Malaria Behavior Survey

Angola 2023

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PMI INICIATIVA DO PRESIDENTE DOS ESTADOS UNIDOS CONTRA A MALÁRIA
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Breakthrough ACTION FOR SOCIAL & BEHAVIOR CHANGE

Acknowledgements

This report is the result of the contribution of several individuals and institutions. The study was designed and implemented under the auspices of Breakthrough ACTION to assess the effects of a social and behavior change communication program that sought to improve malaria-related prevention and treatment outcomes in Angola. We are particularly grateful to the U.S. President's Malaria Initiative (PMI) and the United States Agency for International Development (USAID) for their financial and technical support that made this study possible. We also appreciate the role of the National Health Ethics and Research Committee in Angola, and the Johns Hopkins University Institutional Review Board for their support in ensuring the study upholds high ethical standards in the treatment of human subjects in research.

Stella Babalola, Professor at Johns Hopkins University and Director of Research and Evaluation at the Center for Communication Programs (CCP), was responsible for developing the study protocol, helped to initiate data collection, and led data analysis and reporting.

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Breakthrough ACTION implemented the 2023 Malaria Behavior Survey (MBS) in Angola from February to April 2023. PMI provided funding for this MBS through USAID. CCP implemented this survey through the Breakthrough ACTION project, a USAID-funded project for social and behavior change. Additional information about the 2023 Angola MBS may be obtained from Stella Babalola (stella.babalola@jhu.edu).

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Acronym List

ACT	Artemisinin-based combination therapy
ADECOS	Community and health development agent
ANC	Antenatal care
aOR	adjusted odds ratio
CCP	Johns Hopkins Center for Communication Programs
CHW	Community health worker
CI	Confidence interval
DHIS2	District Health Information System 2
DHS	Demographic and Health Survey
DNSP	National Directorate of Public Health
EA	Enumeration area
IPC	Interpersonal communication
IPTp	Intermittent preventive treatment of malaria in pregnancy
IRS	Indoor residual spraying
ITN	Insecticide-treated net
MBS	Malaria Behavior Survey
MIP	Malaria in pregnancy
MIS	Malaria Indicator Survey
MOH	Ministry of Health
NMCP	National Malaria Control Program
NMSP	National Malaria Strategic Plan
PMI	U.S. President's Malaria Initiative
RDT	Rapid diagnostic test
SBC	Social and behavior change
SP	Sulfadoxine/pyrimethamine
USAID	United States Agency for International Development
WHO	World Health Organization
ZMCC	*Zero Malária Começa Comigo*/Zero Malaria Starts with Me

Reading and Understanding Tables in the 2023 Angola Malaria Behavior Survey

The Malaria Behavior Survey (MBS) consists of over 50 tables of data, the majority of which are located in the report annex. Summary tables of important indicators for each section are displayed in the body of the text at the end of the ideational factors results narrative for each section and are referred to by their table number. Tables displaying the results of logistic regression models are available at the end of the behavior results for each section, referred to by their table number.

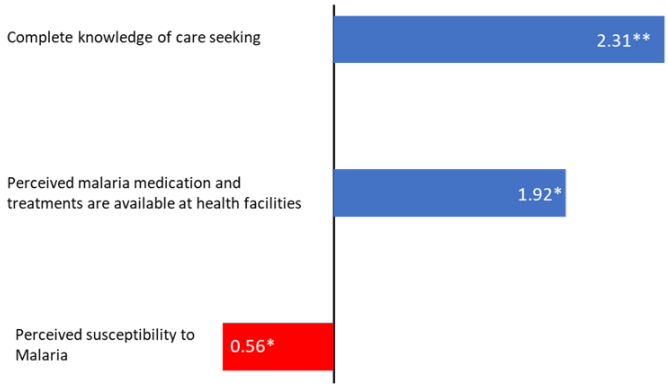
The MBS contains additional labeled figures in the form of maps, graphs, and other visuals throughout the document. These are meant to aid in interpreting the document and are referred to and discussed in the text by their figure number. Smaller, unlabeled, at-a-glance call-out boxes are also present throughout the results section. However, these are merely meant to summarize key results from each section and are not referred to in the body of the text.

Example of an at-a-glance box

Ideational Determinants at a Glance	
Highly Prevalent (≥ 80%)	
	Favorable perceptions of facility-based health workers
	Perceive positive gender norms
Less prevalent (≤40%)	
	Perceived severity
	Interpersonal communication with spouse
	Interpersonal communication with friends/family

Example of a labeled figure

Figure 5. *Factors Significantly Associated with Prompt and Appropriate Care-Seeking and their Adjusted Odds Ratios, MBS Angola 2023 (N=302)*



Significance: * p<0.05; ** p<0.01; ***p≤0.001

Example 1: Summary Tables

Table 3: Summary of Cross-Cutting Ideational Factors

Percentage of respondents who reported cross-cutting ideational factors related to malaria, by socioder

Characteristic	Basic knowledge about malaria (N=4261)	Perceived susceptibility to malaria (N=4261)	Perceived severity of malaria (N=4261)	Reported interpersonal communication about malaria with spouse or partner (N=2865)	Reported interpersonal communication about malaria wit friends/family (N=4261)
Total (%)	**55.1**	**54.2**	**37.8**	**16.3**	**13.5**
Province	***	***	**	***	***
Cuanza Norte	46.1	53.1	37.6	13.6	9.6
Lunda Sul	69.4	45.8	34.3	13.6	11.6
Zaire	52.8	62.6	41.1	21.7	19.3
Sex				***	***
Female	54.9	53.3	38.4	14.3	12.1
Male	56.4	60	34.5	25.4	22.2
Age group	*	**	*	*	***
15–24	51.6	50.1	41.3	16.7	11.9
25–34	62.1	59.9	35.9	17.3	15.4
35–44	51.2	59.7	35.9	15.4	12.5
≥45	55.7	43.5	36	14.8	15.2

Highlight 1: The name of the indicator for that specific column and the number of observations in the sample. In this example, the first column pertains to basic knowledge about malaria, and this indicator included the entire sample of 4,261 respondents.

Highlight 2: The weighted percentage of the specific indicator in the sample. In this example, 54.2% of the weighted population perceived they were susceptible to malaria.

Highlight 3: The characteristic of interest and subgroups. In this example, the characteristic is respondent sex, and the subgroups are female and male.

Highlight 4: The level of significance for the variation between subgroups *p<0.05; **p<0.01; ***p<0.001, and no star denotes there is not a significant difference between subgroups. In the example shown, there is a significant difference among regions for perceived severity of malaria.

Highlight 5: The relative percentage of each subgroup with the indicator. For instance, 16.7% of respondents aged 15–24 reported interpersonal communication about malaria with a spouse or partner in the previous six months.

Example 2: Tables Displaying Logistic Regression Results

Table 10. Results of the logistic regression exploring factors associated with reporting consistent ITN u (sleeping under an ITN every night of the week)

Characteristic	N (%)	Adjusted odds ratio	95% CI
Age group, 25-34 as reference			
25-34 (Reference)	1351 (73.7)	1.00	
15-24	1393 (65.7)	0.50***	0.37 0.66
35-44	965 (62.0)	0.72	0.52 1.01
45 and up	552 (60.7)	0.64*	0.43 0.97
Religion			
Catholic (Reference)	1608 (70.9)	1.00	
Protestant	2096 (64.6)	1.12	0.86 1.46
Other	557 (62.4)	1.20	0.83 1.74
Province			
Cuanza Norte (Reference)	1582 (73.9)	1.00	
Lunda Sul	1193 (56.5)	0.92	0.64 1.32
Zaire	1486 (67.2)	0.77	0.57 1.05
Sex			
Male (Reference)	785 (70.0)	1.00	
Female	3476 (66.0)	0.64*	0.45 0.91

Highlight 1: The name of the category used in analysis and the subgroups in it as separate rows. In this example, age group is included in the analysis with all four groups. Note that the first subgroup listed is always the reference for comparison with the other subgroups, so respondents aged 25–34 are the reference.

Highlight 2: The frequency of each row in the sample. In this example, there are 1,351 respondents are aged 25–34 in this analysis.

Highlight 3: The percentage of each row that is reporting the behavior or intention. In this example, 70.9% of respondents who are Catholic reported consistently using an insecticide-treated net (ITN) every night, while 64.6% of respondents who are Protestant report consistent use.

Highlight 4: The adjusted odds ratio (aOR) of the row and the level of significance. For significance, *p<0.05; **p<0.01; ***p<0.001, and no star denotes there is not a significant difference between the row and the category reference. In this example, female respondents have 0.64 odds of consistent net use compared to male respondents, and this is a significant result.

Highlight 5: The 95% confidence interval (CI) for the aOR. In this example, respondents from Lunda Sul had a 0.92 odds of consistent net use compared to Cuanza Norte, but the 95% CI ranges from 0.64–1.32.

Preface

For several years, the National Malaria Control Program (NMCP) has been implementing interventions approved by the World Health Organization to control and eliminate malaria in Angola. Although significant progress has been made in reducing malaria mortality, it remains a huge public health problem, affecting one third of the population every year. In 2022, Angola's national health information system recorded 12,602 deaths from malaria, mainly among pregnant women and children under five. The success of malaria prevention depends on the quality and implementation of effective interventions, such as the mass distribution of insectide-treated mosquito nets and intermittent preventive treatment of malaria during pregnancy.

The Malaria Behavior Survey (MBS) has been tested in many countries and is designed to inform the development of messages that can address key issues affecting community adoption of positive malaria behaviors. The MBS advisory group in Angola reviewed and adapted the protocol to the Angolan context and contributed to the preparation and planning of the data collection. The research company, Mentor Initiative, was responsible for data collection under the direct supervision of the NMCP and Breakthrough ACTION. The NMCP and the Breakthrough ACTION Angola lead the training of the data collectors and field supervision was carried out to guarantee the quality of the data collection. The aim of the MBS was to understand the sociodemographic and behavioral determinants associated with the uptake of malaria interventions in Angola to inform appropriate programmatic activities.

This report presents contextual data, highlighting important behavioral determinants of malaria, both at the community and health facility level, which will allow for further analysis and research by the NMCP and partners implementing malaria control interventions. This includes providing data for standard malaria indicators used to understand and validate evidence-based priorities for the development of malaria interventions, including health messages, and analyzing trends of key behavioral outcomes. Key malaria control interventions include the distribution of insecticide-treated nets, intermittent preventive treatment during pregnancy, and malaria case management for children under five years of age. The MBS was carried out in 3 provinces of Angola - Kwanza Norte, Lunda Sul, and Zaire.

The NMCP would like to thank USAID/PMI for its financial support for the study, the Breakthrough ACTION project for its fundamental role, the Johns Hopkins Bloomberg School of Public Health, and all the Angolans who participated in the successful implementation of the survey. The results of this report will greatly support malaria programming and future policy decisions.

Dr. José Franco Martins

Coordenador Nacional de Controlo da Malária/National Malaria Control Program Coordinator

Luanda, Angola

Janeiro 2024

Executive Summary

The National Malaria Control Program (NMCP) continues to strategize effective malaria control interventions in Angola, where malaria is still a major public health concern. Multiple implementing partners, including the U.S. President's Malaria Initiative (PMI), have supported the NMCP's integrated malaria interventions and strategies. Along with systemic interventions, malaria control depends in part on human behavior. Understanding populations' malaria-related knowledge, attitudes, and practices are key in shaping social and behavior change (SBC) programs to influence human behavior toward the prevention and control of malaria. The goal of the Malaria Behavior Survey (MBS) is to provide a better understanding of the sociodemographic and ideational characteristics associated with malaria-related behavioral outcomes in Angola, and to inform SBC strategies and activities designed to improve these outcomes.

The MBS was implemented in three provinces in Angola: Cuanza Norte, Lunda Sul, and Zaire. The survey gathered data from 3,148 households and 4,261 individuals (3,476 women aged 15–49 and 785 men aged 18–59). The most salient and key findings are presented in this Executive Summary and are reported by province only if statistically significant at the p=0.05 level or below. More detailed results and significance testing can be found in the body of this report.

Household Characteristics

- On average, households in Angola were composed of about four residents and two sleeping rooms.
- About 55% of households had electricity, 57% of households were located near a public health facility while 29% were near a private health facility, and 47% were near a pharmacy.[1]
- A total of 63% of all respondents lived in urban[2] areas.
- A total of 60% of all households owned a radio, 36% had a television, 87% owned a simple mobile phone, 24% had a smartphone, 52% owned land, and 42% owned livestock.

Population Characteristics

- More household members in Angola were female (52%) or aged 18 or older (47%).
- Two-thirds of respondents were married or living with someone as married (66%), and almost one-half had not completed primary education (49%).
- About 9% of respondents in Zaire and nearly 35% of respondents in Cuanza Norte were in the lowest wealth quintile, while 32% of respondents in Zaire province were in the top quintile compared to 8% in Cuanza Norte.

Cross-Cutting Ideational Factors

[1] "Near" is defined as located within five kilometers (thirty minutes or less on foot, or ten minutes or less by car).

[2] "Urban" is defined as communities designated as urban or peri-urban by the municipal administrations and provincial governments

- More than one-half of respondents had basic knowledge about malaria transmission and prevention (55.1%). This varied by educational level, province, and age group. A similar percent (54.2%) believed they were susceptible to malaria.
- Only 37.8% of respondents believed the consequences of malaria were severe.
- Few (16.3%) discussed malaria with their spouse or partner or with family and friends (13.5%) in the six months prior to the survey.
- Perceptions of health care workers were highly favorable. Nearly 86% of respondents had favorable perceptions of facility-based health care providers for malaria-related services overall.
- A total of 82% of respondents perceived boys and girls as having equal priority for net use and malaria treatment, indicating equitable gender attitudes related to malaria prevention and care.
- This study found many cross-cutting ideational factors including general knowledge of malaria, perceived severity, and interpersonal communication (IPC) with spouses/partners or friends/family to be statistically different by province, education, age group, and wealth quintile.

Care-Seeking for Fever in Children Under Five Years

- While two thirds of respondents held positive attitudes toward care-seeking for fever, only 42% had comprehensive knowledge specifically related to care-seeking and treatment, defined as knowing when and where to seek care as well as the recommended treatment and test for malaria.
- About 58% of respondents believed in the response efficacy of malaria testing, compared to 44% who believed in the response efficacy of malaria treatment.
- Three quarters (74%) of respondents believed they could complete various aspects of malaria care-seeking, from finding the money to take their child in to making sure their child takes the full dose of medication.
- A total of 67% of respondents believed most people in their community sought prompt care for their child's fever, 66% reported being involved in their child's fever care-seeking decision, and 60% reported being involved in the decision to purchase medicine.
- A total of 69% of respondents reported equitable gender attitudes, favoring neither male nor female children for care-seeking for fever.
- About 29% of caregivers had reported a child under five with a fever in the two weeks before the survey, 91% of whom sought some level of care for that fever.
    - Among those who had sought care, 78% did so within the recommended period (the same day or day following fever onset), and 75% did so within both the recommended period and with a qualified health care provider.
    - The majority (88%) of caregivers with a feverish child reported seeking care ***first*** from a health facility/clinic, health care provider, or community health worker (CHW).
- The significant ideational determinants of intention for prompt and appropriate care-seeking were correct knowledge of malaria care and treatment and perception that health facilities have the malaria commodities needed for testing and treatment.

Malaria in Pregnancy

- Only 20% of respondents had comprehensive knowledge of malaria in pregnancy (MIP), defined as correctly answering all three knowledge questions involving intermittent preventive treatment of malaria in pregnancy (IPTp)—when a pregnant woman should first seek antenatal care (ANC), the number of recommended ANC visits, and the number of doses of the prophylactic malaria drug (sulfadoxine/pyrimethamine [SP]) a pregnant woman should receive.

- About 69% of respondents held positive attitudes toward ANC and IPTp, and 76% saw MIP as a severe illness.
- Almost all respondents (93%) believed IPTp is efficacious, while fewer women (67%) believed they could complete all actions to obtain IPTp.
- Regarding descriptive community norms, 53% of respondents estimated that most pregnant women in their community attended at least four ANC visits and about one-half (50%) believed most pregnant women took SP.
- Regarding injunctive community norms, 65% of respondents did not know whether the community would approve of pregnant women taking SP to prevent getting sick from malaria.
- A total of 60% of respondents reported favorable perceptions of health care providers who offer MIP care.
- A total of 69% of women with a live birth in the past two years reported attending at least four ANC visits. Those in the lowest wealth quintiles and those who had not completed primary school had lower rates of attending at least four ANC visits.
- Among respondents with a live birth in the previous two years, only 46% attended an ANC visit in their first trimester of pregnancy.
- Around 65% of female respondents reported receiving at least three doses of IPTp in their last pregnancy. Only 43% of women aged 45 or older reported three or more IPTp doses during their last pregnancy compared to 60% of those aged 35–44. Respondents from Cuanza Norte (57%) were less likely to receive three or more doses than women in other provinces.
- About 44% of women reported they were accompanied by their partner/spouse for at least one ANC visit.
- A total of 80% of women who intended to get pregnant in the future reported their intention to seek ANC at least four times in a future pregnancy, while only 64% intended to attend ANC within the first trimester.
- Logistic regression analysis demonstrated multiple factors significantly associated with intention to attend four ANC visits: comprehensive knowledge of MIP, favorable perceptions of health care workers regarding ANC, and perceptions of self-efficacy regarding ANC.
- Logistic regression analysis demonstrated multiple factors significantly associated with intention to seek ANC early in a future pregnancy: complete knowledge of ANC services, favorable perceptions of health care workers regarding ANC, perceptions of self-efficacy to complete several ANC aspects, perceived susceptibility, and close proximity to a health facility.

Insecticide-Treated Net Use

- The majority of mosquito nets found in homes were insecticide-treated nets (ITNs), therefore, we will use ITNs in this report to refer to all mosquito nets in the survey population.
- About 86% of respondents knew that using an ITN could protect from malaria, and 73% had favorable attitudes toward ITNs.
- Just above one-half (54%) of respondents believed in the effectiveness of ITNs, while 83% believed they could complete all actions to use an ITN properly.
- About 67% of surveyed households had at least one ITN, while 27% of households had at least one ITN for every two individuals in the house.
- For household members, ITN access was 0.54 while ITN use was 0.4, giving a use/access ratio of 0.74. The use/access ratio was higher among urban households and among lower wealth quintiles.
- About 70% of survey respondents reported they use an ITN consistently (every night of the week). This varied significantly by sex, with more men (70%) sleeping consistently under ITNs

than women (66%). However, only 43% of respondents believed that most people in their community use an ITN every night (descriptive community norm).
- In logistic regression results, the most important ideational factors associated with consistent ITN use included perceived self-efficacy to use nets, favorable attitudes toward net use, knowledge of ITNs as a method of malaria prevention, equitable gender attitudes toward ITN use, and supportive descriptive community norms.
- Most ITNs (85%) had been washed at least once and were washed primarily with bar soap (52%). After washing, 63% of nets were reported to be dried out in the shade.
- ITN care behavior varied greatly with respondents reporting rolling or tying up ITNs when not in use (45%), gently washing ITNs (15%), and handling ITNs with care (24%).

Media Consumption

- More than a third of respondents (35%) owned a mobile phone or lived in a household with a radio (36%), while just under one-half lived in a household with a television (45%).
- About 35% of respondents listened to the radio at least once a week and about 51% watched TV at least once a week.
- A total of 28% of respondents reported seeing or hearing a malaria message in the six months prior to the survey, while only 17% could complete the prominent campaign slogan.

Recommendations

Care-Seeking for Fever in Children Under Five Years

- Care-seeking behavior is moderate, with 75% of caregivers who had a child under five with a fever in the previous two weeks reporting prompt (same day or next day) *and* appropriate (health facility/provider) treatment.
- Prompt and appropriate care-seeking may be increased by SBC activities that promote complete knowledge of care-seeking and the perceptions that malaria medication is available at health facilities, as these were the two most significantly associated factors with the reported behavior. As both of these factors were low among the survey population, there is room for improvement.
- To promote care-seeking behaviors, the perceived (and actual) availability of malaria care commodities is important. SBC programs can build more positive perceptions of health care providers among communities by addressing beliefs that health care providers do not always have the necessary supplies. This needs to be complemented with steps to strengthen supply-chain management to ensure commodities such as rapid diagnostic tests (RDTs) and artemisinin-based combination therapy (ACT) are available.

Malaria in Pregnancy

- Women from Cuanza Norte province and from rural areas were least likely to report attending four or more ANC visits (and receiving three or more SP doses), and less than one-half of women reported starting ANC in their first trimester.
- Based on the logistic regression results, women's intention to both seek four or more ANC visits and to initiate ANC early can be reinforced by promoting complete knowledge of ANC and IPTp, supporting the development of favorable perceptions about health care workers and ANC through both client-centered and provider-centered interventions, and improving the

confidence (self-efficacy) of women to complete four ANC visits by helping them overcome barriers in their actual context.

- Additionally, women's intention to initiate ANC early can be improved by increasing perceptions of susceptibility to malaria and increasing the proximity of health services to women.

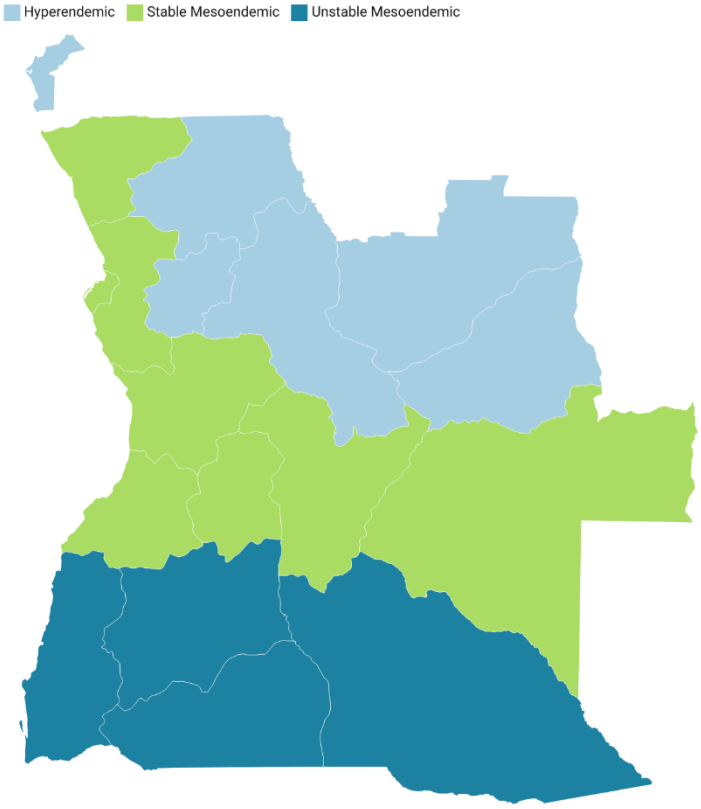
ITN Use and Care

- The ITN use-to-access ratio was moderate at 0.74, indicating that, of those individuals with access to an ITN in their household, roughly 74% used an ITN the night before. As such, both access and behaviors can improve. Increasing household ITN access through distribution activities is important.
- Based on the logistic regression results, to improve consistent ITN use (every night of the week), SBC programs can:
    - Increase perceptions of self-efficacy to use ITNs by promoting ease of use.
    - Increase knowledge of ITNs as a malaria prevention method through communication activities.
    - Build and maintain positive community norms toward ITN use by modeling ITN use through community leaders and influential individuals.
    - Foster positive attitudes toward ITNs by promoting the benefits of using them.
- ITN care behaviors of tying up or folding up nets when not in use can be improved by increasing positive attitudes toward ITN care with testimonials noting that it is worth the time and effort to care for ITNs so they can last as long as possible.
- Demonstrating the recommended ITN washing practices, which include washing ITNs infrequently, gently and with mild soap, and drying ITNs in the shade, can prove useful as there is room to improve these important practices as well.

Introduction

Context of Malaria in Angola

Figure 1. Malaria Transmission Zones (Source: PMI Angola)



Angola is located in Southern Africa bordering the Democratic Republic of Congo, Namibia, and Zambia. The population has been estimated to be 34,795,287 in 2023 (Angola National Statistics Institute [INE], Population Estimates, 2014–2050), with 64% of the population under 25 and 17% of the population under five years old. Angola has a high degree of urbanization relative to other countries in Africa, with an urban population of 67%. A recent World Bank report (2021) reports the (estimated) maternal mortality ratio at 222 deaths per 100,000 live births,[3] mortality under the age of five of 69 deaths per 1,000 live births,[4] and neonatal mortality of 27 deaths per 1,000 live births.[5]

According to the World Health Organization (WHO) World Malaria Report 2022, Angola accounts for 3.4% of malaria cases and 2.4% of malaria deaths globally, making Angola one of the five countries that account for over one-half of the global malaria burden in terms of both malaria cases and deaths. While the entire Angolan population is at risk for malaria, Angolan malaria transmission is subject to significant geographical heterogeneity, with different areas experiencing hyperendemic, stable mesoendemic, and unstable mesoendemic transmission. Northeastern provinces represent the majority of malaria burden in the country and experience hyperendemicity with the primary transmission peak from March to May and the secondary peak in October to November. In 2022, there were 9.2 million malaria cases, of which 32.5% were in children under five years of age and 3% in pregnant women.[6]

The 2016 Demographic and Health Survey (DHS) showed that only 37% of households had at least one ITN, but household ITN use given access was high in areas of high malaria incidence, including hyperendemic provinces (93%) and stable mesoendemic provinces (88%). Prompt care-seeking for fever (within 24 hours of onset) in children under five occurred in 27% of cases, and the number of women

[3] https://data.worldbank.org/indicator/SH.STA.MMRT?locations=AO
[4] https://data.worldbank.org/indicator/SH.DYN.MORT?locations=AO
[5] https://data.worldbank.org/indicator/SH.DYN.NMRT?locations=AO
[6] National Malaria Control Program DHIS2 data annual

who received at least one dose of IPTp during their last pregnancy in the previous two years was 56%, while only 20% of pregnant women received at least three doses.[7]

Malaria Interventions in Angola

Since its establishment within the National Directorate of Public Health in the Ministry of Health, the NMCP has made significant strides toward reducing the burden of malaria in Angola. The NMCP works in collaboration with major stakeholders including the United States Agency for International Development (USAID); PMI, led by USAID and co-implemented with the U.S. Centers for Disease Control and Prevention; the Global Fund to Fight AIDS, Tuberculosis and Malaria; the World Bank; WHO; the Roll Back Malaria Partnership to End Malaria; and UNICEF. Together, they ensure proper case management fand distribution of critical malaria commodities in Angola such as first-line ACTs, SP, parenteral artesunate, ITNs, RDTs, and laboratory supplies for microscopy.

