities or other learning centers to work in partnership with the Ministry of Health, district health authorities, community-based organizations, and NGOs to generate joint reports using routine data and with strong youth participation.</li> </ul> <p>Support youth to work with district health authorities to identify data gaps for malaria trends in youth, and to collect and analyse data among their peers to inform district malaria programs <b>(M&amp;E Team)</b>.</p> <ul style="list-style-type: none"> <li>Organize internships, study tours to districts, and field visits/surveys with youth participation. Ensure youth have clear roles and responsibilities, and are given equal standing with adults during studies and other activities. Collaboration between adults and youth should be emphasized throughout.</li> </ul>

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# ADDITIONAL RECOMMENDATIONS

Recommendations were generated during the youth trainings but are beyond the scope of the MAPD project.

Issues	Recommended Actions
and at times, abuse, by parents, and community violence, and reduce access	<p>Involve members of the local youth council, as relevant and appropriate, in the health service provider hiring and training process, including developing interview questions, serving on orientation panels, and organizing youth day events with newly-hired health workers.</p> <p>Establish separate youth-friendly spaces or different days for the provision of youth-friendly services.</p> <ul style="list-style-type: none"><li>• Support youth council members to design awareness campaigns under the guidance of health workers. Offer support to cover the costs of materials, equipment, transport and meals.</li><li>• Support female youth, especially young mothers and pregnant adolescents, and working with district health authorities, to design an SBCC campaign<sup>125</sup> to increase ANC attendance and IPTp uptake among their peers.</li><li>• Meaningfully engage female youth in the design and delivery of awareness-raising campaigns.</li><li>• Create a peer support network of female youth to guide, mentor or support other female youth in their communities. Provide training to peer support network leaders and promote the network at the community level. <sup>126</sup></li></ul>
to increase male and to reduce teenage	<ul style="list-style-type: none"><li>• Adopt a participatory approach that engages young women through dialogues, workshops, or field trips to identify local solutions to overcome the most common</li></ul>

Youth should be encouraged to identify the mediums most effective in reaching their peers, which may include mass media (radio, posters), community dramas, school clubs, and sports events. Debate clubs can be a useful forum for addressing myths and

Unskilled youth facilitators will need to be trained to ensure discussions are productive and do not serve to inadvertently promulgate

<p>Marriage are barriers to pregnant adolescents.</p>	<p>barriers to health service access. Encourage sharing of experiences and best practices between health facilities.<sup>127</sup></p> <ul style="list-style-type: none"> <li>• Document how the most effective health facilities are implementing government policies regarding pregnant youth.</li> <li>• Bring together district health officers to discuss results, share best practices, and visit other districts.</li> </ul>
<p>do not have access to financial resources needed</p>	<p>Explore options for creating an incentives program to encourage ANC attendance by female youth and their partners.</p> <ul style="list-style-type: none"> <li>• Consider providing a small reward or incentive for female youth and their partners when they access ANC. Engage youth in determining the form of the incentive via youth councils or other groups that are representative of young women.</li> <li>• Explore establishing an incentive program for youth who participate in family planning services.</li> <li>• Consider establishing a matched savings program for young mothers who are involved in an economic activity.</li> </ul>
<p>Youth-friendly services is a lack of dedicated financial resources at the community levels.</p>	<p>Assess the feasibility of creating a youth volunteer network to support current and future CHEWs/VHTs.</p> <p>Develop and implement a pilot program to provide targeted technical assistance for the provision of youth-friendly services and outreach in health facilities. Monitor and evaluate the pilot program to measure impact (using MAPD indicators) and implementation/process factors (e.g., feasibility, cost, applicability) to inform scale up and experience sharing.</p>

## 8. REFERENCES

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