The 2021–2025 National Malaria Strategic Plan (NMSP), created by the NMCP, aims to reduce malaria-related morbidity by 40% and mortality by 50% by 2025, compared to 2020 baseline figures. It seeks to do so via six strategic objectives, including targets for malaria prevention, diagnosis, and treatment; epidemiologic surveillance; promotion of favorable behaviors; malaria elimination; and management and governance. Specifically for malaria prevention, the NMSP aims to protect at least 80% of the population at risk of malaria with effective malaria prevention interventions through an integrated vector management strategy. Key activities include vector surveillance, and continuous and mass distribution of ITNs in high-incidence Angolan provinces, with the most recent mass ITN distribution occurring in 2022–2023. According to national policies, all pregnant women should be given an ITN during pregnancy for their protection, although implementing this practice varies. The NMCP also implements yearly indoor residual spraying (IRS) campaigns along the Angola-Namibia border in the Cuando-Cubango province, continuous monitoring of malaria commodities, dissemination of malaria treatment guidelines, and training of health workers. The NMCP also performs evaluations such as the Malaria Indicator Survey (MIS) and conducts implementation research including entomological studies using sentinel sites.

The NMCP has endorsed and integrated the Roll Back Malaria's advocacy campaign, "Zero Malaria Starts with Me/*Zero Malária Começa Comigo*" (ZMCC, its acronym in Portuguese), into its SBC strategy. The integrated multi-channel campaign focuses on three malaria-related behaviors: proper and consistent mosquito net use, prompt care-seeking for fever in children under five years of age, and intake of at least three or more doses of IPTp-SP in pregnancy. ZMCC employs several strategies including a general campaign, mass media communication, and IPC. Under the NMCP's comprehensive SBC strategy, the ZMCC campaign promotes malaria-related behaviors among the general population. ZMCC employs mass media through television spots, integrated with COVID messages; road billboard advertisements; and digital mass communication through Facebook and other social media platforms. IPC was not employed during the COVID-19 pandemic but was restarted in 2022.

Rationale for Malaria Behavior Survey Study in Angola

Research increasingly demonstrates the effective role of SBC programs in increasing the prevalence of positive health behaviors related to malaria prevention and treatment. For example, SBC programs need to target the specific ideational factors that influence decisions associated with malaria-related

[7] Angola Demographic and Health Survey, 2016.

behaviors. National and provincial data, including DHS and MIS studies, largely focuses on the prevalence of relevant behavioral indicators but provides limited information on behavioral determinants.

The MBS provides representative data at the provincial level with a focus on ideational factors that are not included in large national surveys. Such data can be used to:

- Estimate the prevalence of both behaviors and their ideational factors.
- Estimate the independent and combined associations of ideational characteristics on factors and behaviors.
- Identify ideational profiles based on underlying patterns across groups to examine how membership in ideational segments correlates to corresponding behaviors.

The NMCP and partners are committed to using SBC-related activities in their public health interventions. These analyses will help malaria programs and policymakers create and prioritize audience segments and develop tailored SBC activities that are evidence-based while reporting on the development of the 2023–2028 NMCP SBC Strategy.

Understanding these behaviors and perceptions is key to providing targeted interventions and informing current and future national strategies, to enhance political, private sector, and community level grassroots engagement in which people are empowered to take ownership of malaria prevention and control efforts. The MBS also provides feedback on the effectiveness and recall of campaigns including tagline recognition and sources of information.

Goals and Objectives of the Angola MBS

The goal of the MBS study is twofold:

- Provide a better understanding of the sociodemographic and ideational characteristics associated with malaria-related behavioral outcomes in Angola.
- Inform SBC activities designed to improve malaria-related ideational and behavioral outcomes to achieve these goals in Angola.

Specific objectives of the MBS include:

- To determine the ideational factors related to the utilization of treated bed nets, uptake of IPTp-SP, and malaria care-seeking and case management in children.
- To understand reasons for not adopting malaria prevention and treatment behaviors.
- To determine the focus of future programs designed to promote appropriate malaria prevention and treatment behaviors in Angola.

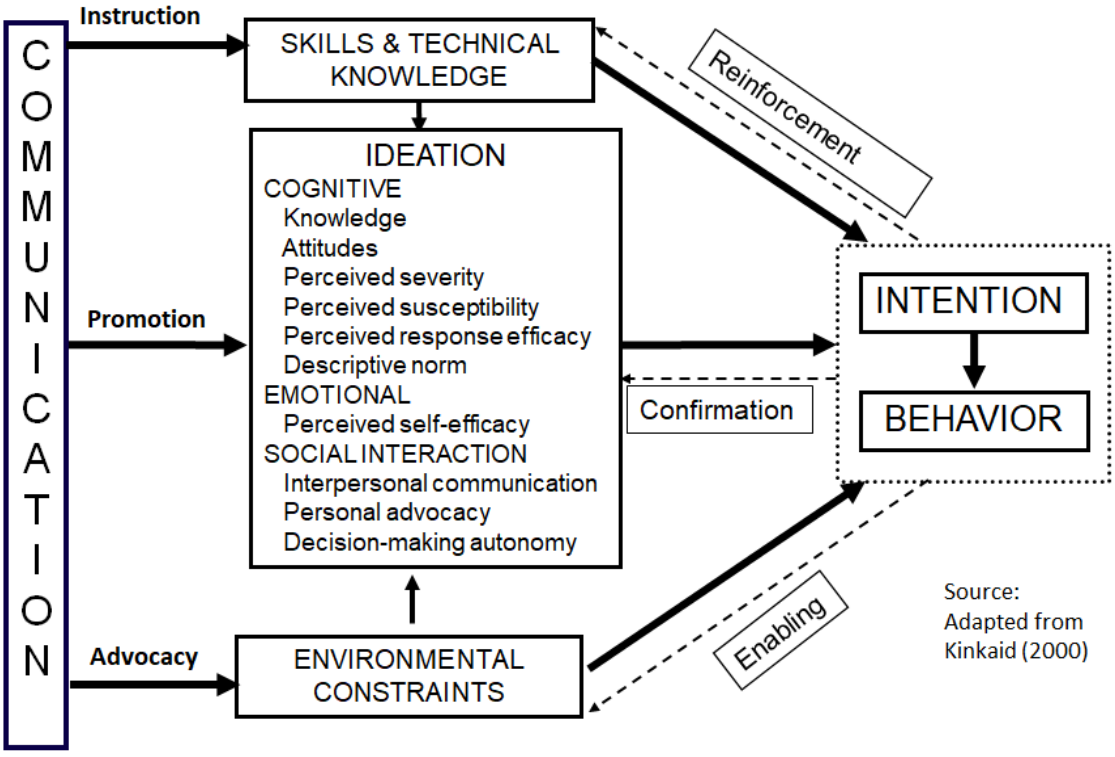
Given the scope of this study, the prevalence of malaria-related behaviors must also be assessed. This includes proper and consistent use of ITNs, uptake of IPTp-SP, and prompt and appropriate treatment of malaria in children. The MBS is powered to detect self-reported behaviors at the provincial level; it is especially designed to assess the association of these behaviors with ideational factors.

Conceptual Model

The conceptual framework of the MBS is the ideational model for strategic communication and behavior change, a predictive model of behavior change that focuses on the multiple, inter-related psychosocial variables that commonly influence individual behavior. As shown in the figure below, the ideation model recognizes that most behavioral decisions are driven by multiple psychosocial factors, often simultaneously.

The ideation model has three components, each of which comprises several elements: i) cognitive elements which include variables such as attitudes, beliefs, values, perceived risk, subjective norms, self-image; ii) emotional elements which include emotional response, empathy, and self-efficacy variables; and iii) social elements including social support and influence, spousal communication, and personal advocacy variables. These variables function like risk factors for disease, but in a positive way. The more of these ideational variables that apply to a person, the more likely that individual is to adopt the behavior. These ideational variables are also influenced by communication, be it through social interaction, mass media, or IPC. The factors work both individually and synergistically to influence health outcomes. Research has demonstrated the relationship between ideation and malaria behavior, including ITN use, IPTp, and care-seeking in children under five.

Figure 2. Ideation Model of Strategic Communication and Behavior Change



Glossary of Terms Used in the MBS

- **Perceived susceptibility** is the belief that one is likely to be affected by malaria.
- **Perceived severity** is the perception that the consequences of malaria are severe.
- **Perceived response efficacy** is the belief that recommended actions (e.g., prompt care-seeking, use and care of ITNs, acceptance of IRS, and uptake of IPTp) will help a person avoid or minimize the threat of malaria.
- **Perceived self-efficacy** is a belief in an individual's ability to take actions related to reducing malaria.
- **Descriptive norms** are the perceptions of what other people do.
- **Injunctive norms** are the perceptions of what behaviors would be approved or disapproved of by others.
- **Interpersonal communication about malaria** is the discussion with others about malaria topics (e.g., prevention, care-seeking, and treatment).
- **Decision-making participation** is a person's active involvement in decisions related to health care.
- **Equitable gender attitudes** are the absence of discriminatory attitudes toward boys or girls with respect to malaria prevention or treatment.

Methodology

The MBS is a cross-sectional survey with representation at the provincial level. This section describes methodological elements of the study, including survey design, sampling, data collection and analysis, and research ethics.

Survey Design

The MBS is a cross-sectional survey of randomly selected household heads, women, and men interviewed using structured questionnaires (one for each group of study participants). The study was representative at the provincial level and conducted in the provinces of Zaire, Lunda Sul, and Cuanza Norte. Participants were selected through a multi-step process consisting of i) probability proportional to size selection of the enumeration areas (EAs) based on the population size; ii) a random selection of eligible households; and iii) selection of all eligible individuals. This design allows the study findings to be generalizable to inform programmatic activities to improve malaria-related ideational and behavioral outcomes.

Sampling

Sample Size and Justification

The study team estimated the sample size to measure relevant malaria-related outcomes related to net use including caregivers' bed net use, net use among children, and prevalence of positive attitudes toward consistent use of bed nets. The prevalence of households with at least one net was not readily available (the most recent survey was the DHS in 2015–2016), but a recent ITN mass distribution campaign was conducted in 2022, so this value was assumed to be at least 80%. Net use was obtained from the 2015–2016 DHS and varied by region (Cuanza Norte: 58%, Zaire: 80%). As there are no national estimates for positive attitudes toward consistent use of bed nets, we assumed this indicator to be 50%. This level of prevalence provided us with maximum variability and a more than adequate sample size. The following formula was applied to estimate the required sample size:

$$n = d \times \frac{z^2_{1-\frac{\alpha}{2}} * p(1-p)}{\delta^2 \times R_h \times R_i \times CF}$$

Where:

- n is the required sample of individuals (e.g., women) with the desired characteristics, per province.
- Z is the value Z corresponding to the desired level of confidence. A Z=1.96 is assumed, corresponding to 95% of the confidence level.
- d is the design effect due to deviation from simple random sampling, assumed to be 2.0.
- p is the estimated (expected) indicator, e.g., % of pregnant women who slept under an ITN the previous night. It is based on the 2015–2016 DHS and varied from 64.7% in Cuanza Norte to 80% in Lunda Sul.
- δ represents the desired margin of error. For the calculation of the study sample size, it is assumed that δ=5%.

- R_h is the household response rate. It is assumed to be 90% for this parameter.
- R_i is the response rate for women in selected households. A value of 96% is assumed for this parameter.
- CF is the additional correction factor to account for household ownership of at least one net, assumed to be 60% based on recent ITN mass distribution.

To obtain the desired sample size, a total of 139 clusters (20 households per cluster) in each province were selected for inclusion in the study, for a final sample size of 2,780 households. This sample size considered potential non-response at the household and individual levels. It also provided a representative sample at the provincial level and allows for the calculation of a valid estimate of key indicators of malaria behavior. Based on the 2015–2016 Angola DHS, the number of women of reproductive age per household varied between 1.16 in Cuanza Norte and 1.29 in Zaire, and every eligible woman was selected for the women's questionnaire. In a third of households, the study also selected the male partner of the woman of reproductive age to participate in the men's questionnaire. The unit of measure for the sample size is the household. The final sample size in all three provinces was 2,780 households which included 2,780 household heads, 927 men, and 3,400 women.

Participant Inclusion and Exclusion Criteria

Included participants were:

- Of reproductive age, defined in this study as between 15 to 49 years for women and between 18 to 59 years for men.
- Regular[8] residents of the selected household.
- Able to communicate in Portuguese, Kikongo, Tchokwe, or Kimbundu.
- For male participants, the partner of an eligible and interviewed woman.

Excluded participants were:

- Unable to consent to participate in the study.
- Unable to understand the questions and/or respond intelligibly.

Selection of Clusters

The study team obtained a comprehensive list of clusters, or EAs, for the selection of study EAs with the help of the NMCP, municipal administrations, and provincial governments. Each of the three provinces were divided into two strata: urban and rural ("urban" is defined as communities designated as urban or peri-urban by the municipal administrations and provincial government). From each stratum, the number of EAs was selected using probability proportionate to size. A total of 139 EAs were selected.

In each selected EA, the study first obtained the approval of community leaders and updated the sketch map with the help of these leaders or local stakeholders from the Ministry of Health.

Selection of Households

The study team conducted a census of the households in the selected EAs using a household listing form. For this survey, a household was defined as a group of people who regularly reside in the same

[8] Regular residents are those that stay in the household and consider themselves a part of it.

dwelling units and share meals. Eligible households were those with a woman of reproductive age (15–49). Once household listing was complete, the study team randomly selected 20 households from the list of eligible households in the cluster, interviewing every 'nth' household based on the number of households in the cluster and beginning with a computer-generated random number to begin the selection. A replacement list of six households was included if some households refused to participate in the survey or remained unavailable despite attempts to reach them.

Selection of Individuals

For the household questionnaire, the interviewers identified a resident adult man or woman aged 18 or older who was knowledgeable about the household, obtained written informed consent, and then administered the household questionnaire. For the individual questionnaire with women, all women aged 15–49 were selected for interviews. In every third household, the husband/partner of the woman was selected for an interview. In cases where there was more than one woman in union within a household, the interviewer randomly selected one husband/partner. If the woman was 15–17 years of age, was not married and did not have children, parental permission and minor assent were obtained before they were interviewed.

Final Sample Obtained

The final survey sample comprised 3,148 households, 785 men, and 3,476 women for a total of 4,261 respondents and 7,409 questionnaires. These numbers were well within the necessary range given that the sample calculation assumed a 10% refusal rate at the household level and 5% at the individual level. Among households with eligible respondents available when the field team was in their community, less than 1% refused to participate.

Data Collection and Analysis

Data Collection Tools

The household questionnaire explored household characteristics such as asset ownership and a roster of all bed nets in use. Both women's and men's questionnaires included modules assessing net use, care, and disposal; perceptions of health services; and ideational factors including knowledge, perceived severity, perceived vulnerability, perceived efficacy of prescribed responses, attitudes, perceived self-efficacy, norms, social interactions and influence, and emotional response related to malaria behaviors. Both questionnaires also explored the recall of or participation in malaria-related communication interventions. The women's questionnaires also explored antenatal care (ANC) and receipt of IPTp-SP among women who had had a live birth within the past two years, as well as care-seeking and receipt of appropriate treatment for children who had a fever in the past two weeks. Lastly, because intention is an important precursor to behaviors in many health behavior change theories, women's questionnaires explored intention to seek ANC and to take IPTp in a future pregnancy, and the intention to seek care for a child under five with fever in the future. The MBS instruments, along with guides and templates, can be found at www.malariabehaviorsurvey.org.

Data Collection

Breakthrough ACTION, led by the Johns Hopkins Center for Communication Programs, worked through The Mentor Initiative, a United Kingdom-based research firm with extensive experience in Angola.

Breakthrough ACTION created digital versions of the questionnaires using Kobo. The NMCP, Mentor staff, and Breakthrough ACTION staff co-facilitated a five-day training for data collection, with an additional day to pilot the study in the field. Six teams of three data collectors and their respective supervisors conducted the fieldwork from February to April 2023. During this time, Breakthrough ACTION as well as NMCP staff visited the teams in the field to monitor their progress and provide needed support. Breakthrough ACTION staff as well as data supervisors reviewed data on a daily basis. Breakthrough ACTION, NMCP, and PMI all met weekly to discuss field work progress.

Data Analysis Procedures

Structural factors assessed in the analyses included gender, educational level, wealth index, access to health facilities, and urban/rural residence. The ideational factors explored included respondents' malaria knowledge, attitudes, risk perceptions (i.e., severity and susceptibility), response efficacy and self-efficacy, community or gender attitudes, perceptions of service delivery (community and facility-based workers as well as health facilities in general), and discussion regarding malaria.

Ideational factors are analyzed as composite variables that are assessed using a battery of related questions to capture the varied dimensions of the specific ideational construct along a scale. Complete knowledge and self-efficacy were defined as correctly responding to all relevant questions. For questions assessing attitudes or perceptions, variables were recoded as +1 for a positive perception or attitude, –1 for lack of a positive perception or attitude, and 0 for "don't know" responses. Scores were then summed to obtain an index of perceptions and attitudes. Respondents with a score greater than zero were considered to have favorable perceptions or attitudes. All questions that make up the composite variables as well as their percentage in the population can be seen in the tables in the annex. IPC was coded as "yes" if the respondent engaged in malaria-related discussions with a spouse/partner or family/friends. All ideational factors are further defined in the MBS glossary located in the annex.

Key behavioral outcomes were defined as follows:

- Use of available nets in the home the previous night by household members.
- Consistent use of a net by respondents every night of the week.
- Care of nets by tying or folding them up when not in use and employing appropriate washing methods.
- Attendance at ANC among women who were pregnant in the past 2 years.
- Uptake of IPTp among women who were pregnant in the past 2 years.
- Intention to attend ANC early among women who plan a future pregnancy
- Intention to take IPTp among women who plan a future pregnancy
- Prompt and appropriate care-seeking for children who had had a fever in the past 2 weeks, defined as seeking treatment the same day or day following the onset of fever at a health facility or from a CHW.

Cross-tabulations and multivariable regression analyses were used to examine relationships between structural factors, ideational factors, and outcomes of interest. Please note we use the term "structural factors" rather than "sociodemographic characteristics" because epidemiological analyses typically transmute relational and structural factors (e.g., social class, wealth, education, access to resources, and gender) into individual-level factors (referred to as background or sociodemographic characteristics), which places the onus on the individual rather than on the policies and systems that determine who has access to what and under what circumstances. SBC programming must address the structures that create disadvantages for some and privileges for others. An initial step is to properly name these factors.

This study analyzed descriptive statistics to examine structural, ideational, and behavioral covariates. It provides descriptive results as weighted population estimates. All confidence intervals (CI's) were calculated at the 95% level and adjusted for the clustered survey design using the Taylor linearization approach. Bivariate associations between the primary outcomes of interest and key explanatory variables of interest were first examined using bivariate logistic regressions and were included in multivariate models only when found to be significantly associated ($p<0.2$) with the outcome at the bivariate (unadjusted) level. Multivariate regression models to assess the association of ideational covariates, controlling for structural factors such as region and residence, and notes variables of significance ($p\leq0.05$) are noted in this report. Goodness of model fit was assessed using Hosmer–Lemeshow goodness-of-fit test. Such multivariate regression models are useful to identify potentially modifiable variables that programs could prioritize to change behavioral outcomes. These results are cross-sectional, which yields evidence of correlations or associations, but precludes causal conclusions. This study used Stata SE 16 (Stata Corporation) to compile results and perform analysis.

Research Ethics

The institutional review boards at the Johns Hopkins Bloomberg School of Public Health (Institutional Review Board No.: 21221) and the Comitê de Ética do Ministério da Saúde (4/C.E.M.S/2023) approved study protocols and tools. All project staff received training on approved study protocols and research ethics. All study participants provided signed informed consent after trained data collectors explained the purpose of the survey, the types of questions that would be asked, the potential risks associated with participating in the survey, and the actions the study team would take to protect the confidentiality of participants. In addition, data collectors explained that participants did not have to participate in the study, that they could decide at any time to discontinue their interview, and that they did not need to answer any questions they did not want to. Staff used nicknames when possible, instead of legal names, to protect the identity of participants. They destroyed the household listing sheet in a given EA when data collection in the corresponding cluster finished. They also kept signed consent/assent forms in secure locations at all times.

Results

The following sections show the survey results: sample description, cross-cutting ideational factors, case management for fever in children under five, MIP, ITNs, and media consumption and exposure to malaria messages. The body of the report only provides statistically significant differences at the $p<0.05$ level between subgroups, while it reports all subgroup comparisons in the corresponding tables. The multivariable analyses only discuss statistically significant results at the $p<0.05$ level, but the corresponding tables provide all results.

Sample Description

Household Characteristics

Table 1 presents a summary of the household characteristics by province. Surveyed households had a median of five residents and two sleeping rooms. While most households had finished roofs (83%), fewer households had finished walls (36%) or floors (32%), and 55% of households had electricity. Regarding access to health care services, just over one-half (57%) of households were close to a public health facility (defined as located five kilometers or less, less than 30 minutes on foot, or less than 10 minutes by car) or a pharmacy (47%) and less than one-third (29%) were close to a private health facility. Nearly two-thirds of the study population lived in urban areas (63%) and just over one-third (37%) in rural areas, reflecting the highly urbanized population of the country. Many participants owned land (72%), but less than a fifth of respondents owned a motorcycle (15%), livestock (19%), or smartphones (12%). A third of respondents had access to a radio (35%), and around one-half had access to simple mobile phones (51%) or televisions (46%).

Table 1: Household Characteristics, by Province

Percent distribution of selected household characteristics by province, Angola 2023

Characteristic	Cuanza Norte (N=1,229)	Lunda Sul (N=838)	Zaire (N=1,081)	Total (N=3,148)
Average size of households	5.3	4.6	5.3	5.1
Average number of sleeping rooms	2.3	2.1	2.4	2.3
% of households with electricity	37.0	65.2	68.8	55.4
% of households near* a public health facility	39.1	62.5	73.5	57.1
% of households near* a private health facility	11.6	47.4	33.6	28.7
% of households near* a pharmacy	25.6	49.9	68.1	46.7
% of households with finished floors	13.2	44.6	62.7	38.6
% of households with finished roofs	93.6	87.9	96.9	93.2
% of households with finished walls	22.7	40.8	46.9	35.8

Note: *Near is defined as located within five kilometers, less than 30 minutes on foot, or less than 10 minutes by car

Population Characteristics

The age and sex distribution of the members of the surveyed households presented in Figure 4 below shows a triangular population pyramid that reflects Angola's high total fertility rate (6.2 in the 2015–2016 DHS), growing population, and a high child-dependency ratio (ratio of children aged 0 to 14 years to adults aged 15 to 64 years) with dependence of the younger population on working-age individuals.

Table 2 presents a summary of the sociodemographic characteristics of the surveyed household members. Slightly more members of the surveyed households were women (54%), and a majority were less than 18 years old (71%). Among the survey respondents specifically, most were female (85%) and aged 25 years or older (67%), reflecting the MBS sampling procedure to recruit mostly women of reproductive age. Most survey respondents were Christian (85%) and married (66%) and had not completed primary school (49%).

Table 2: Sociodemographic Characteristics of Household Members

Percent distribution of sociodemographic characteristics of household members by province, Angola 2023

Characteristic	Cuanza Norte (N=6,529)	Lunda Sul (N=3,793)	Zaire (N=5,358)	Total (N=15,680)
Sex* **				
Female	52.1	55.3	52.8	53.2
Male	47.9	44.7	47.2	46.8
Residence **				
Rural	51.8	49.5	29.1	41.5
Urban	48.2	50.5	70.9	58.5
Age* **				
0–4	16.5	11.8	14.5	14.5
5–17	40.3	35.6	38.2	38.3
18 and above	43.2	52.6	47.3	47.2

Notas: * p<0.05; ** p<0.01; ***p<0.001

Supplemental Information

Additional data tables related to this section are presented in the annex.

- Table A.1.1 Household Characteristics
- Table A.1.2 Household Assets and Wealth Quintile
- Table A.1.3 Sociodemographic Characteristics of Household Members
- Table A.1.4 Sociodemographic Characteristics of Respondents

Cross-Cutting Ideational Factors

This section highlights cross-cutting ideational factors related to malaria in Angola. This includes basic knowledge of malaria (transmission, symptoms, and prevention), perceived risk (i.e., severity and susceptibility) of malaria, IPC regarding malaria, perceptions of health workers (CHWs and workers at health facilities), and equitable gender attitudes related to malaria. All of the cross-cutting results are from the individual questionnaires, and these were administered to both women and men.

Table 3 presents a summary of the rates of the cross-cutting ideational factors among individual respondents. More than one-half (55%) had a basic knowledge of malaria (defined as knowing that fever is the main symptom, that mosquitoes cause malaria, and listing at least one major malaria prevention measure), but the percentages were slightly lower among adolescents aged 15–24 (52%), those who had no formal education (51%), and respondents in Cuanza Norte (46%). This knowledge was slightly higher among respondents in Lunda Sul (69%).

Just over one-half of participants (54%) perceived that they were susceptible to malaria, and this was higher among respondents in Zaire (63%) than Lunda Sul (34%). This varied by age, with the youngest (50%) and the oldest (44%) having lower perceptions of malaria susceptibility than the middle age groups (60%). Perceived susceptibility was lower among those who had at least completed primary education (45%) compared to those with secondary education or higher (63%).

In contrast, fewer respondents (38%) perceived that malaria was severe, while this increased among higher wealth quintiles (49% in the fourth quintile and 39% in the fifth), and among higher education level (ranging from 33% for those with no primary education to 43% among those with secondary education or higher). Perceived severity had statistically significant differences among age groups with the youngest respondents aged 15–24 having higher perceptions of severity (41%). Lastly, respondents in Zaire (41%) had higher perceptions of malaria severity than those in Lunda Sul (34%).

Among respondents with partners, partner communication about malaria was low, with less than one-fifth (16%) having discussed malaria with their partner in the previous six months. This increased with increases in wealth quintile (lowest: 14%, highest: 24%) and education (no primary education: 12%, secondary education or higher: 25%), and was highest among respondents in Zaire (22%). Though only slight, statistically significant differences were observed between age groups, with respondents aged 15–34 having higher IPC about malaria (17%) than those aged 35+ (15%).

IPC with family and friends about malaria in the previous six months among all respondents was also low (14%) and showed similar patterns among subgroups such as IPC among partners, including increases with increasing wealth quintile (lowest: 8%, highest: 22%), education (no primary education: 8%, secondary education or higher: 24%) and highest among respondents in Zaire (19%). Findings also showed statistically significant differences among provinces with respondents from Zaire (19%) compared to Cuanza Norte (10%) and, among the sexes, with men (22%) reporting more IPC with friends and family than women (12%).

Many respondents (86%) had favorable perceptions regarding facility-based health workers, with statistically significant differences between residents of Lunda Sul (82%) and Zaire (93%). There is also a noted significant difference between urban and rural residence, with urban residents (87%) having higher positive perceptions than rural residents (84%).

A majority of respondents (83%) also perceived equitable gender attitudes related to malaria, with variation seen between the lowest (77%) and highest (86%) quintile as well as between Cuanza Norte (73%) and Zaire (93%) provinces. Additional increases in equitable gender attitudes can be seen with increases in education (primary school not completed: 79%, secondary education or higher: 90%) and wealth quintile (lowest: 78%, highest 86%).

Supplemental Information

Additional data tables related to this section are presented in the annex.

- Table A.2.1: Correct Knowledge of Malaria
- Table A.2.2: Perceived Susceptibility to Malaria
- Table A.2.3: Perceived Severity of Malaria
- Table A.2.4: Interpersonal Communication Regarding Malaria
- Table A.2.5: Perceptions Regarding Facility-Based Health Workers
- Table A.2.6: Gender Attitudes Related to Malaria

Table 3: Summary of Cross-Cutting Ideational Factors

Percentage of respondents who reported cross-cutting ideational factors related to malaria, by sociodemographic characteristics, Angola 2023

Characteristic	Basic knowledge about malaria (N=4,261)	Perceived susceptibility to malaria (N=4,261)	Perceived severity of malaria (N=4,261)	Reported IPC about malaria with spouse or partner (N=2,865)	Reported IPC about malaria with friends/family (N=4,261)	Favorable perceptions of facility-based health workers (N=4,261)	Perceived equitable gender attitudes related to malaria prevention and treatment measures (N=4,261)
Total (%)	**55.1**	**54.2**	**37.8**	**16.3**	**13.5**	**85.7**	**82.7**
Province	***	***	**	***	***	***	***
Cuanza Norte	46.1	53.1	37.6	13.6	9.6	81.6	73
Lunda Sul	69.4	45.8	34.3	13.6	11.6	82.5	82.8
Zaire	52.8	62.6	41.1	21.7	19.3	92.9	93
Sex				***	***		
Female	54.9	53.3	38.4	14.3	12.1	85.5	82.7
Male	56.4	60	34.5	25.4	22.2	86.9	82.6
Age group	*	**	*	*	***		
15–24	51.6	50.1	41.3	16.7	11.9	86.7	83.9
25–34	62.1	59.9	35.9	17.3	15.4	85.7	83.5
35–44	51.2	59.7	35.9	15.4	12.5	82.9	78.9
≥45	55.7	43.5	36	14.8	15.2	87.8	83.7
Residence						*	
Urban	53.6	51.8	38.2	15.5	13.8	86.7	84
Rural	57.7	58.2	37.1	17.5	12.9	84.1	80.4
Education	***	***	***	***	***		***

Primary school not completed	50.5	54.7	32.6	11.8	7.5	83.5	79.2
Primary education	56	45.2	42.2	16.5	14.5	87	82.4
≥ Secondary education	63.2	63.2	43.2	25.3	24.1	88.7	89.6
Wealth quintile			***	***	***		***
Lowest	53.3	55.6	33.8	14	8.2	79.3	77.5
Second	50.3	56.4	28.9	12.4	6.7	84.4	79.8
Middle	55.6	52.6	37.8	13.9	14.1	88.7	82.3
Fourth	59	49.2	48.5	16.7	15.6	87.9	87.1
Highest	56.7	57.5	39	23.6	21.8	87.8	85.9
Notes: *p<0.05; **p<0.01; ***p<0.001.							

Malaria Case Management for Children Under Five Years Old

Behaviors and Intentions at a Glance	
	Seventy-five percent of caregivers of children under five with fever sought prompt and appropriate care the same day as onset of a fever or the next day from a health facility or from a CHW first.
	Significant ideational factors: correct comprehensive knowledge of malaria care and treatment and perceptions about availability of malaria commodities at health facilities

This section describes the ideational factors related to malaria case management for children under five with descriptive analyses and logistic regression, as well as the prevalence of care-seeking behavior. Ideational factors related to malaria care-seeking and treatment explored in the MBS include knowledge, favorable attitudes, perceived response efficacy, perceived self-efficacy, perceived supportive community norms, perceived equitable gender attitudes, favorable perceptions of health workers, involvement in decision-making, and IPC. The specific **case management behaviors** that were explored included **any care-seeking, appropriate** (in a health facility or from a CHW) care-seeking, and **prompt** (same day as the onset of fever or next day) care-seeking. The assessed outcomes included malaria testing, confirmed cases of malaria, and the proportion of confirmed malaria cases given ACT.

Ideational Variables Linked with Care-Seeking

Table 4 presents a summary of ideational factors related to case management for children under five years old. Less than one-half of respondents (42%) had correct comprehensive knowledge of malaria care-seeking and treatment, which included knowing when to seek care, where to seek care, that ACTs are the best medication for malaria, and that a test is the only way to diagnose malaria. Correct knowledge was higher among respondents in Lunda Sul (50%) and those with secondary education or higher (53%) and highest wealth quintile (50%), and lower in Cuanza Norte (30%) and those in the lowest wealth quintile (30%). Male respondents (48%) had higher knowledge than female respondents (42%). In-depth analyses showed that while the majority (>80%) of respondents knew when and where to seek care and that a blood test is the best way to detect malaria, the question respondents most frequently got incorrect was identifying ACTs as the medicine to treat malaria (55%), with 15% of respondents identifying paracetamol and 12% identifying SP as medicines used to treat malaria.

Two thirds of participants (69%) had favorable attitudes related to care-seeking and treatment. The rates were highest among respondents in Zaire (73%) and Lunda Sul (70%), and lower among participants in Cuanza Norte (64%). Favorable attitudes were less frequent among those who had not completed primary school (50%) or were in the lowest wealth quintile (57%), compared to those in the highest wealth quintile (74%). Statistically significant differences in favorable attitudes were also noted among urban respondents (71%) compared to rural respondents (64%).

More than one-half of participants (58%) had favorable perceptions of response efficacy of malaria testing, with some statistically significant variations among subgroups. This survey found differences by province (Lunda Sul: 68%, Cuanza Norte: 51%), education level (primary: 55%, secondary: 64%) and wealth quintile (lowest: 47%, fourth: 66%). Prevalent negative perceptions of the response efficacy of

malaria testing included the perception that respondents still take malaria medicine regardless of the malaria test result (52%), and that they as parents could diagnose malaria themselves (58%).

Favorable perception of response efficacy of malaria treatment was low (44%). Response efficacy of malaria treatment was highest among those in the fourth wealth quintile (49%) or those with secondary education or higher (48%), and those in Zaire (50%). It was lowest among respondents from Cuanza Norte (37%) and those in the lowest wealth quintile (31%) or those who had not completed primary education (41%).

Almost three quarters (74%) of participants perceived self-efficacy to seek testing and treatment for their child with fever. Male respondents (84%) and respondents in the lowest wealth quintile (83%) had higher perceptions of their ability to complete all aspects of care-seeking, while those in the highest wealth quintile (66%) and those in Zaire (66%) had lower perceptions.

Regarding community descriptive norms, almost three quarters of participants (67%) perceived that at least one-half of their community sought care and treatment for a child with fever, and this was greater in Lunda Sul (72%), Zaire (70%), and among those in the highest wealth quintile (73%). This norm, however, was lower among those in the lowest two wealth quintiles (63%) and participants from Cuanza Norte (60%).

Two thirds of respondents (69%) had equitable gender attitudes related to malaria treatment. This varied by province (Cuanza Norte: 58%, Zaire: 76%), education level (primary school not completed: 65%, secondary education or higher: 77%) and wealth quintile (lowest: 69%, highest: 73%). Of note, respondents said female children would be prioritized for malaria medicine more often (31%) than male children (24%) when there was not enough money.

More than one-half of respondents (56%) had favorable perceptions of health facilities with regard to the provision of malaria care, which was higher among respondents in the lower wealth quintiles (lowest: 58%, second lowest: 62%) and lower among higher wealth quintiles (50%) and Cuanza Norte (47%). Results also showed differences among residency (urban: 51%, rural: 63%). Participants had higher favorable perceptions of health care workers themselves (78%), following similar patterns by province (Zaire: 85%, Lunda Sul: 75%, Cuanza Norte: 73%), and favorable perceptions were highest among those with secondary education or higher (83%) and lower among those in the lowest wealth quintiles (69%). Statistically significant differences also exist among age groups (45+: 82%, 15–24: 76%) and residence (urban: 80%, rural: 75%).

Over one-half of all respondents engaged in decision-making related to malaria care-seeking and treatment. Specifically, 66% of all respondents with partners noted that they made the decision alone or jointly with their partners to go to the health facility when a child had a fever. The percentage varied significantly between sexes (men: 78%, women: 64%), and was highest in Lunda Sul (77%) and among those with secondary education or higher (72%). Similarly, 60% of all respondents with partners noted that they made the decision alone or jointly with their partners to purchase medicine when a child had a fever. Male respondents (78%) again reported significantly higher rates of participation in decision-making, as did participants from Lunda Sul (79%) and those with a higher education (69%), but lower rates were seen among women (56%) and participants in Zaire (43%).

Table 4. Summary of Ideational Variables Related to Fever Case Management for Children Under Five, by Province											
Percentage of respondents who report ideational factors regarding malaria care-seeking and treatment, by sociodemographic characteristics, Angola 2023 (N=4,261)											
Characteristic	Comprehensive knowledge of malaria care-seeking and treatment	Favorable attitudes toward care-seeking and treatment	Perceived response efficacy of malaria testing	Perceived response efficacy of malaria treatment	Perceived self-efficacy for malaria testing and treatment	Perceived supportive descriptive community norms regarding malaria testing and treatment	Perceived equitable gender attitudes related to malaria treatment	Favorable perceptions of health facilities regarding care-seeking and treatment	Favorable perceptions of facility-based health workers regarding care-seeking and treatment	Involved in decision to go to the health facility when child has malaria	Involved in decision to purchase medicine when child is sick with fever
Total (%)	**42.1**	**68.6**	**58.1**	**43.6**	**73.6**	**66.9**	**69.3**	**55.6**	**77.6**	**66.2**	**59.9**
Province	***	***	***	***	**	***	***	***	***	***	***
Cuanza Norte	30.3	63.5	51.1	37.1	77	59.5	58	46.5	73.1	64.2	57.8
Lunda Sul	50.1	70.3	67.7	45.1	78.2	72.1	75.3	61.4	75	77.2	78.6
Zaire	48.2	72.9	57.4	49.5	66	70.4	76.4	60.7	84.9	57.4	43.4
Sex	*				***					***	***
Female	41.2	68.4	57.5	43.6	72	66.3	69.2	55.4	77.4	63.5	55.8
Male	47.7	70	61.7	43.8	83.6	70.3	69.5	57.3	79.2	78.4	77.8
Age group	**								*		*
15–24	37	69	56.9	40.9	71.6	66.8	70.2	51.9	76.4	68.9	55.7
25–34	49.8	68.6	61.8	47.7	77.7	67	69	60.3	76	66.3	60.4
35–44	39.8	65.3	54.6	41.2	72.4	64.5	65.2	56.1	79.5	63.2	58.8
≥45	42.9	73.3	58.8	46.1	72.1	70.6	74.2	54.7	81.9	66.4	69.1
Residence		*						*	*		
Urban	42.7	71.4	59.5	44.9	71.8	68.8	70.1	50.9	79.5	66.5	58.9
Rural	41.1	64.1	55.8	41.5	76.6	63.7	67.9	63.4	74.5	65.9	61.5

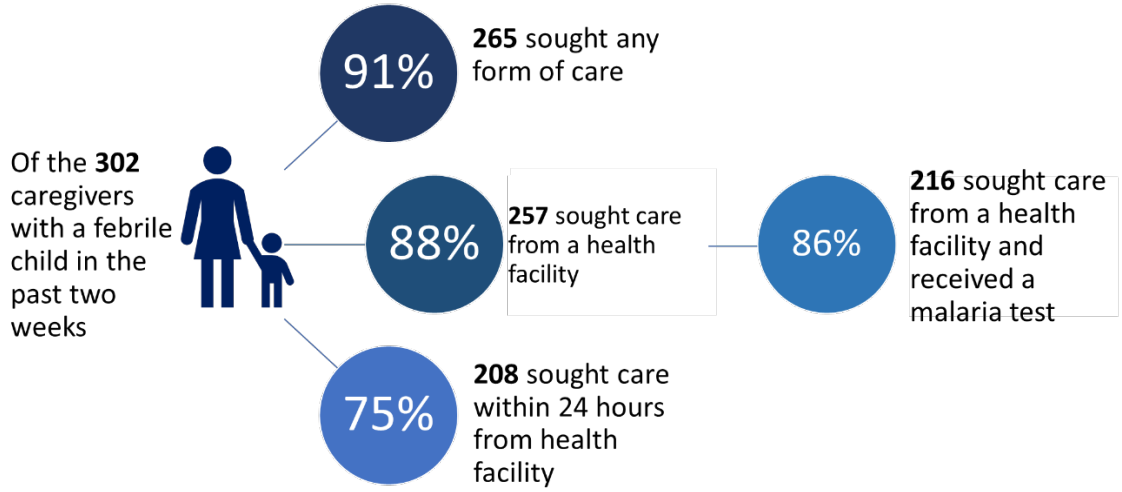
Education	***	***	*	*			***	**		***	**
Primary school not completed	35.4	65.6	57.1	40.8	74.4	65.6	65.3	59.1	75	62.8	59
Primary	44.3	69	54.7	45.4	70.8	66.1	69.3	55.1	77.5	67.3	52.3
≥ Secondary	52.9	74.1	63.6	47.4	75.2	70.1	77.1	49.3	82.9	71.9	69.3
Wealth quintile	***	***	***	***	***	*	***	***	***		
Lowest	29.7	56.6	46.5	30.8	82.7	63.3	69.3	58.1	68.7	62	59.1
Second	38.8	70.3	61	46.7	79.7	62.7	61.9	61.9	80.2	68	65
Middle	46.4	67.8	57.2	44	73.8	66.7	68.6	60	80	63.2	61.1
Fourth	44.9	74.2	65.9	48.9	66.7	68.4	73.1	48.9	80.7	67.8	54.9
Highest	50.1	73.7	59.4	47.3	66.3	72.5	72.6	50.2	78.6	69.4	59.4
Notes: *p<0.05; **p<0.01; ***p<0.001											

Care-Seeking Behaviors for Febrile Children Under Five

Figure 5 below illustrates the care-seeking behaviors of caregivers who had a febrile child in the two weeks preceding the survey. Female respondents who were caregivers of children under five (N=1,105) were asked about malaria case management behaviors and outcomes. A quarter of caregivers (29%) noted that at least one of their children under five had an episode of fever in the two weeks preceding the survey (N=302), while this was lower among respondents from Lunda Sul (25%). Among caregivers who reported a recent episode of fever among their children under five, 91% of them sought care for the fever, and 88% of caregivers with febrile children under five practiced appropriate care-seeking (defined as seeking care from a health facility or from a CHW/community and health development agent [ADECOS] as a first recourse). In addition, many caregivers with febrile children under five (78%) practiced prompt (same day as fever onset or the next day) care-seeking, again with minimal significant variation among subgroups. Finally, 75% of caregivers with a febrile child under five sought both prompt and appropriate care, which includes both care-seeking within one day of the onset of the child's fever from a health facility or from a CHW first and the recommended behavior.

Among caregivers who did not seek care for their child with fever, reasons cited included transportation cost (18%), lack of time to go to the facility (11%), and self-treatment of malaria (11%).

Figure 5: Care-seeking Behaviors for Febrile Children, MBS Angola 2023



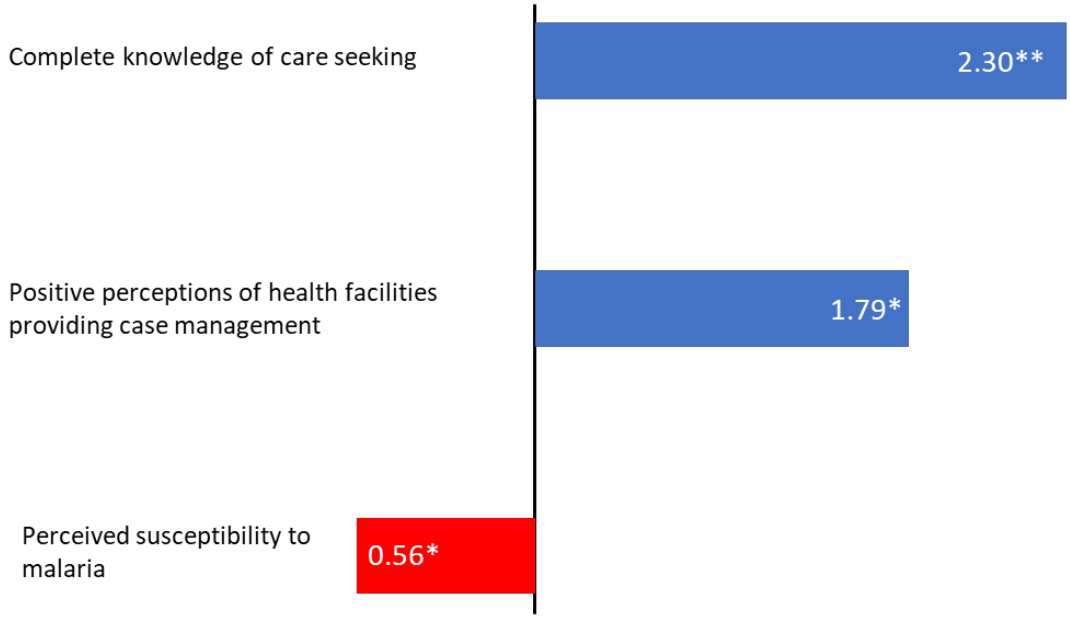
Among caregivers who reported a recent episode of fever in their children under five and sought care for them, 86% reported that their child was tested for malaria. Among caregivers who reported that their child was tested for malaria, 68% reported that the test result was positive. In addition, among respondents reporting a positive malaria test for their febrile child, two-thirds (60%) were reportedly given an ACT, caregivers in Zaire (78%) and in higher wealth quintiles (fourth: 85%, highest: 75%) but the rate was lower among caregivers with no primary education (47%), those in Cuanza Norte (36%) and the youngest caregivers (aged 15–24: 49%). Approximately 76% of caregivers who reportedly received an ACT noted that the child was given an ACT promptly (the same or next day).

Logistic Regression Analysis

This study conducted a logistic regression analysis to explore the factors associated with prompt and appropriate care-seeking for children under five who had a fever in the two weeks prior to the survey. Figure 6 shows statistically significant factors and Table 5 includes all results of the model.

Adjusting for structural and related ideational factors, the significant ideational factors associated with prompt and appropriate care-seeking were correct comprehensive knowledge of malaria care and treatment [aOR: 2.30, 95% confidence interval (95% CI): 1.27–4.17] and positive perceptions of health facilities providing malaria case management [aOR: 1.79, 95% CI: 1.05–3.03]. Perception of susceptibility of malaria was inversely associated with prompt and appropriate care-seeking [aOR: 0.56, 95% CI: 0.32–0.96]. Of note, caregivers' sociodemographic characteristics were not associated with prompt and appropriate care-seeking for a febrile child under five in the two weeks prior to the survey.

Figure 6. *Factors Significantly Associated with Prompt and Appropriate Care-Seeking and their Adjusted Odds Ratios, MBS Angola 2023 (N=302)*



Significance: * p<0.05; ** p<0.01; ***p≤0.001

Table 5. Logistic Regression Exploring Factors Associated with Prompt and Appropriate Care-Seeking for Fever in Children Under Five Years in the Past Two Weeks			
Characteristic	**Percentage**	**aOR**	**95% CI**
Age group			
15–24 (Reference)	126 (81.2)	1.00	
25–34	111 (68.5)	1.01	0.55–1.84
35+	65 (66.8)	0.61	0.30–1.24
Education			
Primary school not completed (reference)	135 (67.9)	1.00	1.00
Primary	167 (78.9)	1.08	1.08
Province			
Cuanza Norte (Reference)	109 (77.1)	1.00	
Lunda Sul	49 (81.9)	0.45	0.20–1.06
Zaire	144 (71.0)	0.57	0.28–1.17
Socioeconomic status			
Lowest, second and middle (Reference)	162 (77.4)	1.00	
Fourth and highest	140 (71.9)	0.79	0.42–1.48
Residence			
Urban (Reference)	215 (79.9)	1.00	
Rural	87 (66.5)	0.92	0.52–1.62
Perception of susceptibility to malaria			
No (Reference)	132 (82.9)	1.00	
Yes	170 (66.3)	0.56*	0.32–0.96
Demonstrated comprehensive knowledge of seeking care for malaria			
No (Reference)	194 (71.2)	1.00	
Yes	108 (82.8)	2.30**	1.27–4.17
Recall of campaign slogan			
No (Reference)	249 (73.5)	1.00	
Yes	53 (80.4)	1.29	0.60–2.80
Favorable attitudes toward seeking care for malaria			
No (Reference)	81 (73.9)	1.00	
Yes	221 (75.7)	1.06	0.56–2.01
Positive perception of response efficacy toward malaria testing			
No (Reference)	98 (74.2)	1.00	
Yes	204 (75.7)	1.01	0.55–1.85
Seeking care is a community norm			

No (Reference)	98 (71.5)	1.00	
Yes	204 (76.5)	0.72	0.40–1.29
Positive perceptions of health facilities providing case management			
No (Reference)	131 (75.2)	1.00	
Yes	171 (75.1)	1.79*	1.05–3.03
Perceptions of equitable gender attitudes related to malaria			
No (Reference)	49 (70.4)	1.00	
Yes	253 (76.5)	1.17	0.54–2.53
Age of the child in months			
<12 (Reference)	280 (73.7)	1.00	
12–23	22 (83.6)	1.46	0.49–4.32
Pseudo-R2	0.0753		
Number of observations	302		

Notes: *p<0.05; **p<0.01; ***P<0.001.
N refers to the frequency of respondents within each row of the group, while (%) refers to percentage of each row that reported the behavior or intention.

Supplemental Information

Detailed tables on the following indicators are presented in the annex.

- Table A.3.1: Knowledge of Malaria Care-Seeking and Treatment
- Table A.3.2: Attitudes Toward Malaria Care-Seeking and Treatment
- Table A.3.3: Perceived Response Efficacy of Malaria Testing
- Table A.3.4: Perceived Response Efficacy of Malaria Treatment
- Table A.3.5: Perceived Self-Efficacy for Malaria Testing and Treatment
- Table A.3.6: Gender Attitudes Related to Malaria Treatment
- Table A.3.7: Perceived Community Norms Regarding Malaria Testing and Treatment
- Table A.3.8: Perceptions of Health Facilities Regarding Malaria Testing and Treatment
- Table A.3.9: Perceptions of Facility-Based Health Workers Regarding Malaria Care-Seeking and Treatment
- Table A.3.10: Decision-Making for Malaria Care and Treatment
- Table A.3.11: Care-Seeking and Testing of Children with Fever in the Past Two Weeks
- Table A.3.12: Treatment of Children with Fever
- Table A.3.13: Logistic Regression Exploring Factors Associated with Prompt and Appropriate Care-Seeking for Fever in Children Under Five Years in the Past Two Weeks

Malaria in Pregnancy

Behaviors and Intentions at a Glance	
	Among women who reported being pregnant in the two years prior to the study, 46% attended ANC early, 68% attended four or more ANC visits, 65% received three or more doses of IPTp, and 66% received an ITN during pregnancy.
	Eighty percent of women intend to attend ANC at least four times in their next pregnancy, while 64% of women intend to attend ANC early. Significant ideational factors associated with either intention include comprehensive knowledge of ANC, favorable perceptions of health care workers, perceived self-efficacy to attend ANC, and perceived susceptibility.

This section describes the ideational factors related to MIP, the prevalence of MIP-related behaviors and intentions, as well as the associations between ideational factors and behavioral intentions using logistic regression. Ideational factors related to MIP explored in the MBS include knowledge, favorable attitudes, perceived severity, perceived response efficacy, perceived self-efficacy to attend ANC and receive IPTp-SP (or to support a pregnant partner to do so, for male respondents), perceived supportive community norms, perceived equitable gender attitudes, favorable perceptions of health workers, involvement in decision-making, and IPC. The MIP-related outcomes explored include ANC attendance and receipt of IPTp-SP among women who had a pregnancy in the two years prior to the survey. The specific behavioral intentions explored included intention to attend ANC or receive IPTp-SP in a future pregnancy among women who intended to have a future pregnancy.

Ideational Variables Linked with Antenatal Care Attendance and IPTp Use

Table 6 presents a summary of ideational factors related to MIP including ANC and IPTp. Only one-fifth of participants (20%) had comprehensive knowledge of ANC and IPTp, with the majority of the sample not knowing they should be going to ANC within the first three months of their pregnancy (72%). Knowledge of ANC/IPTp was higher among respondents in Zaire (30%), and those in the second lowest wealth quintile (26%). It was slightly lower among male respondents (11%). Results also showed statistically significant differences among education (primary school not completed: 19%, primary education: 24%) and residence (urban: 23%, rural: 17%). Most respondents (76%) perceived MIP as severe, with no statistically significant differences among subgroups.

Over two-thirds of respondents (69%) had favorable attitudes related to IPTp, which was notably higher in Lunda Sul (77%); secondary education or higher (74%); and were in the fourth wealth quintile (77%), while favorable attitudes were lower among respondents in the lowest wealth quintile (57%) and Cuanza Norte (64%).

Almost all respondents (93%) perceived IPTp to be efficacious, which was higher among those with secondary education (97%) and respondents from Zaire (98%). Findings also revealed statistically significant differences among wealth quintiles (lowest: 91%, highest: 96%).

Men's perceived self-efficacy to support their spouses to prevent MIP was high (85%), with no significant variation among subgroups. Women, however, had lower perceptions of complete self-efficacy to prevent MIP (67%), with differences noted between wealth quintiles (lowest: 71%, highest: 63%) and province (Lunda Sul: 70%, Zaire: 62%).

About one-half of all respondents perceived that at least four ANC visits (53%) or receipt of IPTp (50%) was the norm in their community. These showed variation by province, with respondents from Lunda Sul (ANC: 61%, IPTp: 58%) and higher wealth quintiles having higher perceptions of community norms (lowest ANC: 49%, IPTp: 48%, highest ANC: 62%, IPTp: 57%).

Only about one-fifth (20%) of respondents perceived that their community approved of IPTp. This varied by province (Lunda Sul: 17%, Zaire: 23%), age group (45+: 17%, 15–24: 22%), education (primary school not completed: 18%, secondary education or higher: 24%), and wealth quintile (middle: 15%, fourth: 24%).

Ideational Determinants at a Glance	
Highly Prevalent (≥ 80%)	
	Perceived response efficacy
	Perceived self-efficacy for men
	Perceive equitable gender norms
Less prevalent (≤40%)	
	Knowledge
	Perceived supportive community norms

Three quarters of respondents (75%) perceived equitable gender attitudes related to malaria, particularly among respondents in Zaire (88%) and those with greater education (82%), and those in the highest wealth quintile (85%). Respondents in the lowest wealth quintiles (56%) and from Zaire (60%) had lower perceptions of equitable gender attitudes.

More than one-half of respondents (60%) had positive perceptions of health care workers performing ANC services, which was lower among respondents in Cuanza Norte (52%) and those in the lowest wealth quintile (53%), while higher among respondents in the higher two wealth quintiles (fourth: 67%, highest: 68%), respondents with secondary education or higher (69%), and respondents from Zaire (66%).

More than one-half (62%) of respondents in partnerships and who had a previous pregnancy were involved in decision-making related to ANC, noting that decisions regarding ANC were made by themselves or jointly with their partners. The rate was lower among respondents who were in Zaire (53%), while notably higher amongst those with secondary education or higher (69%).

Less than one-half (49%) of all respondents with partners noted that they discussed ANC with their partners in the six months preceding the survey. This varied by province (Cuanza Norte: 40%, Lunda Sul: 47%, Zaire: 59%), was higher among respondents with greater education (66%), and increased with every increase in wealth quintile (lowest: 33%, highest: 62%). Results showed statistically significant differences among age groups (45+: 34%, 25–34: 55%).

Table 6. Summary of Ideational Variables Related to Malaria in Pregnancy													
Percentage of respondents who refer to ideational factors by sociodemographic characteristics, Angola 2023 (N=4,261)													
Characteristic	Knowledge of IPTp recommen-dations	Favorable attitudes toward IPTp	Perceived severity of MIP	Perceived response efficacy of IPTp	Perceived self-efficacy (by men) in relation to IPTp	Perceived self-efficacy in relation to IPTp	Perception that most women have ≥ four ANC visits	Perception that most women in their community take IPTp	Perception that the community approves of IPTp	Perception of equitable gender attitudes in relation to ANC	Favorable perceptions of health care workers and ANC	Involved in decision-making regarding ANC	Discussed attending ANC with spouse/partner
Total (%)	**20.7**	**69.4**	**75.7**	**92.8**	**84.5**	**66.6**	**53.3**	**50.4**	**19.6**	**75.2**	**60.2**	**61.7**	**48.8**
Province	***	***		***		***	***	***	***	***	***	***	***
Cuanza Norte	15.8	63.6	76.8	91	85	70.3	45.5	43.1	18.6	59.8	52	57.4	39.7
Lunda Sul	15.4	77.7	76.1	89.2	86.6	67.2	61.1	58	17.2	79.8	63.2	75.1	47.2
Zaire	30.7	68.5	74.1	98	80.8	62.2	55.2	51.8	22.8	88.1	66.4	52.7	59.3
Sex	***						**					***	
Female	22.3	69.2	75.7	92.6	N/A	66.6	53.8	50.4	19.6	75	60	61.1	47.3
Male	10.9	70.3	75.5	94.1	84.5	N/A	50.7	50.2	19.8	76.7	61.2	64.2	55.3
Age	***								*				***
15–24	22.9	67.8	75.2	94.2	89.3	69.1	49.1	48.2	22.2	72.9	58.3	59.9	52.7
25–34	22	72.9	79	95.8	87	73.2	57.3	52.2	18.3	80	65.1	61.8	55.1
35–44	18.5	67.2	76	91.7	79.9	60.4	55.1	50	18.7	73.9	57.2	60.6	44
≥45	15.7	69.5	69	84.3	85.1	49.4	53.2	53.2	17.1	73.1	59.3	67.3	33.6
Residence	*												
Urban	22.9	69.3	77.3	91.6	85.6	65.3	53.9	51.7	21.6	75.9	61.6	60.8	47.1
Rural	17.2	69.4	73.1	94.9	82.8	68.7	52.4	48.2	16.4	74.1	57.8	63.2	51.3
Education	***	*		***					***	***	**	**	***

None	19.7	67.5	75.5	89.1	83.7	63.9	53.9	49.7	17.5	70.9	56.2	58.6	36.8
Primary	23.8	68.5	76.3	95.5	81.8	66.7	44.8	45.6	19.8	77	59.6	63.1	55.2
≥ Secondary	19.4	73.9	75.4	97.2	86.8	72.6	61.7	57.1	23.7	81.8	68.6	67.4	66.3
Wealth quintile	**	***		*		***	***	**	***	***	***	**	***
Lowest	17	57.4	72.1	90.7	80.4	70.5	49.2	48.1	15.8	56.4	53.3	57.1	32.9
Second	26.1	69.1	79.1	89.6	85.2	65.4	55	49.1	21	75.4	54.5	65.4	39.6
Middle	20.4	71.2	76.4	90.6	89.3	64.8	50.3	48.3	15.3	81.7	57.1	63.9	48
Fourth	19.8	77.2	75.8	96.4	80.1	69.3	49.6	49	24	76.8	67	60.8	57.7
Highest	20.8	71.3	75.3	96.4	86.2	62.7	62.4	57.1	21.7	85	67.7	60.9	61.7
Notes: *p<0.05; **p<0.01; ***p<0.001.													

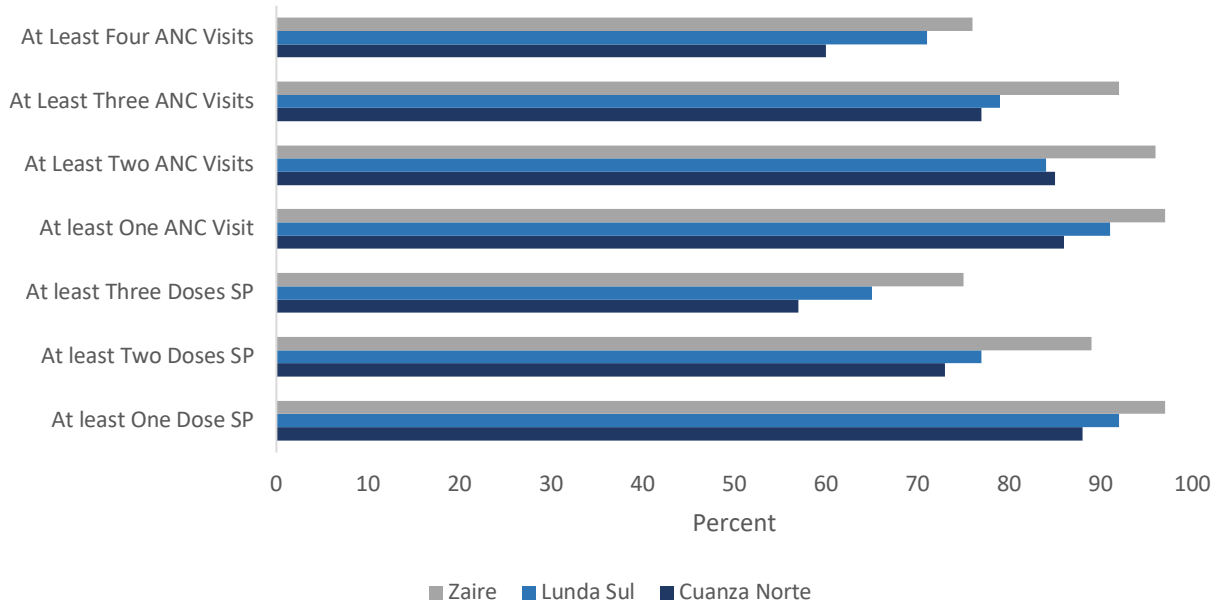
ANC Attendance and Intention to Attend ANC

Figure 7 shows past ANC behaviors including attendance at ANC visits and uptake of IPTp among respondents who had a pregnancy in the previous two years. About one-half (52%) of women with a recent pregnancy in the two years preceding the survey reported they attended their first ANC visit within the first three months of their pregnancy, with only 18% of women aged 45 and older doing so. The largest reported barrier to early ANC attendance was lack of time, with 27% of women listing this as the primary reason. Associated costs, including transportation and costs of surgical gloves (25%), distance to hospital (16%), and perceptions that hospitals would only allow ANC in the second trimester (9%) were also mentioned at lower rates. The majority (91%) of women with a pregnancy in the previous two years had attended at least one ANC visit in their last pregnancy, with this percentage being higher in Zaire (97%), and showed variation among educational levels (primary school not completed: 87%, secondary education or higher: 96%) and wealth quintile (lowest: 80%, highest: 96%).

A little over two-thirds (68%) of female respondents with a pregnancy in the previous two years noted that they attended at least four ANC visits in their last pregnancy, with variations by level of education (primary school not completed: 64%, secondary education or higher: 89%), wealth quintiles (lowest: 42%, highest: 85%), and province (Zaire: 76%). Two-thirds (65%) of women with a recent pregnancy noted that they received an ITN during ANC visits. Additionally, 62% of pregnant women who went to ANC in their first trimester received an ITN during the first trimester.

The majority (80%) of female respondents who plan to have another child in the future noted that they intend to attend at least four ANC visits in their next pregnancy. This was highest in Zaire (89%) and considerably lower among older age groups (15–24: 77%, 45+: 38%). Fewer than two-thirds of women (64%) intended to attend ANC within the first trimester of their next pregnancy.

Figure 7. Past Malaria-Related ANC Behavior by Province, MBS Angola 2023



IPTp Receipt and Intention to Use IPTp

The majority of women with a pregnancy within the two previous years (91%) reported that they took at least one dose of IPTp, while 80% reported taking at least two doses. However, less than two-thirds (65%) noted that they received at least three doses of IPTp (IPTp3). Rates for IPTp were higher among female respondents in Zaire (75%), those in higher wealth quintiles (79%), and those with higher levels of education (secondary or higher: 82%). Respondents in Cuanza Norte (57%), those without primary education (56%), those in the lowest wealth quintile (54%), and those aged 45 or older (43%) had lower rates of IPTp3 uptake.

Ninety-six percent of the women who planned to have a pregnancy in the future noted that they intended to get at least one dose of IPTp in their next pregnancy. However, this was much lower among females aged 45+ (47%).

Logistic Regression Analysis

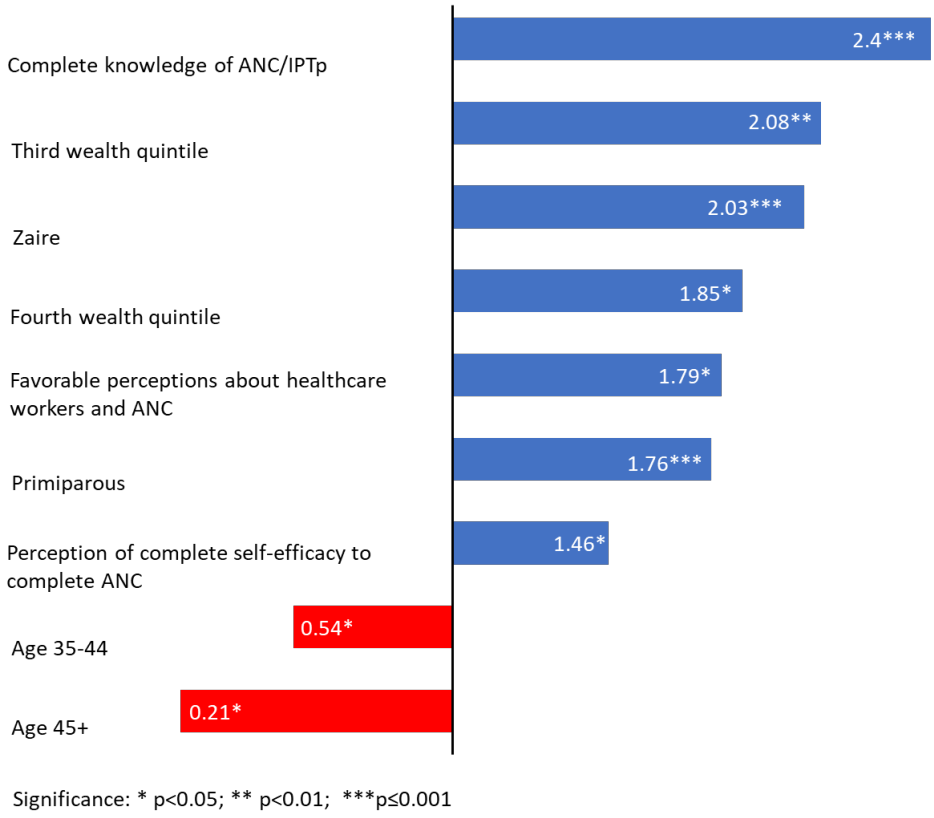
This study used logistic regression analysis to explore ideational factors related to intentions regarding MIP in a future pregnancy. The key outcomes explored for this regression analysis were the intention to attend ANC in the first trimester and the intention to attend at least four ANC visits. When working with ideational factors, temporality is a limitation in assessing past behavior such as previous ANC attendance with current ideational factors, so current intention to complete the behavior in the future is used instead. Intention to use IPTp-SP in a future pregnancy was not explored using logistic regression analysis because this intention was highly prevalent (96%).

This study estimated a multivariable logistic regression model for intention to attend four ANC visits in the future. Statistically significant factors are presented in Figure 8, and the full results of the model can be found in Table 7. Women with complete knowledge of ANC services had higher odds [aOR: 2.40, 95% CI: 1.56–3.69] of intention to complete four ANC visits compared to women who did not have complete knowledge. Additionally, women with favorable perceptions of health care workers with regard to ANC services had higher odds [aOR: 1.79, 95% CI: 1.36–2.37] of intending to complete four ANC visits than those who did not. Lastly, women with perceived self-efficacy to attend ANC also had higher odds [aOR: 1.46, 95% CI: 1.08–1.96] of ANC intention than those who did not.

Women's sociodemographic characteristics were also significantly associated with the intention to attend four ANC visits. For example, women from Zaire had higher odds [aOR: 2.03, 95% CI: 1.34–3.06] of intention to attend four ANC visits than those from Cuanza Norte. Wealth quintile was an important factor, with women from the second highest wealth quintile [aOR: 1.85, 95% CI: 1.16–2.95] and middle wealth quintile [aOR: 2.08, 95% CI: 1.33–3.27] having higher odds of ANC intention than women in the lowest wealth quintile. Women who had at least one previous pregnancy also had higher odds [aOR: 1.76, 95% CI: 1.26–2.47] than women who had not yet had a pregnancy. Lastly, there were statistically significant differences between age categories, with women aged 35+ [aOR: 0.51, 95% CI: 0.31–0.82] having lower odds of intention to attend four ANC visits than women aged 15–24. Exposure to a malaria message in the past six months was marginally significant (p=0.055) and women exposed to a malaria

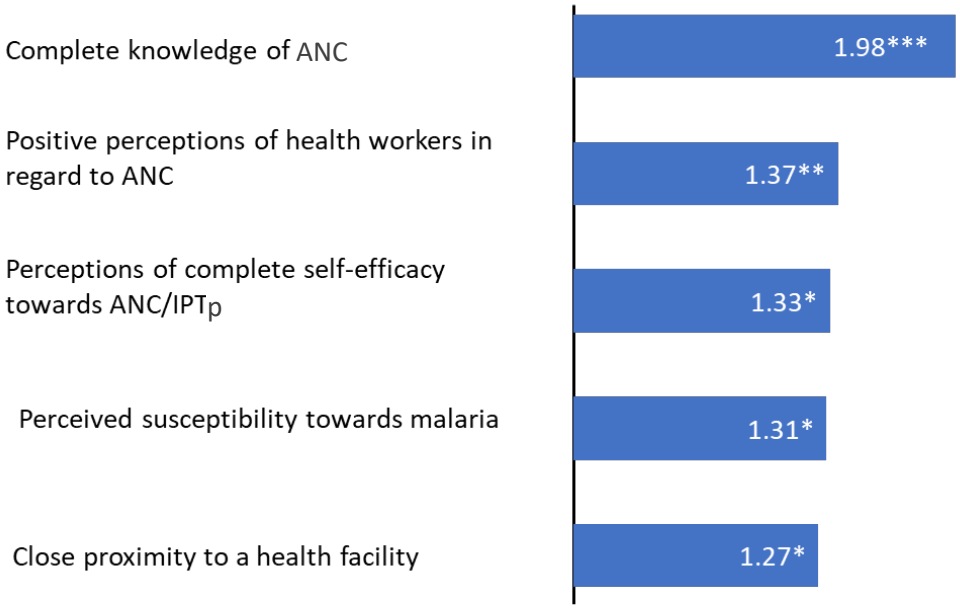
message in the past six months had higher odds [aOR: 1.4] of ANC intention than those who had not been exposed.

Figure 8. *Factors Significantly Associated with Intention to Attend ANC Four Times in Next Pregnancy and their Adjusted Odds Ratios, MBS Angola 2023 (N=1507)*



A multivariable logistic regression model was estimated for intention to attend their first ANC visit in their first trimester among women who intended to have a future pregnancy (N=1,507) . The factors that were statistically significantly associated are presented in Figure 9, while the full results of the model can be found in Table 8. Intention to attend ANC early had similarly positively associated ideational factors, but notably different structural associations. Specifically, women with complete knowledge of ANC services had greater odds [aOR: 1.98, 95% CI: 1.45–2.69] of intending to attend ANC early compared to women who did not have complete knowledge. Additionally, women with favorable perceptions of health care workers providing ANC services had higher odds [aOR: 1.37, 95% CI: 1.08–1.73] of intention to attend ANC earlier than those who did not. Women with perceptions of self-efficacy to complete all aspects of ANC also had higher odds [aOR: 1.33, 95% CI: 1.04–1.70] of early ANC intention than those who did not. Perceived susceptibility to malaria was associated with early ANC intention: women who perceived themselves and their family as susceptible to malaria had higher odds [aOR: 1.27, 95% CI: 1.01–1.61] than those who did not perceive susceptibility to malaria. The only structural factor associated with intention to attend ANC early was proximity to a health facility, with women having higher odds of early ANC intention [aOR: 1.31, 95% CI: 1.00–1.70] if they perceived they were close to a public health facility than women who did not.

Figure 9. *Factors Significantly Associated with the Intention to Attend ANC in First Trimester and their Adjusted Odds Ratios, MBS Angola 2023 (N=1507)*



Significance: * p<0.05; ** p<0.01; ***p≤0.001

Table 7. Logistic Regression Results Exploring Factors Associated with the Intention to Attend ANC Four Times			
Characteristic	**N (%)**	**aOR**	**95% CI**
Province			
Cuanza Norte (Reference)	1,582 (72.6)	1.00	
Lunda Sul	1,193 (80.0)	0.83	0.56–1.25
Zaire	1,486 (86.5)	2.03***	1.34–3.06
Age group			
15–24 (Reference)	1,393 (77.8)	1.00	
25-34	1,351 (85.6)	0.74	0.53–1.03
35+	965 (76.4)	0.51*	0.31–0.82
Religion			
Catholic (Reference)	1,608 (82.5)	1.00	
Protestant	2,096 (81.4)	0.80	0.57–1.12
Other	557 (72.4)	0.69	0.44–1.09
Primiparous			
No (Reference)	541 (79.1)	1.00	
Yes	3,720 (80.8)	1.76***	1.26–2.47
Residence			
Urban (Reference)	2,907 (81.9)	1.00	
Rural	1,354 (77.6)	0.83	0.63–1.11
Education level			
Primary education not completed (Reference)	2,078 (74.9)	1.00	
Primary	1,164 (79.8)	0.92	0.65–1.28
Secondary or higher	1,019 (87.0)	1.20	0.78–1.84
Wealth quintile			
Lowest (Reference)	872 (66.5)	1.00	
Second	858 (79.6)	1.34	0.88–2.06
Middle	843 (81.5)	2.08**	1.33–3.27
Fourth	828 (86.5)	1.85*	1.16–2.95
Highest	860 (82.3)	1.53	0.94–2.48
Close proximity to a health facility			
No (Reference)	1,590 (80.4)	1.00	
Yes	2,671 (80.4)	0.92	0.66–1.27
Perceived malaria as severe			
No (Reference)	2,723 (78.0)	1.00	
Yes	1,538 (84.2)	1.30	0.97–1.74

Perceived susceptibility to malaria			
No (Reference)	1,798 (77.0)	1.00	
Yes	2,463 (82.8)	1.11	0.84–1.48
IPC with partner or family/friends in the last six months			
No (Reference)	3,453 (81.1)	1.00	
Yes	808 (76.9)	0.90	0.62–1.32
Complete knowledge of ANC/IPTp			
No (Reference)	3,449 (77.6)	1.00	
Yes	812 (89.7)	2.40***	1.563.69
Complete knowledge about malaria			
No (Reference)	1,724 (76.3)	1.00	
Yes	2,537 (83.9)	0.92	0.69–1.24
Perception that IPTp and ANC are community norms			
No (Reference)	2,309 (79.3)	1.00	
Yes	1,952 (81.5)	1.07	0.81–1.41
Perception of complete self-efficacy in relation to ANC			
No (Reference)	1,166 (70.9)	1.00	
Yes	2,310 (83.7)	1.46*	1.08–1.96
Favorable perceptions about health care workers and ANC			
No (Reference)	1,790 (67.4)	1.00	
Yes	2,471 (87.4)	1.79***	1.36–2.37
Have seen or heard a malaria message in the last six months			
No (Reference)	3,074 (80.8)	1.00	
Yes	1,187 (79.4)	1.40	0.99–1.97
Pseudo-R2	0.1006		
Number of observations	1,507		

Notes: *p<0.05; **p<0.01; ***p<0.001.
N refers to the frequency of respondents within each row of the group, while (%) refers to percentage of each row that reported the behavior or intention.

Table 8. Logistic Regression Results Exploring Factors Associated with the Intention to Attend ANC in the First Trimester			
Characteristic	**N (%)**	**aOR**	**95% CI**
Province			
Cuanza Norte (Reference)	473 (59.5)	1	
Lunda Sul	384 (58.9)	0.74	0.52–1.05
Zaire	650 (71.0)	1.17	0.84–1.62
Age group			
15–24 (Reference)	854 (65.1)	1	
25–34	521 (64.4)	0.93	0.71–1.21
35+	132 (56.7)	1.02	0.67–1.55
Religion			
Catholic (Reference)	533 (62.7)	1	
Protestant	749 (62.7)	1.02	0.78–1.33
Other	225 (72.2)	1.24	0.85–1.80
Primiparous			
No (Reference)	369 (71.3)	1	
Yes	1,138 (61.7)	0.98	0.71–1.35
Residency			
Urban	1,027 (64.4)	1	
Rural	480 (63.6)	0.89	0.70–1.13
Level of education			
Primary education not completed (Reference)	586 (64.2)	1	
Primary	493 (66.6)	0.84	0.63–1.12
Secondary or higher	428 (61.6)	1.16	0.82–1.63
Socioeconomic status			
Lowest (Reference)	242 (61.7)	1	
Secondary	275 (72.2)	0.99	0.67–1.45
Middle	294 (68.2)	1.1	0.75–1.63
Fourth	328 (64.0)	0.72	0.49–1.07
Highest	368 (58.8)	0.93	0.61–1.42
Proximity to a health facility			
No (Reference)	461 (53.7)	1	
Yes	1,046 (68.0)	1.31*	1.00–1.70
Perceived malaria as severe			

No (Reference)	943 (63.2)	1	
Yes	564 (65.5)	1.14	0.90–1.44
Perceived susceptibility to malaria			
No (Reference)	616 (60.2)	1	
Yes	891 (66.9)	1.27*	1.01–1.61
IPC with partner or family/friends in the last six months			
No (Reference)	1,234 (61.5)	1	
Yes	273 (76.0)	1.17	0.86–1.60
Complete knowledge of ANC			
No (Reference)	1,180 (62.7)	1	
Yes	327 (68.8)	1.98***	1.45–2.69
Complete knowledge of malaria			
No (Reference)	648 (58.1)	1	
Yes	859 (69.2)	1.26	1.00–1.60
Perception of IPTp and frequency of ANC as community norms			
No (Reference)	777 (61.8)	1	
Yes	730 (66.6)	0.83	0.66–1.05
Perception of complete self-efficacy in relation to IPTp/ANC			
No (Reference)	463 (60.3)	1	
Yes	1,044 (65.5)	1.33*	1.04–1.70
Favorable perceptions of health care providers in relation to ANC			
No (Reference)	634 (63.3)	1	
Yes	873 (64.6)	1.37**	1.08–1.73
Have seen or heard a malaria message in the last six months			
No (Reference)	1,098 (59.3)	1	
Yes	409 (76.4)	1.25	0.95–1.64
Pseudo-R2	0.0443		
Number of observations	1,507		
Notes: *p<0.05; **p<0.01; *** p<0.001. N refers to the frequency of respondents within each row of the group, while (%) refers to percentage of each row that reported the behavior or intention.			

Supplemental Information

Detailed tables on the following indicators are presented in the annex.

- Table A.4.1: Knowledge of IPTp
- Table A.4.2: Attitudes Toward IPTp
- Table A.4.3: Perceived Severity of Malaria in Pregnancy

Insecticide-Treated Net Use and Care

Behaviors and Intentions at a Glance	
	Sixty-seven percent of people in households with nets consistently use their nets. The most important ideational factors associated with consistent use of nets were favorable attitudes, perceived malaria severity, susceptibility, supportive community norms, and perceived self-efficacy.
	The overall ITN use-to-access ratio was 0.74. Seventy-five percent of nets were found hanging tied above the sleeping space.

This section describes the ideational factors related to ITN use, the prevalence of ITN use and care behaviors, and the associations between ideational factors and those behaviors using logistic regression. Ideational factors related to ITN use explored in the MBS include knowledge, favorable attitudes toward ITN use and care, perceived response efficacy, perceived self-efficacy, perceived supportive community norms, and perceived equitable gender attitudes. The behaviors examined include population-level ITN access and use, ITN use-to-access ratio, consistent ITN use by respondents, and net care.

Ideational Variables Linked with Net Use and Care

Ideational Determinants at a Glance	
Highly Prevalent (≥ 80%)	
	Knowledge
	Favorable attitudes towards ITN care
	Perceived self-efficacy
	Perceive equitable gender norms
Less prevalent (≤40%)	
	Positive injunctive community norms

Table 9 (below) presents a summary of ideational factors related to ITN use. Most respondents knew ITNs protect against malaria (86%). This varied greatly between provinces (Cuanza Norte: 78%, Lunda Sul: 88%, Zaire: 92%) and increased with level of education (primary school not completed: 81%, secondary or higher: 92%). Findings also showed statistically significant differences among age groups (45+: 83%, 25–34: 88%) and wealth quintile (second: 76%, highest: 90%).

Three quarters of respondents had favorable attitudes toward ITNs. This varied by province (Cuanza Norte: 68%, Zaire: 80%) and increased the higher the level of education (primary school not completed: 68%, secondary or higher: 80%) and higher wealth quintile (lowest: 64%, highest: 78%). While small, the differences among urban (74%) and rural (72%) were also statistically significant.

Negative attitudes toward ITNs centered around comfort: 51% felt it was not easy to unfold and cover their bed every night, 51% did not like to use ITNs when the weather was warm, and 57% felt the smell of mosquito nets made them uncomfortable for sleeping.

In contrast, the majority of respondents had favorable attitudes toward ITN care (92%), which was higher among those with primary education (96%) and residents of Zaire (97%), and lower among respondents in Lunda Sul (83%). Additionally, there were statistically significant differences among wealth quintile (lowest: 89%, fourth: 94%).

Just over one-half of respondents (54%) perceived the response efficacy of ITNs. This varied between provinces (Cuanza Norte: 45%, Zaire: 63%) and increased among higher education groups (primary school not completed: 49%, secondary or higher: 62%) and among wealth quintile (lowest: 43%, highest: 59%). Perceived self-efficacy was quite high among respondents, with 83% perceiving they could perform various necessary actions to use an ITN. Notably, perceptions of self-efficacy decreased with increases in wealth quintile (lowest: 89%, highest: 76%). Results also revealed differences among provinces (Lunda Sul: 79%, Cuanza Norte: 87%).

In addition, less than one-half of respondents perceived supportive community norms regarding ITN use. Specifically, 45% of respondents perceived that at least one-half of their community members who had nets used them nightly. This was higher among respondents from Lunda Sul (51%) and showed significant variation among wealth quintiles (middle: 43%, highest 48%). In contrast, 18% of respondents perceived that other members of their community would approve of their consistent ITN use (positive injunctive community norms). However, 64% of respondents stated they did not know whether others would approve.

As for gender attitudes, 60% of respondents held equitable gender attitudes regarding net use, in that they would prioritize neither their male nor female children if there were not enough nets for everyone. This varied by region (Zaire: 66%, Cuanza Norte: 55%) and education (completed primary: 58%, secondary or higher: 68%). Respondents favored female children slightly more for ITN use, however, with 37% agreeing that they would prefer net use for their female child compared to 19% who would prefer net use for their male child.

ITN Ownership, Use, and Care

ITN Ownership, Access, and Characteristics

The majority (83%) of nets identified in the net roster were ITNs (as donor agencies typically procure only ITNs, this result is expected), and the remaining 17% were untreated nets. Respondents reported the majority of ITNs identified to have been obtained free of charge (95%). The majority of ITNs found were from the mass distribution campaign (85%), with 7% coming from ANC visits, and many ITNs were less than 12 months old (89%) and white (98%). Among all ITNs identified, respondents reported that 85% had been used the previous night by at least one household member (83% in Cuanza Norte, 86% in Lunda Sul, and 86% Zaire).

Two-thirds (67%) of households possessed at least one ITN at the time of interview, with the highest rate in Cuanza Norte (76%) and the lowest rate in Lunda Sul (52%). Household ownership of ITNs increased with wealth quintiles, ranging from 61% in the lowest wealth quintile to 76% in the highest.

In contrast, just a quarter of households had enough nets (27%), which was defined as at least one net for every two people in the household. Like ownership of at least one ITN, households with enough nets were more common in Cuanza Norte (30%) and increased with wealth quintile, ranging from 22% in the lowest quintile to 35% in the highest quintile. More urban households (34%) had enough ITNs compared to rural households (20%).

Approximately 54% of the population had access to ITNs (based on the assumption that a net can be used by two people in a household). Across provinces, ITN access was from 64% in Cuanza Norte to 45% in Lunda Sul. Also, ITN access increased from 46% among populations in the lowest wealth quintile to 69% in the highest.

Population-level ITN use was similar to access. Specifically, 40% of all household members (not limited to survey respondents) used an ITN the night preceding the survey. ITN use the previous night was highest among children under five years old (47%) and older adults (18 years and above), while residents aged 5–17 had lower ITN use (32%) the night before. In addition, ITN use the night before was higher among populations in the highest wealth quintile (47%).

With similar levels of population-level ITN access to use, the ITN use-to-access ratio was moderate at 0.75, indicating that of those individuals with access to an ITN in their household, roughly 75% used an ITN the night before. Cuanza Norte and Lunda Sul had considerably low use-to-access ratios at 0.64 and 0.69, respectively, while the ratio was 0.83 in Zaire. The use-to-access ratio was 0.69 in urban areas and 0.80 in rural areas. In addition, the use-to-access ratio was highest in the lowest wealth quintile (0.72) and decreased slightly with each increasing level of wealth to 0.68 in the highest wealth quintile.

Consistent Use of ITNs by Respondents

More than two-thirds (67%) of the respondents surveyed noted that they used a net consistently, defined as use every day of the week. Consistent net use decreased as the age of the respondent increased (15–24: 66%, 45+: 61%) and varied by province (Cuanza Norte: 74%, Lunda Sul: 57%, Zaire: 67%).

ITN Care and Repurposing

ITN care rates in Angola varied. Specifically, respondents reported that they had previously washed about one-half (52%) of nets (Cuanza Norte: 52%, Lunda Sul: 67%, Zaire: 68%). Of the nets that had been washed, soap was the most common washing agent used (64%), and respondents commonly dried nets in the shade (63%) and, less frequently, in the sun (35%), which is not recommended. At the time of the survey, only 8% of nets were found hanging, folded up and tied above the sleeping space, which is recommended to keep them from being damaged.

Interviewers also asked individual survey respondents about specific actions they take to care for nets. Specific actions respondents noted to care for their nets include rolling or tying up nets when not in use (44%), handling nets with care (24%), and washing nets gently (15%).

In addition, only 14% of all respondents noted that they have repurposed a net that was no longer useful for sleeping under. Among those who repurposed nets, the most common uses were neutral

repurposing and included protection for seedlings/crops (39%), as rope or for tying (5%), and other purposes (44%).

Table 9. Summary of Ideational Variables Related to ITN Use								
Percentage of respondents who refer to ideational factors by sociodemographic characteristics, Angola 2023 (N=4,261)								
Characteristic	Knowledge of malaria prevention using mosquito nets	Favorable attitudes toward ITNs	Favorable attitudes toward ITN care	Perceived response efficacy of ITNs	Perceived self-efficacy to use ITNs	Perceived supportive descriptive community norms regarding ITNs	Perceived supportive injunctive community norms regarding ITNs	Perceived equitable gender attitudes related to ITN use
Total (%)	**85.6**	**73.4**	**91.7**	**53.9**	**82.5**	**45.3**	**18.0**	**60.1**
Province	***	***	***	***	**	***	***	*
Cuanza Norte	78.2	68.4	93.6	45.3	87.1	42.6	12.1	55.2
Lunda Sul	87.7	72.1	83.3	54.6	78.7	50.8	16.2	59.3
Zaire	92	80.2	96.7	62.6	80.7	43.7	26	66.2
Sex								
Female	85.5	72.9	91.4	53.3	81.9	44.5	18	60.0
Male	86.5	77	93.4	57.4	85.9	50.4	18.2	61.2
Age	*						***	
15–24	85.1	73.2	93.8	54.9	84.5	45	20.9	61.4
25–34	88	74.1	95.6	49.2	84.9	45.3	18.3	64.0
35–44	84.8	75.3	88.2	59.5	79.2	43.4	16.8	55.2
≥45	83.2	69.4	82.4	52.1	76.8	49.5	11	56.0
Residence		*						
Urban	84.5	74.1	89.6	55	81.6	45	18	55.9
Rural	87.6	72.3	95.2	52.1	83.9	45.8	18	60.5
Education	***	***	**	***			***	*
None	80.8	67.9	88.1	49	82.3	46.5	12.8	57.8
Primary	88.5	77.7	95.9	55.3	84.6	41.4	21.4	57.0

Secondary or higher	91.9	79.7	94	62	80.6	47.4	24.4	68.2
Wealth quintile	***	***	**	***	***	*	***	
Lowest	82.3	64	89.2	42.6	88.8	45.9	13.5	62.5
Second	76.2	77	92.2	54.7	84.1	45.1	13	54.1
Middle	89.3	68.6	91.7	54.6	81	43	16.7	54.6
Fourth	89.9	79.6	94.3	58	83.2	44.2	21.7	67.9
Highest	89.5	77.7	90.9	59	75.8	48.2	24.2	60.8
Notes: *p<0.05; **p<0.01; ***p<0.001.								

Logistic Regression Analysis

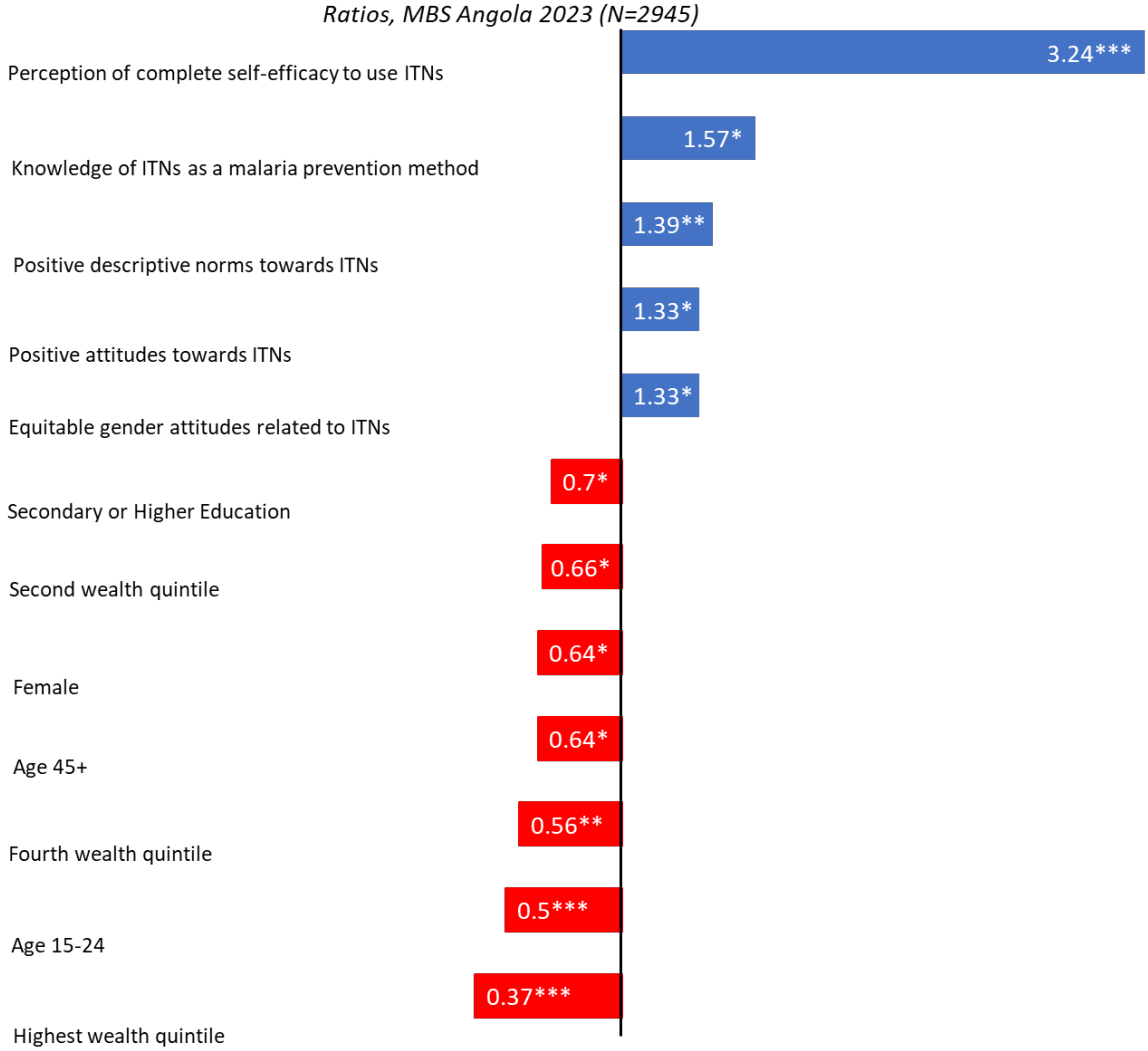
This survey used adjusted logistic regressions to explore ideational factors related to consistent ITN use as well as the specific ITN care behavior of rolling up ITNs when not in use.

Consistent ITN Use

This survey estimated a multivariable regression model to assess the factors associated with consistent net use (use of any net type) reported by individual respondents and ideational and structural factors. Consistent net use is defined as using a net for sleeping under every night of the week and was asked of all individual survey respondents. Figure 10 displays statistically significant results, while Table 10 shows the full results of the model.

The survey found several ideational factors related to net use to be significantly associated with consistent use. Perceived complete self-efficacy for net use [aOR: 3.24, 95% CI: 2.52–4.16] was positively associated with consistent net use. Additionally, respondents who perceived positive descriptive community norms had higher odds of consistent use [aOR: 1.39, 95% CI: 1.11–1.75] than those who did not. Additional factors significantly positively associated with consistent ITN use included knowledge of ITNs as a malaria prevention method [aOR: 1.57, 95% CI: 1.14–2.16], positive equitable gender attitudes related to ITN use [aOR: 1.33, 95% CI: 1.05–1.67] and favorable attitudes toward ITNs [aOR: 1.33, 95% CI: 1.03–1.74]. In contrast, several sociodemographic factors were inversely associated with consistent net use. Women had lower odds of consistent use [aOR: 0.64, 95% CI: 0.45–0.91] compared to men, and respondents with secondary education or higher had lower odds [aOR: 0.7, 95% CI: 0.5–0.97] than respondents who had not completed primary school. Additional factors negatively associated with consistent net use included socioeconomic status, with respondents in the second [aOR: 0.66, 95% CI: 0.44–1.00], fourth [aOR: 0.56, 95% CI: 0.36–0.86], and highest quintiles [aOR: 0.37, 95% CI: 0.24–0.57] having lower odds of consistent net use compared to the lowest wealth quintile. Lastly, age was a statistically significant inversely associated factor, with respondents aged 15–24 [aOR: 0.50, 95% CI: 0.37–0.66] and 45 or more [aOR: 0.64, 95% CI: 0.43–0.97] having lower odds of consistent net use than respondents from other age groups.

Figure 10. *Factors Significantly Associated Consistent Net Use and their Adjusted Odds Ratios, MBS Angola 2023 (N=2945)*



Significance: * p<0.05; ** p<0.01; ***p≤0.001

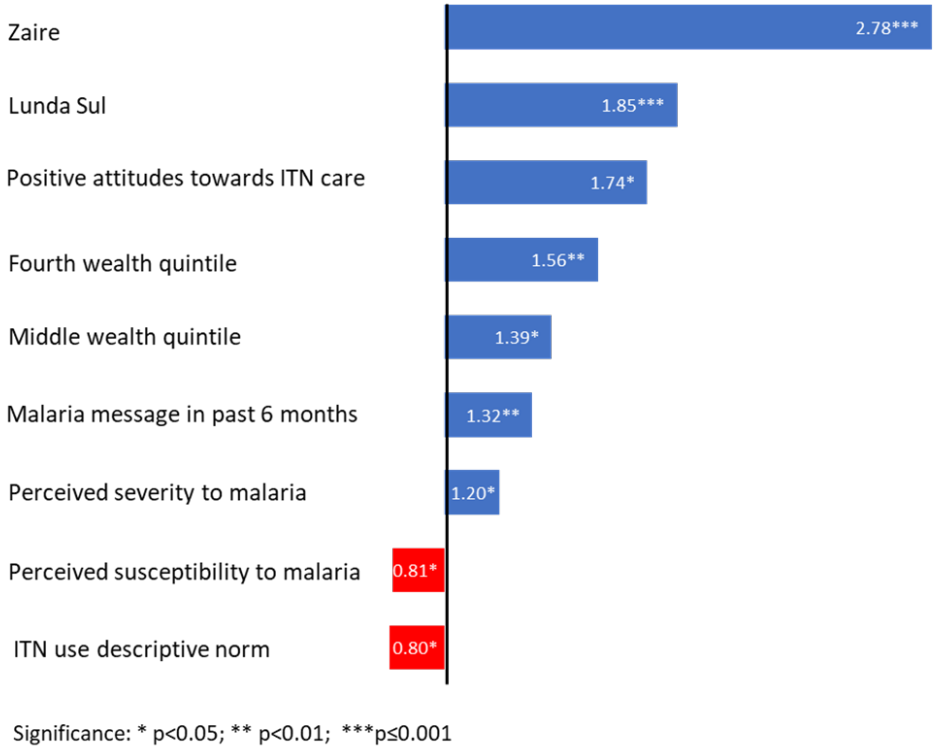
Care of ITNs

This survey estimated a multivariable regression model to assess the factors associated with reporting recommended net care behavior (tying up a net when not in use) and ideational and structural factors. Figure 10 displays statistically significant results, while Table 11 shows the complete model. This survey found many ideational determinants related to ITNs to be significantly associated with reporting tying/folding up a net when not in use. Favorable attitudes toward ITN care [aOR: 1.74, 95% CI: 1.03–2.94] were positively associated with this behavior. Additionally, respondents who perceived malaria as severe had higher odds of tying/folding up the net when not in use [aOR: 1.39, 95% CI: 1.11–1.75] than those who did not. Notably two ideational factors were inversely associated with ITN care behavior. Respondents who perceived susceptibility to malaria had lower odds [aOR: 0.81, 95% CI: 0.68–0.97] than

those who did not. Respondents who perceived ITNs were a community norm also had lower odds [aOR: 0.80, 95% CI: 0.67–0.95] than those who did not.

Lastly, this survey found structural factors to be significantly associated, including region, wealth quintile, and exposure to malaria messages. Specifically, respondents in Lunda Sul [aOR: 1.85, 95% CI: 1.43–2.39] and Zaire [aOR: 2.78, 95% CI: 2.22–3.49] had higher odds of reporting proper net care than respondents in Cuanza Norte. Additionally, respondents in the middle wealth quintile [aOR: 1.39, 95% CI: 1.02–1.90], and the fourth wealth quintile [aOR: 1.56, 95% CI: 1.13–2.15] had higher odds than respondents in the lowest wealth quintile. Lastly, respondents who reported exposure to a malaria message in the previous six months had higher odds [aOR: 1.32, 95% CI: 1.09–1.60] than those who did not.

Figure 11. *Factors Significantly Associated with proper net care behavior and their Adjusted Odds Ratios, MBS Angola 2023 (N=2945)*



Significance: * p<0.05; ** p<0.01; ***p≤0.001

Table 10: Results of the Logistic Regression Exploring Factors Associated with Sleeping under an ITN Every Night			
Characteristic	**% with consistent net use**	**aOR**	**95% CI**
Age group			
25–34 (Reference)	65.74	1.00	
15–24	63.40	0.50***	0.37–0.66
35–44	66.22	0.72	0.52–1.01
45 and up	68.34	0.64*	0.43–0.97
Religion			
Catholic (Reference)	68.18	1.00	
Protestant	64.43	1.12	0.86–1.46
Other	60.71	1.20	0.83–1.74
Province			
Cuanza Norte (Reference)	71.19	1.00	
Lunda Sul	62.14	0.92	0.64–1.32
Zaire	62.00	0.77	0.57–1.05
Sex			
Male (Reference)	69.67	1.00	
Female	64.71	0.64*	0.45–0.91
Level of education			
Primary school not completed (Reference)	63.52	1.00	
Primary	64.61	1.14	0.84–1.55
Secondary or higher	70.53	0.70*	0.50–0.97
Socioeconomic status			
Lowest (Reference)	63.64	1.00	
Second	69.55	0.66	0.44–1.00
Middle	65.63	0.83	0.54–1.28
Fourth	65.06	0.56**	0.36–0.86
Highest	63.12	0.37***	0.24–0.57
Residence			
Urban (Reference)	62.44	1.00	
Rural	69.01	0.96	0.76–1.20
Favorable attitudes toward ITNs			
No (Reference)	53.77	1.00	
Yes	70.00	1.33*	1.03–1.74
Knowledge ITN is a method of malaria prevention			
No (Reference)	56.36	1.00	
Yes	66.67	1.57**	1.14–2.16
Perceptions of complete self-efficacy to use ITNs			

No (Reference)	50.43	1.00	
Yes	68.79	3.24***	2.52–4.16
ITN use descriptive community norm			
No (Reference)	61.57	1.00	
Yes	70.77	1.39**	1.11–1.75
ITN use injunctive community norm			
No (Reference)	64.50	1.00	
Yes	69.21	0.97	0.74–1.29
Equitable gender attitudes related to ITNs			
No (Reference)	63.73	1.00	
Yes	66.51	1.33*	1.06–1.67
Campaign slogan recall			
No (Reference)	63.17	1.00	
Yes	77.67	1.32	0.95–1.83
Pseudo-R2	0.1120		
Number of observations	2,945		
Notes: *p<0.05; **p<0.01; ***p<0.001.			

Table 10. Results of the Logistic Regression Exploring Factors Associated with Reporting Consistent ITN Use (Sleeping Under an ITN Every Night of the Week)			
Characteristic	**N (%)**	**aOR**	**95% CI**
Age group			
25–34 (Reference)	970 (89.3)	1.00	
15–24	966 (80.9)	0.50***	0.37–0.66
35–44	654 (88.7)	0.72	0.52–1.01
45 and up	355 (83.9)	0.64*	0.43–0.97
Religion			
Catholic (Reference)	1,202 (86.8)	1.00	
Protestant	1,353 (86.0)	1.12	0.86–1.46
Other	390 (78.9)	1.20	0.83–1.74
Province			
Cuanza Norte (Reference)	1,202 (89.6)	1.00	
Lunda Sul	603 (83.8)	0.92	0.64–1.32
Zaire	1,140 (81.7)	0.77	0.57–1.05
Sex			
Male (Reference)	543 (92.2)	1.00	
Female	2,402 (84.3)	0.64*	0.45–0.91
Level of education			
Primary education not completed (Reference)	1,379 (86.9)	1.00	
Primary	838 (84.8)	1.14	0.84–1.55
Secondary or higher	728 (83.4)	0.70*	0.50–0.97
Socioeconomic status			
Lowest (Reference)	551 (93.3)	1.00	
Second	592 (86.5)	0.66	0.44–1.00
Middle	579 (83.0)	0.83	0.54–1.28
Fourth	574 (85.3)	0.56**	0.36–0.86
Highest	649 (80.5)	0.37***	0.24–0.57
Residence			
Urban (Reference)	2,033 (83.8)	1.00	
Rural	912 (88.1)	0.96	0.76–1.20
Favorable attitudes toward ITNs			
No (Reference)	662 (80.8)	1.00	
Yes	2,283 (86.9)	1.33*	1.03–1.74
Knowledge ITN is a method of malaria prevention			
No (Reference)	330 (86.8)	1.00	
Yes	2,615 (85.2)	1.57**	1.14–2.16
Perceptions of complete self-efficacy to use ITNs			
No (Reference)	500 (64.2)	1.00	

Yes	2,445 (89.5)	3.24***	2.52–4.16
ITN use descriptive community norm			
No (Reference)	1,556 (83.2)	1.00	
Yes	1,389 (87.8)	1.39**	1.11–1.75
ITN use injunctive community norm			
No (Reference)	2,370 (85.9)	1.00	
Yes	575 (83.4)	0.97	0.74–1.29
Equitable gender attitudes related to ITNs			
No (Reference)	1,170 (81.2)	1.00	
Yes	1,775 (88.1)	1.33*	1.06–1.67
Campaign slogan recall			
No (Reference)	2,441 (85.1)	1.00	
Yes	504 (87.2)	1.32	0.95–1.83
Pseudo-R2	0.1120		
Number of observations	2,945		
Notes: *p<0.05; **p<0.01; ***p<0.001. N refers to the frequency of respondents within each row of the group, while (%) refers to percentage of each row that reported the behavior or intention.			

Table 11. Results of the Logistic Regression Exploring Factors Associated with Folding or Tying up a Net when not in Use

Characteristic	N (%)	aOR	95% CI
Age group			
15–24 (Reference)	966 (28.7)	1.00	
25–34	970 (26.5)	1.19	0.96–1.48
35–44	654 (23.2)	1.20	0.93–1.54
45 and up	355 (29.2)	1.10	0.80–1.52
Province			
Cuanza Norte (Reference)	1,202 (15.1)	1.00	
Lunda Sul	603 (28.0)	1.85***	1.43–2.39
Zaire	1,140 (39.4)	2.78***	2.22–3.49
Sex			
Male (Reference)	543 (20.8)	1.00	
Female	2,402 (28.0)	1.22	0.95–1.57
Level of education			
Primary education not completed (Reference)	1,379 (18.9)	1.00	
Primary	838 (35.9)	1.12	0.89–1.40
Secondary or higher	728 (32.2)	1.09	0.84–1.41
Socioeconomic status			
Lowest (Reference)	551 (16.6)	1.00	
Second	592 (19.1)	1.27	0.93–1.73

Middle	579 (31.1)	1.39*	1.02–1.90
Fourth	574 (34.4)	1.56**	1.13–2.15
Highest	649 (30.3)	1.34	0.96–1.87
Residence			
Urban (Reference)	2,033 (28.3)	1.00	
Rural	912 (24.8)	1.13	0.94–1.36
Favorable attitudes toward ITN care			
No (Reference)	142 (25.2)	1.00	
Yes	2,803 (27.1)	1.74*	1.03–2.94
Perceptions of malaria severity			
No (Reference)	1,821 (24.6)	1.00	
Yes	1,124 (30.7)	1.20*	1.00–1.43
Perceptions of malaria susceptibility			
No (Reference)	1,231 (32.5)	1.00	
Yes	1,714 (22.7)	0.81*	0.68–0.97
Knowledge ITN is a method of malaria prevention			
No (Reference)	2,338 (25.6)	1.00	
Yes	607 (33.2)	1.05	0.79–1.41
IPC about malaria in the last six months			
No (Reference)	1,325 (21.0)	1.00	
Yes	1,620 (31.6)	0.95	0.76–1.19
Perceptions of ITN response efficacy			
No (Reference)	500 (27.7)	1.00	
Yes	2,445 (26.8)	1.15	0.96–1.38
Perceptions of self-efficacy to use ITNs			
No (Reference)	1,556 (31.0)	1.00	
Yes	1,389 (22.5)	1.28	0.99–1.64
ITN use descriptive community norm			
No (Reference)	2,370 (25.9)	1.00	
Yes	575 (31.9)	0.80*	0.67–0.95
ITN use injunctive community norm			
No (Reference)	330 (13.6)	1.00	
Yes	2,615 (29.1)	0.94	0.75–1.17
Heard a message related to malaria in the last six months			
No (Reference)	2,016 (23.2)	1.00	
Yes	929 (34.9)	1.32**	1.09–1.60
Pseudo-R2	0.0570		
Number of observations	2,945		

Notes: *p<0.05; **p<0.01; ***p<0.001.
N refers to the frequency of respondents within each row of the group, while (%) refers to percentage of each row that reported the behavior or intention.

Supplemental Information

Detailed tables on the following indicators are presented in the annex.

- Table A.5.1: Knowledge of Malaria Prevention Using Mosquito Nets
- Table A.5.2: Favorable Attitudes Toward ITNs
- Table A.5.3: Favorable Attitudes Toward ITN Care
- Table A.5.4: Perceived Response Efficacy of ITNs
- Table A.5.5: Perceived Self-Efficacy to Use ITNs
- Table A.5.6: Perceived Community Norms Regarding ITNs
- Table A.5.7: Equitable Gender Attitudes Regarding ITNs
- Table A.5.8: Household Possession of Mosquito Nets
- Table A.5.9: Access to an ITN
- Table A.5.10: Use of ITNs by Persons in the Household
- Table A.5.11: ITN Use Access Ratio
- Table A.5.12: Use of Existing ITNs
- Table A.5.13: ITN Characteristics
- Table A.5.14: ITN Care
- Table A.5.15: Net Care and Repurposing
- Table A.5.16: Consistent Net Use
- Table A.5.17: Results of the Logistic Regression Assessing Factors Associated with Sleeping under an ITN Every Night
- Table A.5.18: Results of the Logistic Regression Exploring Factors Associated with Folding or Tying up Net when not in Use

Media Consumption and Message Exposure

Media Consumption

Table 12 presents a summary of variables related to media consumption and malaria messaging exposure. Just over one-third (35%) of all participants listened to the radio at least once a week, with slightly higher rates observed among respondents in Cuanza Norte (44%), male respondents (53%), those with secondary education (49%), and those in the highest wealth quintile (50%). TV viewing was much more common, with 51% of participants watching TV at least once a week. This was more pronounced among respondents in Zaire (67%), younger respondents (15–24: 57%, 25–34: 57%), those with secondary education (83%), and those in the highest wealth quintile (85%). TV viewership was notably lower among respondents in the lowest wealth quintile (14%), respondents who did not complete primary education (29%), and respondents in Cuanza Norte (35%).

Media Access and Consumption at a Glance		
	Radio listenership	35%
	TV viewership	51%
	Mobile phone ownership	35%

Just over one-third (35%) of all respondents owned a phone, especially among respondents who were men (49%), respondents aged 25–34 (44%), those with secondary education (68%), or in the highest wealth quintile (61%). Of note, among all respondents with mobile phones, the majority (90%) noted that they could use chat or text on their devices, while lower proportions noted that their devices could send or receive audio files (56%), pictures (55%), or videos (51%).

Message Exposure and Recall

Only about a quarter (28%) of respondents stated they had seen or heard a malaria message in the six months preceding the survey. Malaria message exposure was higher among respondents with secondary education (40%), while it was lower among respondents in the lowest wealth quintile (20%). Data revealed differences among provinces (Cuanza Norte: 31%, Lunda Sul: 24%), respondent sex (female: 27%, male: 37%), and respondent age group (15–24: 26%, 45+: 33%).

The primary source of malaria messages was the health facility, with 45% of respondents hearing a malaria message there in the past six months. Almost one-third heard a malaria message on television (31%) and 22% heard a message on the radio. Less than one-fifth (17%) of respondents were able to complete the malaria SBC campaign's ZMCC slogan, which increased with increases in wealth quintile (lowest: 8%, highest: 23%) and education (primary school not completed: 9%, secondary or higher: 27%). Many recognized the Zero Malaria slogan from television (37%), a health facility (34%), or the radio (30%).

Table 12. Summary of Variables Related to Media Consumption					
Percentage of respondents who report media consumption, by type of media and sociodemographic characteristics, Angola 2023 (N=4,261)					
Characteristics	Listens to the radio at least once a week	Watches TV at least once a week	Owns a mobile phone	Completed a campaign slogan (ZMCC)	Saw or heard a message about malaria in the past six months
Total (%)	**35.4**	**51.1**	**35.2**	**16.9**	**28.1**
Province	***	***	***	***	*
Cuanza Norte	31.2	35.1	21.5	14.3	31.2
Lunda Sul	44.3	52.8	39.7	21.4	23.5
Zaire	32.3	67.1	46.4	15.8	28.7
Sex	***	**	***	***	***
Female	32.6	51.2	33.1	16.1	26.6
Male	52.8	50.7	48.8	21.6	37.4
Age Group	**	***	***	*	***
15–24	33.9	57.4	27.3	17.8	25.5
25–34	36.3	56.9	44.5	17.9	29.9
35–44	33.4	43.4	35.4	15.1	27
≥45	41	33.4	36	14.8	33.2
Residence			*		
Urban	36.1	53.8	37.9	18.2	28.9
Rural	34.2	46.7	30.8	14.6	26.8
Education	***	***	***	***	***
Primary education not completed	29.9	28.7	17.7	9.1	20.8
Primary	33.1	62.2	36.7	22	30.9
Secondary or higher	48.6	82.9	68.1	26.6	39.5
Wealth quintile	***	***	***	***	***
Lowest	20.2	14	3.8	7.6	20.1
Second	27.5	27.5	22	14.1	26.7
Middle	37.3	49.5	30.4	19.5	31.1
Fourth	40.6	74.7	55.7	19.8	31.5
Highest	49.6	85.1	60.8	22.7	30.8

Supplemental Information

This study presents detailed tables on the following indicators in the annex.

- Table A.6.1: Radio Listenership at Least Once a Week
- Table A.6.2: Preferred Time to Listen to the Radio
- Table A.6.3: Television Viewership at Least Once a Week
- Table A.6.4: Preferred Time to Watch Television
- Table A.6.5: Mobile Phone or Tablet Ownership
- Table A.6.6: Exposure to Malaria Messages

Conclusions and Recommendations

The control and elimination of malaria largely depend on adopting behaviors for prevention and treatment of malaria. Understanding malaria-related behaviors and factors that influence whether people practice these behaviors can provide the basis for improving SBC about malaria-related behaviors. In view of the trends in malaria transmission and cases, and the interventions being implemented, the 2023 Angola MBS is a key resource to inform programmatic and policy decisions. This section discusses the relevant and actionable implications of the results from the 2023 Angola MBS.

Cross-Cutting Ideational Factors

Ideational factors include beliefs, knowledge, and perceptions of malaria. These factors are important because they can be modified through interventions including SBC. Taken as a whole, the ideational factors regarding malaria are at a low level, with considerable room for improvement. Fifty-five percent of respondents have basic knowledge of malaria, 54% perceive they are susceptible to malaria, 38% perceive malaria as serious, and only 16% communicated with their spouse or partner about malaria in the past six months. The recent COVID-19 pandemic resulted in people being exposed to a large number of messages about disease prevention and control. This may have set back efforts to influence perceptions of malaria-related behaviors.

The key findings from the MBS show stakeholders are working to reduce malaria in Angola with a reliable source of data to fuel the design of evidence-based activities and used to report national SBC communication plans and strategies. The MBS results provide insights into the factors that motivate (or de-motivate) people's use of malaria prevention and treatment interventions. These cognitive, emotional, and social ideational factors influence individual's behaviors. When stakeholders identify these factors, malaria programs can develop evidence-based activities to positively influence these factors, and thus bring about positive behavior change. These results help to better understand why people behave the way they do, and these behaviors can be addressed in the messaging and design of activities.

Malaria-related SBC programs should build general knowledge of malaria and SBC activities can promote active dialogue about malaria within households and communities. People are very familiar with malaria and its means of prevention and treatment. However, this familiarity may lead them to overlook its potential seriousness, especially for young children and pregnant women.

Care-Seeking for Fever in Children Under Five Years

The MBS data demonstrated appreciable rates of malaria care-seeking. Of 302 children under five years of age with fever in the two weeks preceding the survey, 91% of their caregivers sought care and 75% of caregivers with a febrile child under five sought both prompt and appropriate care. Factors facilitating prompt and appropriate care were comprehensive knowledge about care-seeking for fever, and the perception that the health facilities had malaria treatments available.

Only 42% of the total sample, however, had comprehensive knowledge about care-seeking for fever. Low perceived susceptibility was a barrier to obtaining appropriate and timely care. While 55% identified ACT drugs as the appropriate treatment for acute cases of malaria, 12% identified SP/Fansidar, and 15% incorrectly stated paracetamol as the appropriate treatments. Fifty-eight percent thought that malaria could be diagnosed either through a blood test, or by symptoms. While 84% viewed the malaria medications available in health centers as effective, 51% thought medications obtained in the market were just as effective.

In addition to increasing and maintaining the availability of tests and drugs for diagnosing and treating malaria, programs can support prompt and appropriate care-seeking for fever with SBC activities that:

- Improve perceptions about the availability and effectiveness of tests and drugs in health facilities and the superiority of drugs obtained in health facilities to those available in the market.
- Promote ACT as the most effective and recommended treatment for malaria, rather than SP/Fansidar or paracetamol.
- Promote taking the first dose of ACT at the health facility to ensure timely initiation of treatment.

SBC interventions can be designed and implemented to communicate more effectively regarding malaria treatment at the individual, community, health care provider, and policy levels. Important audiences related to case management include caregivers and their children, community members, and, where appropriate, other personnel such as ADECOS.

At the individual level, efforts should address persistent knowledge gaps, particularly on the meaning and importance of prompt and appropriate care-seeking, and prompt initiation of treatment. Specifically, messages should emphasize prompt and appropriate care, empower health system users to request testing for their children with fever or medications for children diagnosed with malaria, ensure follow through with the results of malaria testing, and improve perceptions about the availability of tests and medications at the facilities level. Messages on malaria severity and prevention can complement the overall messaging on prompt and appropriate malaria treatment. Additional qualitative research might explore in greater depth reasons for delayed or inappropriate care-seeking and how these reasons can be addressed with SBC.

At the health care provider and health systems level, efforts should focus on improving provider behavior and quality of care to boost uptake of services and on improving technical and IPC skills. Many MBS respondents perceive that health care providers do not always have the necessary supplies including tests and medications, such that lack of access to services or commodities may be inhibiting prompt care-seeking. However, the data from this survey does not allow us to formulate specific recommendations regarding health care providers or logistics systems. The MBS does not capture data directly from either community- or facility-based health workers, such as assessment of quality of care for fever in first-level health facilities, assessment of access to care and treatment in remote rural areas, or evaluation of the supply chain for malaria tests and treatments. Investments to increase numbers, distribution, and quality of care from community- and facility-based health workers, or to improve the supply chain for malaria tests and treatments might address barriers to health care access, especially in hard-to-access vulnerable communities. Therefore, SBC programs that build positive perceptions of

health care providers and that address beliefs that health care providers do not always have the necessary supplies might need to be complemented with steps to strengthen supply-chain management to ensure commodities such as RDTs and ACTs are available. Given the high proportion of the population that is urban, other steps might be necessary to improve health care access in urban areas.

Summary of Recommendations	
Individual	Reinforce prompt and appropriate care-seeking behavior, taking into account that confirmation of malaria diagnosis and antimalarials are only available in health units.
	Give complementary messages on malaria severity; draw attention to malaria susceptibility and negative impacts on an individual's well-being.
	Improve perceptions about the availability and effectiveness of tests and drugs in health facilities, complemented by steps to improve supply-chain management, where appropriate.
	Promote immediate initiation of treatment at the health facility.
Community	Engage community structures to identify health goals and links with health facilities.
	Promote dialogue and trust with providers.
	Identify and promote appropriate roles for ADECOS in the treatment and referral of malaria cases.
Health care providers	Improve the technical and interpersonal skills of health care providers.
	Ensure adequate supply of commodities.
	Encourage administration of the first dose of ACT at health facilities.
Policy	Expand access to malaria health care including through increased training of ADECOS.

Malaria in Pregnancy

Existing policies related to MIP in Angola include:

- ITNs are given for free during ANC.
- ANC/IPTp services are free.

The MBS data demonstrated appreciable rates of reported ANC attendance, ITN use, and preventive treatment with SP/Fansidar during ANC visits. However, there is still considerable room for improvement. Sixty-six percent of women reported they received an ITN during an ANC visit. Only 46% of women reported they started ANC during their first trimester, with considerable variation by province: from 62% in Zaire, to 42% in Cuanza Norte, and 34% in Lunda Sul. Findings show a considerable drop in reported quantity of ANC visits, with 91% of women attending ANC1, dropping to 68% by ANC4. Results reveal a similar drop in receipt of IPTp1 (92%) to IPTp3 (65%), with the greatest drop in Cuanza Norte from 88% for IPTp1 to 57% for IPTp3. These MBS data points provide a sense of trends among women's perceptions of service utilization in the three provinces. However, as a cross-sectional survey, the MBS does not report health service usage statistics for which District Health Information System 2 (DHIS2) data will be a definitive source.

Factors facilitating the uptake of the recommended behaviors during pregnancy were high response efficacy of 90% for IPTp (perception that taking SP/Fansidar is effective) and high self-efficacy among women to take IPTp (71%). However, only 53% of women have favorable perceptions about the health care professionals at the health facilities, and only 17% are aware of the recommendations for taking IPTp. Factors favoring attending ANC four times or more are complete knowledge of ANC, higher wealth quintile, favorable perceptions of the health care professionals at the health units, and high self-efficacy for ANC attendance.

To improve knowledge and behaviors related to ANC, SBC programs can:

- Identify channels of communication that are more effective in reaching women, especially those who are illiterate or have limited education, lower socioeconomic status, or live in remote rural areas, such as IPC and community mobilization.
- Emphasize the added benefits of ANC, and the importance of starting ANC during the first trimester. Clearly emphasize the dangers of MIP to the mother and the unborn child.
- Spread awareness of what IPTp is, why it is needed, the recommended number of doses needed, when to get it, and where to get it.

The Angola MBS did not include data collection directly from providers of antenatal and intrapartum care such as doctors, midwives, obstetric nurses, and traditional birth attendants. Investments to increase access to ANC may be warranted, especially in hard-to-access vulnerable communities. Similarly, there may be a need to improve quality of care through training, supervision, and incentives. However, the data from this survey does not allow us to formulate specific recommendations regarding access to ANC, quality of care, and maternal care providers.

SBC and service delivery improvement activities can work together to focus on improving the commonly held perceptions about providers by also improving the knowledge and standards of health care professionals, countering the negative perceptions people have of health care professionals and improving counseling during ANC visits. Health care user perceptions of health care providers may be improved with greater positive experiences with health care providers. Therefore, SBC interventions at the provider level could seek to improve provider behavior and quality of care. Capacity strengthening and supportive supervision programs are recommended to improve technical knowledge of the updated ANC/IPTp and IPC skills of service providers—both those based in health facilities and those based in the community.

Complementary supply-chain management is needed to ensure an adequate supply of commodities. The program should consider expansion of and continued support for service provision by the National Directorate of Public Health (DNSP), including:

- Expansion of ANC services into lower-level health units (i.e., health posts) coupled by continuous awareness of benefits and importance of early ANC attendance.
- Engagement of pregnant women over 35 years old as an audience for ANC SBC activities by creating tailored messages and improving service delivery to attract this specific age group. Improvement of coverage and quality of ANC in the private sector, by starting with accessing data on the provision of ANC services at the private sector level.

- Organization of women's groups and promotion of community-based influencers/opinion makers engagement in MIP activities to promote early ANC attendance and uptake of Fansidar/**SP and** change perception of community norms around ANC and IPTp.

- Consideration of an increased role for ADECOS in delivering health promotion messages to increase early ANC access, increase Fansidar/SP dispensation and demand, and decrease missed opportunities for pregnant women.

Summary of Recommendations	
Individual 	Reinforce importance of early initiation of ANC and attending four or more ANC visits and comprehensive knowledge of MIP, including ANC and IPTp.
	Develop tailored SBC programs for women over 35 years old.
	Increase knowledge on the dangers of MIP to the mother and the unborn child.
Health care provider 	When and as ANC services are extended to other health units, couple with providers promoting the importance of ANC and IPTp to health care users.
	Improve attitudes and IPC.
	Ensure supportive supervision.
	Ensure availability of commodities.

Insecticide-Treated Net Use and Care

Policies related to ITN use and care in Angola include:

- ITNs are distributed free of charge, primarily through mass campaigns, and to a lesser extent during ANC.
- National norms and guidelines for all Angolans to sleep under ITNs all year round.
- ITN mass distributions occurring every two to three years in donor-supported provinces (prioritized activity based on budget availability).

Ideational factors are generally favorable for ITN use. Seventy-three percent of respondents have favorable attitudes toward ITNs, and 83% have self-efficacy to use ITNs. Respondents consider ITNs to be useful and effective; however, some consider them to be uncomfortable to use. While 88% report that ITNs are useful, 57% report that the odor of the insecticide makes it uncomfortable for them to sleep under a net, 51% report that it is uncomfortable to sleep under a net every night, and 40% report that it makes it inconvenient for couples who want to have children. This discomfort does not necessarily impede use.

The main source of ITNs found in households was from mass campaigns (85%), followed by ANC visits (7%), and immunization visits (1%). Two-thirds (67%) of households have nets, with notable variation by province from 76% in Cuanza Norte to 69% in Zaire and 52% in Lunda Sul. Use of mosquito nets, among those with access to a net, was 74%, with variation by province from 83% in Zaire to 69% in Lunda Sul and 64% in Cuanza Norte, and higher use in rural (80%) than urban (69%) areas. Significant facilitators of

net use are perceived self-efficacy and complete knowledge about ITNs for malaria prevention. Barriers included being female and a greater number of people in the household.

Only 14% of respondents reported they repurposed an inactive net, with the majority of these individuals repurposing for neutral reasons, i.e., the net was no longer useful to sleep under and was repurposed in a way that was not harmful to the environment although not helpful to prevent malaria.

Recommendations to increase access to ITNs and their consistent use are:

- Maintain and increase investment in ITN mass distribution campaigns which are an important avenue to communicate and motivate ITN use and promote care recommendations.
- Support the dissemination of engaging and persuasive messages about ITN use every night through:
    - Community level influencers, community level activities, and families.
    - Increased IPC within the household.
    - Applauding positive attitudes toward ITNs and perceived self-efficacy use.
    - Mass media channels that are appropriate for specific segmented audiences.
- Support DNSP in its efforts to reach younger (15–24) and older (45+) populations with messages about mosquito nets encouraging gender equity and other positive norms related to ITN use.
- Promote television campaigns to reach audiences with higher education and higher socioeconomic status who were statistically significantly less likely to consistently use ITNs.
- Strengthen the promotion of ITNs and their use in school health programs.
- Promote multisectoral integration for the promotion of access and use of ITNs, particularly involving the private sector.

Summary of Recommendations	
Individual 	Provide appropriate information on ITN availability through campaigns, ANC, immunization, and the private sector.
	Reinforce consistent ITN use.
	Promote tying or rolling up nets when not in use to protect them from damage, washing them infrequently, and drying them in the shade. When they are no longer useful to sleep under, promote beneficial repurposing of ITNs.
Community 	Elevate norms for consistent net use.
	Increase IPC about malaria and bed net use within families. Promote effective engagement and empowerment of community-based influencers/opinion leaders, especially during mass ITN distribution campaigns.

	Conduct individual, household, and community IPC through ADECOS to encourage nightly net use and net care.
Health care provider	Support household access to nets through continuous distribution in facilities, including ANC.
	Promote consistent net use during ANC and other visits to health units.
Policy	Maintain and increase investment in ITN mass distribution campaigns.
	Promote multisectoral integration for promotion of ITN access and use.
	Strengthen awareness on net use and care, engaging with primary and secondary education institutions, and targeting young age groups for behavior change.

Existing guidelines for SBC during ITN distribution highlight relevant behaviors across the net lifecycle including net acquisition, use, care, and end of life. SBC interventions related to net acquisition should provide information on ITN availability during ITN mass distribution campaigns, ANC, and immunization clinics, as well as access through the private sector. ITN use messages should focus on the need to reinforce community norms for community members to sleep under an ITN every night, in both rainy and dry seasons and in both high and low transmission settings, regardless of ITN shape, size, or color, as well as messages about the smell and odor of new ITNs. ITN care messages include tying up a net when not in use, handling nets gently, keeping nets away from children and pests, washing them infrequently in a basin with mild soap, and repairing the net when torn. Misuse, clearly defined by the NMCP as any use of an ITN for purposes other than its intended use as a bed net to protect against malaria infection, should be discouraged.

ITN end-of-life messages should focus on repairing holes promptly (e.g., sewing or patching nets with other nets) and repurposing nets in a way that does not misuse them. Beneficial repurposing allows the user to be protected from malaria, including using older ITNs as window screens. Neutral repurposing does not prevent mosquito bites and is not harmful. Examples include covering crops or using strips of old netting for string/rope.

Media Consumption and Exposure

Exposure to messages on malaria prevention and control is lower than desired:

- Twenty-eight percent remember hearing a message about malaria in the past six months, with 12% hearing the message in a health facility, 9% on television, and 6% on the radio.
- Seventeen percent could correctly complete the slogan “Zero Malaria Starts with Me”.

Access to mass media is far from universal, with 45% of respondents reporting access to television and 36% to radio. Access to radio was far higher among men (53%) than women (33%). Radio has the most listeners in the afternoon, while television has the most viewers throughout the evening. Fifty-four

percent of respondents have a basic mobile phone (with keypad), while only 12% have a smartphone. Mobile phone ownership is much higher among men (49%) than women (33%), and among respondents with secondary education or higher (68%) than primary (49%) or no education (18%). Reaching certain groups, especially women with no education or primary education, through radio, television, and mobile phones will therefore prove difficult.

Recommendations for more effective communication about malaria prevention and control include:

- Diversifying the means of disseminating messages according to the characteristics of the profile of each intended population and preferred schedules.
    - Relative to men, radio reaches few women.
    - In general, radio, television, and internet are all reaching one-half or less of the population. Alternative modes of communication, such as interpersonal, community mobilization; peer groups; caravans; and events may be more appropriate for malaria SBC activities, including the dissemination of the ZMCC campaign.
    - Audio media is the most appropriate way to disseminate information to the population with a lower educational level as opposed to print material.
    - While access to radio, TV, and mobile communication is not very high, they are still viable channels and should be used for audience-specific messaging and can be used together to ensure maximum coverage.
    - IPC channels, including communication by health care providers and through community groups, can be developed and expanded.
    - Improving peer group's IPC (i.e., organize women's groups and promote community-based influencer's/opinion maker's engagement regarding malaria in general) and ensuring these groups have support materials in local languages.
    - Implementing malaria SBC programs, including the development and printing of materials, in local languages. Where resources may not permit this, the use of community worker stations to convey messages is an affordable and logistically feasible and advisable option.

Community engagement and in-person communication channels that employ face-to-face approaches are effective in reaching rural communities. Examples of entertaining and interactive activities include health bazaars or malaria roadshows which take place on market days or in local schools and include question and answer sessions, net hanging demonstrations, malaria testing stations, dissemination of brochures and flyers, music, and dance competitions, as well as other activities to make the events fun and memorable.

In addition, local community radio stations can be leveraged as mass media channels to disseminate entertainment education messages both in official (for the intended youth audience) and local languages such as radio drama series, particularly in rural settings. In urban settings, national radio and television spots in addition to social media channels such as Facebook, Instagram, and WhatsApp may be more appropriate.

Implications for Future Research

Subsequent research may seek to address gaps identified in the MBS. Potential topics include:

- Barriers to early initiation of ANC, and development of interventions and identification of communication channels to promote early initiation, especially among adolescents and women with low literacy or residing in remote rural areas.
- Health care provider behaviors and how SBC intervention can be implemented to affect their behavior.
- Causes of drops in ANC attendance and taking IPTp during pregnancy, and development and testing of more effective ways to promote more ANC visits and IPTp doses.
- Qualitative research to promote community norms related to care-seeking, MIP, and consistent ITN use.
- Behavioral surveys and impact assessment on interventions currently underway to improve SBC should also be considered.

Annex A: Data Tables

This annex provides all data tables for the 2023 Angola MBS that were not included in the main body of the report. A brief description of the purpose of each table is provided. Data presented in these tables are often disaggregated by study province and/or respondent or household sociodemographic characteristics.

Data tables pertaining to the specific subsections can be found by utilizing the table of contents at the beginning of this report or the links below:

A.1 Sample Characteristics

This subsection of the Annex provides all data tables related to sample characteristics. The following tables may have been duplicated or referenced in the main body of the report.

Table A.1.1: Household Characteristics, by Province

Table A.1.1: Household Characteristics, by Province				
Percent distribution of selected household characteristics by province, Angola 2023				
Characteristic	Cuanza Norte (N=1,229)	Lunda Sul (N=838)	Zaire (N=1,081)	Total (N=3,148)
Average size of households	5.3	4.6	5.3	5.1
Average number of sleeping rooms	2.3	2.1	2.4	2.3
% of households with electricity	37.0	65.2	68.8	55.4
% of households near* a public health facility	39.1	62.5	73.5	57.1
% of households near* a private health facility	11.6	47.4	33.6	28.7
% of households near* a pharmacy	25.6	49.9	68.1	46.7
% of households with finished floors	13.2	44.6	62.7	38.6
% of households with finished roofs	93.6	87.9	96.9	93.2
% of households with finished walls	22.7	40.8	46.9	35.8
Note: *Near is defined as located within five kilometers, less than 30 minutes on foot, or less than 10 minutes by car.				

Table A.1.2: Household Assets and Wealth Quintile

Table A.1.2: Household Assets and Wealth Quintile				
Percent distribution of household assets and wealth quintile by province, Angola 2023				
Percent of households with assets	Cuanza Norte (N=1,229)	Lunda Sul (N=838)	Zaire (N=1,081)	Total (N=3,148)
Asset				
Radio***	25.1	41.5	41.6	35.2
Television***	26.8	55.7	60.4	46
Simple mobile phone***	41.8	54.5	59.8	51.4
Smartphone***	2.7	16.3	19.4	12.1
Motorcycle***	10.1	22.0	14.8	15.2
Land***	91.3	42.6	73.5	72.2
Livestock***	20.2	12.1	21.8	18.6
Wealth quintile* **				
Lowest	35.3	14.0	9.3	20.7
Second	26.0	16.5	15.8	20.0
Middle	18.7	22.1	17.9	19.3
Fourth	11.3	25.1	26.0	20.0
Highest	8.6	22.4	31.0	20.0
Notes: ***p<0.001				

Table A.1.3: Sociodemographic Characteristics of Household Members

Table A.1.3: Sociodemographic Characteristics of Household Members				
Percent distribution of sociodemographic characteristics of household members by province, Angola 2023				
Characteristic	Cuanza Norte (N=6,529)	Lunda Sul (N=3,793)	Zaire (N=5,358)	Total (N=15,680)
Sex* **				
Female	52.1	55.3	52.8	53.2
Male	47.9	44.7	47.2	46.8
Residence **				
Rural	51.8	49.5	29.1	41.5
Urban	48.2	50.5	70.9	58.5
Age* **				
0–4	16.5	11.8	14.5	14.5
5–17	40.3	35.6	38.2	38.3
18 and above	43.2	52.6	47.3	47.2
Notes: **p<0.01, ***p<0.001				

Table A.1.4: Sociodemographic Characteristics of Respondents

Table A.1.4: Sociodemographic Characteristics of Respondents				
Percent distribution of sociodemographic characteristics of respondents, by province, Angola 2023				
Characteristic	Cuanza Norte (N=1,582)	Lunda Sul (N=1,193)	Zaire (N=1,486)	Total (N=4,261)
Sex**				
Female	84.4	84.6	89.9	86.3
Male	15.6	15.4	10.1	13.7
Age***				
15–24	36.7	36.5	34.7	35.9
25–34	27.1	24.8	35.3	29.2
35–44	23.9	21.3	20.7	22
≥45	12.4	17.4	9.4	12.8
Residence**				
Urban	39.1	37.4	36	37.6
Rural	60.9	62.6	64	62.4
Education***				
Primary school not completed	65.4	50.6	27.7	48.3
Primary	22.5	19.9	38.4	27.1
≥ Secondary	12.1	29.5	33.9	24.6
Religion***				
Catholic	63	9.4	29.8	36.2
Protestant	31.6	80.2	47.1	51
Other	5.4	10.4	23	12.8
Married or cohabiting***				
No	42.9	26.5	36.9	36.1
Yes	57.1	73.5	63.1	63.9
Wealth quintile***				
Lowest	35.2	14.7	7.2	19.7
Second	25.3	19	11	18.6
Middle	16.1	23.1	20.9	19.8
Fourth	12.9	23.1	27.7	20.9
Highest	10.5	20.2	33.1	21
Notes: **p<0.01, ***p<0.001				

A.2 Cross-Cutting Ideational Factors

This subsection of the Annex provides all data tables related to cross-cutting ideational factors. The tables herein summarize the prevalence of ideational factors and may be duplicates of tables in the main body of the report.

Table A.2.1: Correct Knowledge of Malaria

Table A.2.1 Correct Knowledge of Malaria												
Characteristic	Percent of respondents with correct malaria knowledge by province, Angola 2023											
	Cuanza Norte (N=1,582)			**Lunda Sul (N=1,193)**			**Zaire (N=1,486)**			**Total (N=4,261)**		
	Knowledge that fever is the main symptom of malaria	Knowledge that malaria is caused by mosquito bites	Knowledge of at least one of the main malaria prevention measures	Knowledge that fever is the main symptom of malaria	Knowledge that malaria is caused by mosquito bites	Knowledge of at least one of the main malaria prevention measures	Knowledge that fever is the main symptom of malaria	Knowledge that malaria is caused by mosquito bites	Knowledge of at least one of the main malaria prevention measures	Knowledge that fever is the main symptom of malaria	Knowledge that malaria is caused by mosquito bites	Knowledge of at least one of the main malaria prevention measures
Sex	**			*							**	
Female	51.8	78.9	76.1	78.2	90.4	91.2	58.5	91.3	93.0	61.7	86.5	86.4
Male	62.6	85.1	91.9	72.1	92.5	77.1	62.1	94.1	91.4	65.6	89.8	86.9
Age												
15–24	47.1	76.7	75.1	75.6	89.0	93.0	51.3	92.6	90.6	56.9	85.5	85.4
25–34	59.4	85.9	77.4	85.5	94.2	93.7	64.0	93.6	95.6	67.7	91.1	88.9
35–44	51.6	74.2	80.0	77.5	87.6	86.4	60.8	86.7	94.8	61.7	82.0	86.5
45 or more	63.3	86.7	88.6	68.9	93.0	77.2	63.2	91.1	86.8	65.5	90.3	83.7

Residence												
Urban	49.1	79.1	75.8	77.8	93.2	87.8	60.1	90.9	93.1	61.3	87.3	85.3
Rural	60.4	81.0	82.8	76.5	86.4	91.1	56.6	92.9	92.4	63.8	86.4	88.3
Education												
Primary school not completed	52.9	78.4	76.5	74.0	87.6	85.1	54.4	85.3	91.7	59.6	82.5	82.1
Primary	52.7	75.8	81.9	81.7	90.2	92.4	57.6	92.6	91.1	61.2	86.9	88.5
Secondary or higher	57.8	95.4	83.2	80.0	96.2	93.3	64.0	95.7	95.8	68.4	95.8	92.6
Wealth quintile												
Lowest	54.2	75.2	77.1	76.1	88.0	92.1	62.5	93.4	96.5	60.0	80.2	82.7
Second	58.8	78.5	72.4	69.4	87.6	78.4	57.8	86.9	89.7	61.7	82.9	77.7
Middle	53.6	86.9	88.8	76.5	94.2	92.3	48.5	95.7	87.9	59.5	92.5	89.7
Fourth	46.4	90.6	82.1	75.6	88.7	92.2	65.8	94.0	94.6	64.5	91.5	91.0
Highest	46.6	74.6	78.2	88.4	93.7	89.4	59.1	88.2	94.7	65.0	87.2	90.2
Total (%)	**53.5**	**79.8**	**78.5**	**77.3**	**90.7**	**89.0**	**58.9**	**91.6**	**92.8**	**62.2**	**87.0**	**86.4**
Notes: *p<0.05, **p<0.01												

Table A.2.2: Perceived Susceptibility to Malaria

Table A.2.2 summarizes the distribution of perceived susceptibility to malaria, based on responses to specific statements. Results are presented by participants' sociodemographic characteristics and are disaggregated by study province.

Table A.2.2: Perceived Susceptibility to Malaria				
Percent of respondents with specific perceived susceptibility to malaria by province, Angola 2023				
Percent of respondents who agree/disagree with the following statements:	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
DISAGREE with the following statement: *People in this community only catch malaria during the rainy season.*	31.9	33.8	50.1	***38.6
AGREE with the following statement: *Almost every year, a person in this community catches severe malaria.*	57.1	46.6	51.0	**52.0
AGREE with the following statement: *When your child has a fever, you are almost always afraid it is malaria.*	62.3	52.7	72.3	***62.9
AGREE with the following statement: *During the rainy season, you are afraid almost every day that a member of your family will suffer from malaria.*	68.1	64.4	70.5	***67.8
Percent of respondents who perceive susceptibility to malaria	**53.1**	**45.8**	**62.6**	**54.2**
Sex				
Female	53.2	42.9	61.8	53.3
Male	52.5	62.1	69.7	60.0
Age			*	
15–24	49.0	44.9	56.0	50.1
25–34	54.0	55.7	67.5	59.9
35–44	63.0	47.2	66.3	59.7
≥45	44.0	32.2	60.8	43.5
Residence				
Urban	50.7	42.1	61.1	51.8
Rural	56.7	52.0	65.4	58.2
Education	*	*	**	
Primary school not completed	56.6	42.6	68.9	54.7
Primary	42.8	36.7	50.4	45.2

≥ Secondary	52.9	57.7	71.3	63.2
Wealth quintile	*		*	
Lowest	54.6	47.4	75.4	55.6
Second	58.2	44.0	69.9	56.4
Middle	58.0	43.0	57.2	52.6
Fourth	38.6	42.3	59.4	49.2
Highest	45.5	53.8	63.6	57.5
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.2.3: Perceived Severity of Malaria

Table A.2.3 presents the distribution of participants' perceived severity of malaria. An individual's level of perceived severity is based on their level of agreement with several statements. Results are presented by participants' sociodemographic characteristics and are disaggregated by study province.

Table A.2.3: Perceived Severity of Malaria				
Percent of respondents with perceived severity of malaria by province, Angola 2023				
Percent of respondents who agree/disagree with the following statements:	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
DISAGREE with the following statement: *You are not afraid of malaria, because it can be treated easily.****	52.1	65.2	61.9	59.2
DISAGREE with the following statement: *Only weak children can die of malaria.****	57.8	64.5	75.1	65.6
AGREE with the following statement: *Each case of malaria can potentially lead to death.****	64.4	41.2	54.9	54.4
DISAGREE with the following statement: *When someone you know has malaria, you usually expect them to recover completely within a few days.****	19.3	30.1	21.2	23.1
Percent of respondents who perceive malaria severity**	**37.6**	**34.3**	**41.1**	**37.8**
Sex				
Female	38.2	35.1	41.2	38.4
Male	34.5	30.3	40.1	34.5
Age		*		*
15–24	39.1	44.2	41.1	41.3
25–34	39.8	24.9	39.2	35.9
35–44	36.9	29.8	39.9	35.9
≥45	29.7	32.6	50.6	36.0
Residence				
Urban	39.3	34.2	40.5	38.2
Rural	34.9	34.6	42.0	37.1
Education			***	***
Primary school not completed	33.8	26.2	39.4	32.6
Primary	44.3	45.5	39.5	42.2
≥ Secondary	45.6	40.7	44.2	43.2

Wealth quintile			***	***
Lowest	37.2	25.4	30.6	33.8
Second	30.5	24.1	31.8	28.9
Middle	31.7	37.2	43.5	37.8
Fourth	57.3	47.3	45.0	48.5
Highest	41.3	32.3	41.6	39.0
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.2.4: Interpersonal Communication Regarding Malaria

Table A.2.4 presents data regarding participants' reporting of IPC regarding malaria in the six months prior to data collection. This includes reports of an individual talking about malaria with their spouse or friend/family member. Results are presented by participants' sociodemographic characteristics and are disaggregated by study province.

Table A.2.4: Interpersonal Communication Regarding Malaria								
Percent of respondents reporting IPC regarding malaria by province, Angola 2023								
	Cuanza Norte		**Lunda Sul**		**Zaire**		**Total**	
	(N=1,582)	**(N=1,602)**	**(N=1,193)**	**(N=1,568)**	**(N=1,486)**	**(N=1,523)**	**(N=4,261)**	**(N=4,693)**
	% who talked about malaria with their spouse/partner in the previous six months	% who spoke of malaria with a friend or family member in the previous six months	% who talked about malaria with their spouse/partner in the previous six months	% who spoke of malaria with a friend or family member in the previous six months	% who talked about malaria with their spouse/partner in the previous six months	% who spoke of malaria with a friend or family member in the previous six months	% who talked about malaria with their spouse/partner in the previous six months	% who spoke of malaria with a friend or family member in the previous six months
Sex				*	***	***	***	***
Female	12.9	8.2	10.4	9.2	19.1	18.5	14.3	12.1
Male	16.5	17.3	26.0	25.2	35.6	26.5	25.4	22.2
Age				**	**	****	**	******
15–24	14.5	8.7	13.5	11.0	23.5	16.3	16.7	11.9
25–34	14.7	9.4	12.8	9.9	23.0	23.8	17.3	15.4
35–44	9.4	5.7	17.7	15.2	18.8	18.6	15.4	12.5
45 and above	18.3	19.8	10.4	11.2	20.2	15.1	14.8	15.2
Residence	***							
Urban	12.5	8.8	11.7	10.0	21.9	22.2	15.5	13.8
Rural	15.1	10.8	16.8	14.3	21.3	14.2	17.5	12.9
Education								

Primary school not completed	10.9	6.4	9.4	6.2	18.3	12.3	11.8	7.5
Primary	18.8	11.4	10.0	9.3	18.1	18.8	16.5	14.5
Secondary or higher	19.7	23.2	23.8	22.5	28.7	25.7	25.3	24.1
Wealth quintile								
Lowest	12.8	7.4	14.1	8.9	18.5	10.8	14.0	8.2
Second	12.9	4.9	8.5	6.1	18.4	12.2	12.4	6.7
Middle	18.0	16.7	11.1	8.4	13.6	17.2	13.9	14.1
Fourth	8.6	12.8	9.2	7.4	29.5	22.9	16.7	15.6
Highest	18.0	13.3	27.2	27.4	23.2	21.9	23.6	21.8
Total (%)	**13.6**	**9.6**	**13.6**	**11.6**	**21.7**	**19.3**	**16.3**	**13.5**
Notes: *p<0.05, **p<0.01, ***p<0.001								

Table A.2.5: Perceptions Regarding Facility-Based Health Workers

Table A.2.5 presents the distribution of participants' perceptions of facility-based health workers. This includes health workers in general, health workers providing case management, and those providing care for MIP. Results are presented by participants' sociodemographic characteristics and are disaggregated by study province.

Table A.2.5: Perceptions Regarding Facility-Based Health Workers				
Percent distribution of perceptions of facility-based health workers, Angola 2023				
Characteristic	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
Positive general perceptions of health workers***	83.0	85.2	72.2	80.0
Positive perceptions of health workers providing case management***	46.5	61.4	60.7	55.6
Positive perceptions of health workers providing care for MIP***	62.2	74.3	78.3	71.2
Percent of respondents with favorable perceptions regarding facility-based health workers* **	**81.6**	**82.5**	**92.9**	**85.7**
Sex				
Female	81.2	81.5	93.1	85.5
Male	83.7	87.9	91.2	86.9
Age		*		
15–24	80.6	84.4	95.8	86.7
25–34	84.2	72.5	94.8	85.7
35–44	78.1	86.1	86.2	82.9
≥45	85.6	88.2	90.3	87.8
Residence		*		*
Urban	81.6	86.4	92.1	86.7
Rural	81.5	75.8	94.4	84.1
Education				
Primary school not completed	81.7	81.6	90.9	83.5
Primary	79.4	82.4	93.8	87.0
≥ Secondary	84.7	84.1	93.6	88.7
Wealth quintile				
Lowest	77.1	77.8	93.6	79.3
Second	81.7	81.4	95.7	84.4
Middle	84.3	83.5	97.2	88.7

Fourth	84.6	87.4	90.0	87.9
Highest	81.6	82.5	92.9	85.7
Notes: *p<0.05, ***p<0.001				

Table A.2.6: Gender Attitudes Related to Malaria

Table A.2.6 presents distribution of participants' equitable gender attitudes related to malaria. An individual's reported gender attitudes are based on their agreement or disagreement with several statements. Results are presented by participants' sociodemographic characteristics and are disaggregated by study province.

Table A.2.6: Gender Attitudes Related to Malaria				
Percent distribution of equitable gender attitudes related to malaria, by province, Angola 2023				
Percent of respondents who agree/disagree with the following statements:	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
DISAGREE with the following statement: *When there are not enough nets, it is more important that female children sleep under the available nets rather than male children.****	57.2	62.1	67.4	62.1
DISAGREE with the following statement: *When there are not enough nets, it is more important that male children sleep under the available nets rather than female children.****	72.8	79.7	91.5	81.2
AGREE with the following statement: *A pregnant woman should feel comfortable asking her husband/spouse to go to the health facility for a prenatal consultation.****	59.8	79.8	88.1	75.2
DISAGREE with the following statement: *When there is not enough money, it is more important that male children with fever get medicine rather than female children.****	64.3	78.0	84.7	75.2
DISAGREE with the following statement: *When there is not enough money, it is more important that female children with fever get medicine rather than male children.****	60.3	74.5	79.0	70.8
Percent of respondents who perceive equitable gender attitudes related to malaria (characteristic)	73.0	82.8	93.0	82.7
Sex				*
Female	72.5	82.6	93.1	82.7
Male	75.4	84.2	92.6	82.6
Age				
15–24	73.1	85.0	95.4	83.9
25–34	76.4	74.7	94.6	83.5
35–44	70.0	82.8	86.7	78.9
≥45	70.7	90.0	92.5	83.7

Residence				
Urban	75.0	86.2	91.5	84.0
Rural	69.9	77.3	95.7	80.4
Education				***
Primary education not completed	73.5	81.4	90.7	79.2
Primary	65.2	83.1	93.1	82.4
≥ Secondary	84.5	85.2	94.9	89.6
Wealth quintile	**			***
Lowest	75.0	75.1	94.5	77.5
Second	73.2	83.2	91.6	79.8
Middle	67.7	80.7	96.2	82.3
Fourth	72.9	89.9	92.2	87.1
Highest	73.8	82.6	91.9	85.9
Notes: *p<0.05, **p<0.01, ***p<0.001				

A.3 Malaria Case Management for Children Under Five Years Old

This subsection of the Annex provides all data tables related to malaria care-seeking and treatment, particularly for children under five years old. The tables may have been duplicated in the main body of the report.

Table A.3.1: Knowledge of Malaria Care-Seeking and Treatment

Table A.3.1 presents respondent knowledge regarding malaria care-seeking and treatment. The data is presented according to respondents' sociodemographic characteristics in each province.

Table A.3.1 Knowledge of Malaria Care-Seeking and Treatment				
Percentage of respondents with specific knowledge of malaria care-seeking and treatment, according to background characteristics, Angola 2023				
Characteristic	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
Identified ACT as medicine that can be used to effectively treat malaria***	38.7	59.2	69.3	55.0
Identified SAME DAY OR NEXT DAY as time where one should seek advice or treatment after a child under five years old develops a fever***	89.6	92.8	86.8	89.5
Identified BLOOD TEST as the best way to know if someone has malaria.	80.4	87.2	87.0	84.6
Identified HEALTH FACILITY+ as the best place to go in the community if one has malaria.***	90.6	94.3	87.5	90.6
Total percent of respondents who have comprehensive knowledge of malaria care-seeking and treatment* **	30.3	50.1	48.2	42.1
Sex				*
Female	28.66	49.13	47.79	41.24
Male	39.29	55.58	51.59	47.7
Age			**	**
15–24	27.69	41.18	44.09	37.04
25–34	38.35	60.59	52.86	49.78
35–44	22.75	55.74	47.21	39.79
≥45	35.07	47.09	47.74	42.95
Residence				
Urban	29.83	50.4	49.65	42.71
Rural	31.06	49.67	45.54	41.15
Education	**	*	***	***

Primary school not completed	27.63	49.53	33.54	35.43
Primary	29.62	47.46	52.31	44.31
≥ Secondary	46.04	52.95	55.47	52.87
Wealth quintile	***	***		***
Lowest	22.85	39.47	48.73	29.65
Second	27.47	58.75	37.9	38.79
Middle	28.33	52.92	55.37	46.38
Fourth	48.31	48.94	40.23	44.87
Highest	43.13	47.91	53.57	50.06
[+] Includes the following places: public medical sector, private medical sector, and CHW. Excludes advice or treatment from a traditional practitioner, shop, market, and itinerant drug seller.				
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.3.2: Attitudes Toward Malaria Care-Seeking and Treatment

Table A.3.2 presents the distribution of favorable attitudes toward malaria care-seeking and treatment. Attitude favorability is calculated based on a participant's agreement or disagreement with several statements related to care-seeking and treatment. The data is presented according to respondents' sociodemographic characteristics in each province.

Table A.3.2: Attitudes Toward Malaria Care-Seeking and Treatment				
Percent of respondents with specific attitudes toward malaria care-seeking and treatment by province, Angola 2023				
Percent of respondents who agree/disagree with the following statements:	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
AGREE with the following statement: *The health provider is always the best person to talk to when you think your child may have malaria.****	93.5	93.6	97.6	94.9
DISAGREE with the following statement: *One does not need to continue taking all the medicine doses against malaria if the patient is already cured.****	47.5	61.9	56.2	54.6
DISAGREE with the following statement: *A parent should ask for an injection from the health provider or community health worker if they think his/her child has malaria.****	24.4	46.9	24.3	30.9
DISAGREE with the following statement: *I prefer that my child receives the medicine to treat malaria by injection rather than swallow it.****	21.4	26.9	29.3	25.7
AGREE with the following statement: *A person should only take malaria medicine if a health provider says that his/her fever really is caused by malaria.****	85.5	88.1	92.9	88.8
DISAGREE with the following statement: *If a health provider says a person does not have malaria, the patient should ask for malaria medication just in case s/he needs it. ****	41.8	55.7	47.7	47.9
DISAGREE with the following statement: *When my child has a fever, it is better to start by giving him any malaria medicine I have at home.****	54.7	60.5	51.2	55.2
AGREE with the following statement: *It is important to take all the anti-malaria pills prescribed to ensure a complete recovery.****	84.4	83.8	95.1	87.9
DISAGREE with the following statement:	47.1	57.4	54.7	52.7

*When my child has a fever, I do not go directly to the health facility; I first go elsewhere to buy him/her medicine.****				
Percent of respondents with favorable attitudes toward malaria care-seeking and treatment**	63.5	70.3	72.9	68.6
Sex				
Female	63.0	69.7	72.9	68.4
Male	65.7	73.6	72.4	70.0
Age		**		
15–24	63.3	69.0	75.8	69.0
25–34	64.3	65.1	74.3	68.6
35–44	56.1	77.5	66.2	65.3
≥45	76.3	71.6	71.6	73.3
Residence				*
Urban	67.4	73.3	73.8	71.4
Rural	57.3	65.2	71.1	64.1
Education				***
Primary school not completed	61.9	67.7	72.1	65.6
Primary	62.1	66.3	74.7	69.0
≥ Secondary	74.5	77.3	71.4	74.1
Wealth quintile	***			***
Lowest	56.6	54.7	60.1	56.6
Second	64.7	78.5	72.5	70.3
Middle	60.5	65.0	76.6	67.8
Fourth	66.7	73.6	78.3	74.2
Highest	84.1	76.1	68.8	73.7
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.3.3: Perceived Response Efficacy of Malaria Testing

Table A.3.3 presents the distribution of perceived response efficacy regarding malaria testing. Perceived response efficacy is calculated based on a participant's agreement or disagreement with several statements related to testing. The data is presented according to respondents' sociodemographic characteristics in each province.

Table A.3.3: Perceived Response Efficacy of Malaria Testing				
Percent of respondents with specific attitudes toward malaria care-seeking and treatment by province, Angola 2023				
Percent of respondents who agree/disagree with the following statements:	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
AGREE with the following statement: *A blood test for malaria is the only way to know if someone really has malaria or not.****	80.0	90.2	94.8	88.0
DISAGREE with the following statement: *A person should still take malaria medicine even if the malaria test result says that the fever is not due to malaria.****	38.3	58.4	48.6	47.7
DISAGREE with the following statement: *Parents can diagnose malaria by a person's symptoms just as well as a blood test for malaria.****	40.6	49.5	36.0	41.6
Percent of respondents with a high perceived response efficacy of malaria testing (%)*	**51.1**	**67.7**	**57.4**	**58.1**
Sex				
Female	49.8	67.9	57.0	57.5
Male	58.3	66.5	61.3	61.7
Age				
15–24	53.9	63.2	54.7	56.9
25–34	56.1	72.3	60.4	61.8
35–44	43.7	67.2	57.0	54.6
≥45	46.0	71.3	57.3	58.8
Residence			*	
Urban	50.6	69.6	60.2	59.5
Rural	51.9	64.6	52.5	55.8
Education				*
Primary school not completed	49.1	66.9	62.8	57.1
Primary	51.6	66.1	51.6	54.7
≥ Secondary	61.3	70.3	59.6	63.6

Wealth quintile	**			***
Lowest	42.8	55.9	49.8	46.5
Second	53.5	74.6	59.7	61.0
Middle	45.9	69.0	55.6	57.2
Fourth	59.3	72.6	64.6	65.9
Highest	71.4	62.7	53.5	59.4
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.3.4: Perceived Response Efficacy of Malaria Treatment.

Table A.3.4 presents the distribution of perceived response efficacy regarding malaria treatment. Perceived response efficacy is calculated based on a participant's agreement or disagreement with several statements related to treatment. The data is presented according to respondents' sociodemographic characteristics in each province.

Table A.3.4: Perceived Response Efficacy of Malaria Treatment				
Percent distribution of specific response efficacy of malaria treatment by province, Angola 2023				
Percent of respondents who agree/disagree with the following statements:	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
AGREE with the following statement: *The malaria drugs obtained from the health facilities are effective in treating malaria*	79.1	80.2	91.9	83.8
DISAGREE with the following statement: *The malaria medicines that you buy in the market are as good as the ones distributed at the health facility.****	42.7	53.8	50.9	48.7
Percent of respondents with a high perceived response efficacy of malaria treatment (%)* **	**37.1**	**45.1**	**49.5**	**43.6**
Sex				
Female	35.6	46.0	49.9	43.6
Male	44.8	40.5	46.2	43.8
Age		**	*	
15–24	34.5	44.7	44.9	40.9
25–34	42.4	40.6	56.4	47.7
35–44	36.2	38.3	50.0	41.2
≥45	34.7	60.6	39.5	46.1
Residence				
Urban	39.7	45.5	49.8	44.9
Rural	33.0	44.5	49.1	41.5
Education				*
Primary school not completed	33.4	46.9	50.1	40.8
Primary	40.9	47.6	47.2	45.4
≥ Secondary	49.6	40.5	51.6	47.4
Wealth quintile			**	***
Lowest	26.5	40.7	36.4	30.8
Second	43.8	55.6	40.9	46.7
Middle	35.6	43.2	51.9	44.0

Fourth	50.5	47.8	49.0	48.9
Highest	41.7	37.6	54.3	47.3
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.3.5: Perceived Self-Efficacy for Malaria Testing and Treatment

Table A.3.5 presents the distribution of perceived self-efficacy regarding malaria testing. Perceived self-efficacy is calculated based on a participant's agreement or disagreement with several statements related to testing. The data is presented according to respondents' sociodemographic characteristics in each province.

Table A.3.5: Perceived Self-Efficacy for Malaria Testing and Treatment				
Percent distribution of perceived self-efficacy for malaria testing and treatment by province, Angola 2023				
Percent of respondents who believe they could:	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
Find the money to take their child to the health facility at the first sign of malaria.***	95.7	92.1	97.3	95.2
Get permission from your husband or other family members to take your child to the health facility/health provider when your child has fever.***	87.4	90.0	72.0	82.9
Take your child to the health facility the same day or the next day s/he develops a fever.***	93.0	92.9	94.9	93.6
Request a blood test at the health facility when you think your child might have malaria.***	94.3	88.9	94.1	92.6
Make sure your child takes the full dose of medicine that s/he is prescribed for malaria.***	95.0	87.6	94.9	92.8
Find the money to pay for the medication the health provider recommends to treat malaria.***	95.4	89.5	95.1	93.6
Percent of respondents with perceived self-efficacy for malaria testing and treatment (%)* **	77.0	78.2	66.0	73.6
Sex	***	*	***	***
Female	75.8	77.6	63.7	72.0
Male	83.6	81.4	86.4	83.6
Age				
15–24	69.8	84.9	61.6	71.6
25–34	78.9	82.5	73.9	77.7
35–44	81.6	74.3	59.1	72.4
≥45	85.1	62.9	67.7	72.1
Residence		**		
Urban	76.6	74.3	64.8	71.8
Rural	77.6	84.7	68.1	76.6
Education				
Primary school not completed	77.3	72.0	70.6	74.4

Primary	77.1	84.7	60.7	70.8
≥ Secondary	75.3	84.5	68.2	75.2
Wealth quintile	***	*	*	***
Lowest	82.6	87.5	75.1	82.7
Second	85.8	72.7	74.6	79.7
Middle	74.8	74.3	72.6	73.8
Fourth	76.2	82.8	50.4	66.7
Highest	41.4	76.0	70.0	66.3
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.3.6: Gender Attitudes Related to Malaria Treatment

Table A.3.6 presents the distribution of respondents who perceive equitable gender attitudes related to malaria treatment. Equitable gender attitudes are calculated based on a participant's agreement or disagreement with several statements related to malaria and gender. The data is presented according to respondents' sociodemographic characteristics in each province.

Table A.3.6: Gender Attitudes Related to Malaria Treatment				
Percent distribution of equitable gender attitudes related to malaria, by province, Angola 2023				
Percent of respondents who agree/disagree with the following statements:	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
DISAGREE with the following statement: *When there is not enough money, it is more important that male children with fever get medicine rather than female children.****	64.3	78.0	84.7	75.2
DISAGREE with the following statement: *When there is not enough money, it is more important that female children with fever get medicine rather than male children.****	60.3	74.5	79.0	70.8
Percent of respondents who perceive equitable gender attitudes related to malaria treatment* **	**58.0**	**75.3**	**76.4**	**69.3**
Sex				
Female	57.2	76.0	76.2	69.2
Male	62.3	71.5	79.0	69.5
Age			**	
15–24	57.5	76.2	79.5	70.2
25–34	64.6	65.3	75.0	69.0
35–44	49.5	76.9	74.7	65.2
≥45	61.6	85.5	74.5	74.2
Residence		*		
Urban	56.5	79.7	76.3	70.1
Rural	60.4	67.9	76.8	67.9
Education				***
Primary school not completed	56.4	72.4	77.1	65.3
Primary	52.7	74.9	77.5	69.3
≥ Secondary	76.6	80.5	74.8	77.1
Wealth quintile	***			***
Lowest	69.0	63.7	80.9	69.3
Second	49.8	75.6	71.9	61.9

Middle	46.5	72.9	83.1	68.6
Fourth	53.8	81.9	76.7	73.1
Highest	64.1	78.5	72.5	72.6
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.3.7: Perceived Community Norms Regarding Malaria Testing and Treatment

Table A.3.7 presents the perceived community norms regarding malaria testing and treatment. This study assesses perceived community norms based on participants' responses to a series of questions asking about the proportion of members in their community who promptly take their own children to a health provider and/or approve of them (the respondent) taking this action.

Table A.3.7: Perceived Community Norms Regarding Malaria Testing and Treatment			
Percent distribution of perceived community norms regarding malaria testing and treatment, Angola 2023 (N=4,261)			
Characteristic	**Most people in the community take their children to a health provider on the same day or day after they develop a fever**	**Most children in the community taken to a health facility with fever get tested for malaria**	**Most people in the community approve of prompt care-seeking for children with fever**
Province	***	***	***
Cuanza Norte	51.8	53.4	12.4
Lunda Sul	58.0	59.9	15.8
Zaire	54.8	61.0	25.4
Sex			
Female	53.7	57.3	17.6
Male	60.3	61.5	18.9
Age			
15–24	53.8	59.4	19.3
25–34	56.9	56.8	18.3
35–44	52.1	53.7	15.3
≥45	56.0	62.9	16.6
Province			
Urban	56.1	60.2	19.0
Rural	52.1	54.0	15.8
Education			***
Primary school not completed	54.3	57.7	16.5
Primary	52.2	58.5	16.2
≥ Secondary	57.9	57.5	22.1
Wealth quintile			***
Lowest	54.4	55.5	16.8
Second	53.2	57.8	12.6
Middle	51.0	55.7	17.4
Fourth	53.7	59.5	23.2

Highest	60.5	60.5	18.3
Total (%)	**54.6**	**57.9**	**17.8**
Notes: ***p<0.001			

Table A.3.8: Perceptions of Health Facilities Regarding Malaria Testing and Treatment

Table A.3.8 describes respondents' perceptions of health facilities, particularly considering malaria testing and treatment. This study assesses favorable perceptions based on participants' responses to a series of questions asking whether they agree or disagree with a statement. Results are presented by sociodemographic characteristics and study province.

Table A.3.8: Perceptions Toward Health Facilities Regarding Malaria Testing and Treatment				
Percent distribution of perceptions of health facilities by province, Angola 2023				
Percent of respondents who agree/disagree with the following statements:	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
AGREE with the following statement: *Health facilities always have the medication to treat malaria.****	52.8	66.3	63.7	60.4
AGREE with the following statement: *Health facilities in this community always have a blood test kit to tell if a person has malaria.****	64.5	74.7	82.7	73.7
Percent of respondents with favorable perceptions of health facilities regarding malaria testing and treatment. **** (agreeing with both statements)*	**46.5**	**61.4**	**60.7**	**55.6**
Sex			*	
Female	45.1	61.2	61.3	55.4
Male	54.2	63.0	55.1	57.3
Age				
15–24	40.1	58.0	60.2	51.9
25–34	50.4	70.1	62.6	60.3
35–44	51.9	60.9	57.1	56.1
≥45	46.5	56.9	62.9	54.7
Residence			*	*
Urban	41.8	56.5	55.9	50.9
Rural	53.8	69.7	69.2	63.4
Education		*	***	**
Primary education not completed	50.4	67.8	67.9	59.1
Primary	39.0	63.5	61.7	55.1
≥ Secondary	39.1	49.0	53.6	49.3
Wealth quintile	**	***	***	***
Lowest	50.3	72.6	74.7	58.1
Second	48.1	79.1	71.3	61.9
Middle	43.2	68.4	66.3	60.0

Fourth	38.6	45.1	56.8	48.9
Highest	44.4	47.4	53.7	50.2
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.3.9: Perceptions of Facility-Based Health Workers Regarding Malaria Care-Seeking and Treatment

Table A.3.9 describes respondents' perceptions of facility health workers, particularly considering malaria care-seeking and treatment. This study assesses favorable perceptions based on participants' responses to a series of questions asking whether they agree or disagree with a statement. Results are presented by sociodemographic characteristics and study province.

Table A.3.9: Perceptions Towards Facility-Based Health Workers Regarding Malaria Care-Seeking and Treatment				
Percent distribution of perceptions of facility health workers by province, Angola 2023				
Percent of respondents who agree/disagree with the following statements:	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
AGREE with the following statement: *Health providers in health facilities in this community treat their patients with respect.****	83.0	85.2	72.2	80.0
AGREE with the following statement: *Health care providers at the health facilities in this community know how to treat malaria in children.****	80.7	82.0	91.2	84.7
DISAGREE with the following statement: *Health providers at the health facility in this community make parents pay for the medication to treat malaria in children less than five years old.****	65.0	74.6	80.7	73.1
DISAGREE with the following statement: *Health facility providers in your community make parents of children less than five years old pay for the blood test to see if the child has malaria.****	63.3	76.3	83.7	74.0
Percent with favorable perceptions of health facility workers regarding care-seeking/treatment ***	**73.1**	**75.0**	**84.9**	**77.6**
Sex			*	
Female	72.5	73.5	85.6	77.4
Male	76.4	83.2	78.9	79.2
Age		***		*
15–24	69.7	70.4	89.4	76.4
25–34	72.4	66.5	84.6	76.0
35–44	76.5	82.5	80.7	79.5
≥45	77.9	87.5	78.5	81.9
Residence				*
Urban	74.6	78.2	85.7	79.5

Rural	70.7	69.6	83.4	74.6
Education				
Primary school not completed	72.7	73.3	83.6	75.0
Primary	69.8	71.5	85.1	77.5
≥ Secondary	80.9	80.2	85.8	82.9
Wealth quintile	***			***
Lowest	68.2	60.7	85.5	68.7
Second	80.5	76.3	84.9	80.2
Middle	71.6	81.1	86.0	80.0
Fourth	77.6	75.9	85.6	80.7
Highest	68.1	76.2	83.4	78.6
Notes: *p<0.05, ***p<0.001				

Table A.3.10: Decision-Making for Malaria Care and Treatment

Table A.3.10 presents the distribution of decision-making regarding malaria care and treatment among respondents with partners/spouses. Results are presented by sociodemographic characteristics and study province and are disaggregated by the type of decision being made.

Table A.3.10: Decision-Making for Malaria Care and Treatment Among Respondents with Spouses/Partners								
Percent distribution of decision-making for malaria care and treatment by province, Angola 2023								
Characteristics	**Cuanza Norte (N=1,602)**		**Lunda Sul (N=1,568)**		**Zaire (N=1,522)**		**Total (N=4,692)**	
	Decision to go to the health facility when child has malaria	Decision to purchase medicine when child is sick with fever	Decision to go to the health facility when child has malaria	Decision to purchase medicine when child is sick with fever	Decision to go to the health facility when child has malaria	Decision to purchase medicine when child is sick with fever	Decision to go to the health facility when child has malaria	Decision to purchase medicine when child is sick with fever
Sex	***	**	**	***	***	***	***	***
Female	53.4	74.8	76.8	54.7	38.6	63.5	55.8	53.4
Male	76.2	86.1	85.2	72.2	70	78.4	77.8	76.2
Age					***		*	
15–24	56	80.5	80.6	58.9	25.1	68.9	55.7	56
25–34	57.8	81.6	80.5	59.7	47.6	66.3	60.4	57.8
35–44	61.6	75.2	72.1	50.8	45.6	63.2	58.8	61.6
45 and above	53.2	68.5	80	62.8	61.7	66.4	69.1	53.2
Residence				*	*			
Urban	56.7	78.9	81.3	56.1	39.4	66.5	58.9	56.7
Rural	59.1	74.4	74.1	59.8	50.8	65.9	61.5	59.1
Education	**	*	**	***	***	***	**	**
Primary school not completed	55.5	70.8	73.5	44.7	40.1	62.8	59	55.5
Primary	66	86.4	85.4	58.4	30	67.3	52.3	66

Secondary or higher	56.3	83.9	84.1	67.3	61.4	71.9	69.3	56.3
Wealth quintile				**	*			
Lowest	59.8	74.7	73	34.9	32.1	62	59.1	59.8
Second	64.7	78	76.9	54.8	44.5	68	65	64.7
Middle	60.7	74.3	81.4	46.9	38	63.2	61.1	60.7
Fourth	47.1	81.1	80.8	65.1	34.6	67.8	54.9	47.1
Highest	45.4	77	77.9	64	53.7	69.4	59.4	45.4
Total	**64.2**	**57.8**	**77.2**	**78.6**	**57.4**	**43.4**	**66.2**	**59.9**
Notes: *p<0.05, **p<0.01, ***p<0.001								

Table A.3.11: Care-Seeking and Testing of Children with Fever in the past two Weeks

Table A.3.11 presents the distribution of care-seeking and testing behavior for children under age five who presented with fever in the two weeks preceding the survey. This table also presents the percentage of children for whom advice or treatment was promptly sought, and those who had blood drawn for testing. Data is presented according to children's sociodemographic characteristics.

Table A.3.11: Care-Seeking and Testing of Children with Fever in the past two Weeks

Percentage of children under age five with fever in the two weeks preceding the survey; and among children under age five with fever, percentage for whom advice or treatment was sought, percentage for whom advice or treatment was sought the same or next day following the onset of fever, and percentage who had blood drawn from a finger or heel for testing, according to background characteristics, Angola 2023

Characteristic	Children under age five (N= 1,105)	Children under age five with fever (N=302)			
	Percentage with fever in the two weeks preceding the survey	Percentage for whom advice or treatment was sought+	Percentage for whom advice or treatment was sought from a health facility or community worker first+	Percentage for whom advice or treatment was sought the same or next day+	Percentage who had received a malaria test
Province	***				
Cuanza Norte	26.1	83.5	82.2	78.5	64.2
Lunda Sul	24.9	97.8	92.3	87.4	75.8
Zaire	32.8	92.7	90.7	73.2	84.1
Age of mother					
15–24	33.4	92.9	90.2	84.0	81.1
25–34	25.8	91.7	88.3	71.9	71.1
35–44	20.2	83.9	83.9	72.3	66.0
≥45	37.6	71.5	71.5	46.1	71.5
Residence					*
Urban	29.4	94.1	92.5	81.5	83.3
Rural	27.3	84.3	80.2	70.7	62.2
Wealth quintile					
Lowest	29.2	85.8	79.3	81.1	76.1
Second	19.8	86.5	84.9	64.7	76.2
Middle	44.0	96.2	95.6	86.5	85.8
Fourth	27.6	94.7	94.7	79.9	68.7
Highest	24.2	86.6	82.8	68.6	69.2

Total (%)	**28.6**	**90.6**	**88.2**	**77.7**	**75.9**
[+] Includes advice or treatment from the following sources: public medical sector, private medical sector, CHW. Excludes advice or treatment from a traditional practitioner, shop, market, and itinerant drug seller.					
Notes: *p<0.05, **p<0.01, ***p<0.001					

Table A.3.12: Treatment of Children with Fever

Table A.3.12 presents the percentage of children under five who had confirmed cases of malaria in the two weeks preceding the survey. This table also describes the percentage of these children receiving ACT and promptly (same or next day) receiving ACT. Data is presented according to children's sociodemographic characteristics and study provinces.

Table A.3.12: Treatment of Children with Fever

Percentage of children under age five with confirmed malaria; and among children under age five with confirmed malaria, percentage receiving ACT and prompt ACT, according to sociodemographic characteristics, Angola 2023

Characteristics	Children under age five tested for malaria (N= 217)	Children under age five with confirmed malaria (N= 145)	
	Percent with confirmed malaria	Percent receiving ACT	Percent receiving ACT promptly
Province		**	
Cuanza Norte	41.8	36.0	26.8
Lunda Sul	86.2	32.7	29.7
Zaire	74.9	78.8	57.9
Age of mother		*	*
15–24	64.4	49.4	40.3
25–34	71.2	77.0	51.2
35–44	73.8	57.8	46.6
≥45	76.8	100.0	79.2
Residence			
Urban	68.8	59.1	45.0
Rural	65.2	62.8	47.0
Wealth quintile		**	
Lowest	39.9	22.5	14.3
Second	71.8	73.7	28.5
Middle	87.0	49.4	48.1
Fourth	61.0	85.1	57.0
Highest	67.9	75.6	61.3
Total (%)	**67.7**	**60.1**	**45.6**

Notes: *p<0.05, **p<0.01, ***p<0.001

Table A.3.13. Logistic Regression Exploring Factors Associated with Prompt and Appropriate Care-Seeking for Fever in Children Under Five Years in the Past Two Weeks

Table A.3.13. Logistic Regression Exploring Factors Associated with Prompt and Appropriate Care-Seeking for Fever in Children Under Five Years in the Past Two Weeks			
Characteristic	**Percentage**	**aOR**	**95% CI**
Age group			
15–24 (Reference)	81.25	1.00	
25–34	68.51	1.03	0.57–1.89
35+	66.88	0.60	0.30–1.22
Education			
Primary school not completed (reference)	68.00	1.00	
Primary	78.92	1.06	0.54–2.09
Other			
Province			
Cuanza Norte (Reference)	77.20	1.00	
Lunda Sul	81.93	0.44	0.19–1.03
Zaire	71.09	0.55	0.27–1.14
Socioeconomic Status			
Lowest, second and middle (Reference)	77.44	1.00	
Fourth and highest	71.91	0.81	0.43–1.52
Residence			
Urban (Reference)	79.92	1.00	
Rural	66.56	0.93	0.52–1.64
Perception of susceptibility to malaria			
No (Reference)	82.92	1.00	
Yes	66.34	0.56*	0.320.97
Demonstrated complete knowledge of seeking care for malaria			
No (Reference)	71.27	1.00	
Yes	82.84	2.31**	1.28–4.18
Recall of campaign slogan			
No (Reference)	73.54	1.00	
Yes	80.43	1.26	0.58–2.72
Favorable attitudes toward seeking care for malaria			
No (Reference)	73.96	1.00	
Yes	75.71	1.09	0.57–2.07
Positive perception of response efficacy toward malaria testing			

No (Reference)	74.26	1.00	
Yes	75.71	1.00	0.55–1.83
Seeking care is a community norm			
No (Reference)	71.59	1.00	
Yes	76.56	0.72	0.40–1.29
Perceptions of malaria medication and tests available at health facility			
No (Reference)	73.08	1.00	
Yes	77.54	1.92*	1.13–3.27
Perceptions of equitable gender attitudes related to malaria			
No (Reference)	70.44	1.00	
Yes	76.58	1.17	0.54–2.54
Age of the child in months			
<12 (Reference)	73.70	1.00	
12–23	83.62	1.50	0.51–4.44
Pseudo-R2	0.0753		
Number of observations	302		
Notes: *p<0.05; **p<0.01.			

A.4 Malaria in Pregnancy

This subsection of the Annex provides all data tables related to media consumption and exposure to malaria messages. The following tables may have been duplicated or referenced in the main body of the report.

Table A.4.1: Knowledge of Intermittent Presumptive Treatment in Pregnancy

Table A.4.1 presents the percentage distribution of respondents who are aware and have specific knowledge of IPTp. Data is presented by study province and disaggregated by participant sex, age group, and level of education as well as household residence type and wealth quintile. Participants reported knowledge related to the appropriate time to first seek ANC, the number of recommended check-ups during one pregnancy, and the number of times during pregnancy a woman should receive medicine to keep her from getting malaria.

Table A.4.1: Knowledge of IPTp				
Percent distribution of respondents with specific knowledge of IPTp by province, Angola 2023				
Percent of respondents who correctly answer the following questions:	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
*When should a pregnant woman go for pregnancy care for the first time?****	21.7	20.4	42.1	28.2
*How many times should a woman receive check-up during one pregnancy?****	73.9	84.9	84.9	80.8
*How many times during her pregnancy should a woman receive medicine to keep her from getting malaria?****	62.0	77.2	70.6	69.3
Percent of respondents with comprehensive knowledge of IPTp*	**15.8**	**15.4**	**30.7**	**20.7**
Sex	*	**		***
Female	17.7	16.8	31.4	22.3
Male	5.0	8.1	24.5	10.9
Age			**	***
15–24	22.4	12.3	33.1	22.9
25–34	15.7	18.6	29.4	22.0
35–44	9.4	15.1	32.9	18.5
≥45	8.6	17.9	22.3	15.7
Residence			**	*
Urban	19.4	15.0	33.1	22.9
Rural	10.1	16.1	26.5	17.2
Education				***

Primary school not completed	17.5	18.3	27.5	19.7
Primary	17.2	13.3	32.8	23.8
≥ Secondary	3.8	12.0	31.1	19.4
Wealth quintile				**
Lowest	17.1	12.4	24.1	17.0
Second	21.0	32.7	29.1	26.1
Middle	8.0	8.4	42.3	20.4
Fourth	7.8	14.2	29.8	19.8
Highest	20.2	10.8	26.2	20.8
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.4.2: Attitudes Toward IPTp

Table A.4.2 presents the distribution of favorable or unfavorable attitudes toward IPTp. Attitude favorability is calculated based on a participant's agreement or disagreement with several statements related to IPTp care-seeking and treatment. The data is presented according to respondent and household sociodemographic characteristics in each province.

Table A.4.2: Attitudes Toward IPTp				
Percent of respondents with specific attitudes toward IPTp by province, Angola 2023				
Percent of respondents who agree/disagree with the following statements:	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
AGREE with the following statement: *It is okay for pregnant women to take the medicine to prevent malaria on an empty stomach.*	33.1	56.2	24.6	36.9
DISAGREE with the following statement: *Even if a woman thinks she may be pregnant, she should wait a few months before she sees a health provider.*	33.4	44.4	38.7	38.4
DISAGREE with the following statement: *A woman who has given birth before does not need to see a health provider as soon as she thinks she might be pregnant.*	41.2	62.4	56.2	52.4
AGREE with the following statement: *The medications given to pregnant women to prevent them from getting malaria are safe for them and their babies.*	81.9	76.8	90.1	83.2
AGREE with the following statement: *A pregnant woman must take several doses of the medicine to prevent malaria during pregnancy.*	82.8	70.4	85.3	80.1
Percent of respondents with favorable attitudes toward IPTp	63.6	77.7	68.5	69.4
Sex		*		
Female	62.7	78.6	68.3	69.2
Male	68.3	72.7	70.5	70.3
Age				
15–24	61.2	72.6	71.1	67.8
25–34	65.3	81.0	74.3	72.9
35–44	66.7	79.5	57.0	67.2
≥45	61.0	81.5	62.7	69.5
Residence				
Urban	64.3	74.4	70.2	69.3

Rural	62.5	83.2	65.5	69.4
Education				*
Not completed primary	61.9	76.4	68.2	67.5
Primary	58.9	78.5	70.3	68.5
≥ Secondary	81.4	79.4	66.8	73.9
Wealth quintile	**			***
Lowest	52.3	69.4	64.3	57.4
Second	63.3	82.3	64.3	69.1
Middle	68.0	73.3	71.8	71.2
Fourth	76.5	83.1	73.3	77.2
Highest	79.7	78.3	64.7	71.3
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.4.3: Perceived Severity of Malaria in Pregnancy

Table A.4.3 describes the percentage of respondents who hold perceptions that malaria during pregnancy is severe. Perceived severity is calculated based on the respondents' agreement or disagreement with certain statements. Data is presented by study province and disaggregated by participant age, sex, and level of education, as well as household residence type and wealth.

Table A.4.3: Perceived Severity of MIP				
Percent of respondents with specific perceived severity of MIP by province, Angola 2023				
Percent of respondents who agree/disagree with the following statements:	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
AGREE with the following statement: *When a pregnant woman gets malaria, the effect on her and her unborn child is very serious.*	87.6	87.6	91.9	89.0
AGREE with the following statement: *Pregnant women are more likely to die from malaria compared to women who are not pregnant.*	75.7	78.8	72.7	75.6
Percent of respondents with perceived severity of MIP	**76.8**	**76.1**	**74.1**	**75.7**
Sex				
Female	77.2	75.9	74.2	75.7
Male	75.1	77.5	73.6	75.5
Age			*	
15–24	78.6	80.7	66.5	75.2
25–34	77.3	78.7	80.6	79.0
35–44	79.9	71.0	75.5	76.0
≥45	64.8	69.1	74.8	69.0
Residence				
Urban	76.9	78.9	76.3	77.3
Rural	76.8	71.4	70.2	73.1
Education				
Primary school not completed	77.6	73.8	72.5	75.5
Primary	77.2	84.2	72.3	76.3
≥ Secondary	71.7	74.6	77.5	75.4
Wealth quintile				
Lowest	72.3	75.1	65.5	72.1
Second	79.2	78.8	79.2	79.1
Middle	77.7	67.7	83.6	76.4

Fourth	82.5	80.0	69.5	75.8
Highest	78.0	79.6	72.1	75.3
Notes: *p<0.05				

Table A.4.4: Perceived Response Efficacy of IPTp

Table A.4.4 presents the distribution of perceived response efficacy regarding IPTp. Perceived response efficacy is calculated based on a participant's agreement or disagreement with several statements related to IPTp. The data is presented according to respondents' sociodemographic characteristics in each province.

Table A.4.4: Perceived Response Efficacy of IPTp				
Percent distribution of specific response efficacy of IPTp by province, Angola 2023				
Percent of respondents who agree/disagree with the following statements:	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
AGREE with the following statement: *Consulting health facility providers during pregnancy is a way to make sure the baby and mother are healthy.****	90.6	89.3	97.5	92.6
AGREE with the following statement: *The medicine given to pregnant women to prevent malaria works well to keep the mother healthy.****	86.8	86.2	95.7	89.7
AGREE with the following statement: *Pregnant women should still take the medicine that is meant to keep them from getting malaria even if they sleep under nets every night.****	86.1	86.2	92.4	88.3
Percent of respondents with perceived response efficacy of IPTp* **	**91.0**	**89.2**	**98.0**	**92.8**
Sex				
Female	90.9	88.1	98.0	92.6
Male	91.5	95.0	97.2	94.1
Age			***	
15–24	93.7	92.9	95.9	94.2
25–34	94.6	92.4	98.9	95.8
35–44	85.7	91.0	99.8	91.7
≥45	85.6	74.4	98.2	84.3
Residence				
Urban	88.9	86.1	98.9	91.6
Rural	94.3	94.3	96.3	94.9
Education	*			***
Primary school not completed	89.8	82.8	97.3	89.1
Primary	90.9	95.4	98.6	95.5
≥ Secondary	97.7	96.0	97.8	97.2

Wealth quintile				*
Lowest	87.6	94.7	100.0	90.7
Second	89.8	85.5	95.0	89.6
Middle	94.0	78.9	98.7	90.6
Fourth	95.0	95.0	98.1	96.4
Highest	95.9	93.6	98.0	96.4
Notes: *p<0.05, ***p<0.001				

Table A.4.5: Perceived Self-Efficacy for ANC and IPTp—Women

Table A.4.5 presents the distribution of perceived self-efficacy regarding ANC and IPTp, specifically among women. Perceived self-efficacy is calculated based on a participant's agreement or disagreement with several statements related to attending ANC and taking or requesting IPTp. The data is presented according to respondents' sociodemographic characteristics in each province.

Table A.4.5: Perceived Self-Efficacy for ANC and IPTp–Women				
Percent of respondents with perceived self-efficacy for ANC and IPTp among women by province, Angola 2023				
Percent of women who believe they can:	**Cuanza Norte (N=1,251)**	**Lunda Sul (N=961)**	**Zaire (N=1,256)**	**Total (N=3,476)**
Go for antenatal care as soon as I think I might be pregnant***	92.0	87.3	83.3	87.6
Convince my spouse to accompany me spouse/partner to the health facility for antenatal care	85.3	83.3	88.4	85.8
Go to at least four antenatal care appointments at the health facility***	86.5	82.0	91.2	86.9
Go for antenatal care even if my religious leader does not agree*	90.8	82.8	87.7	87.4
Take the medicine to prevent malaria at least three times during pregnancy**	90.6	89.1	92.0	90.6
Request the medicine that helps to prevent malaria when I go for antenatal care***	86.7	89.4	89.0	88.3
Percent of women with perceived self-efficacy for ANC and IPTp* **	**70.3**	**67.2**	**62.2**	**66.6**
Age				
15–24	73.2	75.2	59.4	69.1
25–34	76.3	78.3	68.1	73.2
35–44	60.9	59.7	60.4	60.4
≥45	63.5	36.3	51.1	49.4
Residence				
Urban	68.2	61.4	65.5	65.3
Rural	73.6	76.9	56.0	68.7
Education			*	***
Primary school not completed	70.9	58.4	53.8	63.9
Primary	64.2	77.7	63.4	66.7
≥ Secondary	80.8	76.1	68.1	72.6
Wealth quintile	***			
Lowest	73.0	69.6	57.6	70.5

Second	71.0	61.2	58.0	65.4
Middle	68.5	62.7	64.0	64.8
Fourth	59.3	79.7	66.7	69.3
Highest	74.4	61.3	59.5	62.7
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.4.6: Perceived Self-Efficacy for ANC and IPTp—Men

Table A.4.6 presents the distribution of perceived self-efficacy regarding ANC and IPTp, specifically among men. Perceived self-efficacy is calculated based on a participant's agreement or disagreement with several statements related to ANC and IPTp. The data is presented according to respondents' sociodemographic characteristics in each province.

Table A.4.6: Perceived Self-Efficacy for ANC and IPTp—Men				
Percent of respondents with perceived self-efficacy for ANC and IPTp among men by province, Angola 2023				
Percent of men who believe they can:	**Cuanza Norte (N=323)**	**Lunda Sul (N=232)**	**Zaire (N=230)**	**Total (N=785)**
Support my spouse/partner to go for antenatal care as soon as she thinks she might be pregnant.	95.0	94.9	95.0	95.0
Accompany my spouse to the health facility for antenatal care.	96.2	95.5	92.3	95.0
Support my spouse/partner to go for at least four antenatal care appointments at the health facility during pregnancy.	96.5	94.5	96.2	95.8
Support my spouse/partner to go for antenatal care even if my religious leader does not agree.	93.1	93.5	93.8	93.4
Support my spouse/partner to take the medicine to prevent malaria at least three times during pregnancy.	92.7	92.1	94.9	93.1
Support my spouse/partner to request the medicine that helps to prevent malaria when she goes for antenatal care.	95.5	96.0	95.3	95.6
Percent of men with perceived self-efficacy for ANC and IPTp	**85.0**	**86.6**	**80.8**	**84.5**
Age		*		
15–24	88.4	90.6	87.6	89.3
25–34	85.8	84.8	92.1	87.0
35–44	81.7	87.3	70.7	79.9
≥45	86.2	85.5	83.1	85.1
Residence				
Urban	87.7	85.9	81.5	85.6
Rural	81.2	87.9	80.0	82.8
Education				
Primary school not completed	80.7	84.8	87.4	83.7
Primary	84.3	86.4	72.0	81.8
≥ Secondary	88.8	88.9	82.4	86.8
Wealth quintile				

Lowest	78.0	84.2	82.7	80.4
Second	89.1	81.7	77.9	85.2
Middle	87.0	93.4	87.4	89.3
Fourth	85.8	77.8	74.5	80.1
Highest	86.2	93.5	80.2	86.2
Notes: *p<0.05				

Table A.4.7: Perceived Community Norms Regarding IPTp

Table A.4.7 presents the perceived community norms regarding IPTp. This study assesses perceived community norms based on participants' responses to a series of questions asking about the proportion of women in their community who (1) go to ANC at least four times when pregnant and (2) take medicine to prevent malaria when they are pregnant. Participants also reported whether they believe others in the community approve of women taking these actions.

Table A.4.7: Perceived Community Norms Regarding IPTp			
Percent of respondents with perceived community norms regarding IPTp by province, Angola 2023			
Percent of respondents who perceive that:	*Most women in their community go to antenatal care at least four times when they are pregnant (N=4,261)*	*Most women in your community take medicine to prevent malaria when they are pregnant (N=4,261)*	*Most people in your community approve of pregnant women taking the medicine to prevent malaria (N=4,261)*
Province	***	***	***
Cuanza Norte	45.5	43.1	18.6
Lunda Sul	61.1	58	17.2
Zaire	55.2	51.8	22.8
Sex	**		
Female	53.8	50.4	19.6
Male	50.7	50.2	19.8
Age			*
15–24	49.1	48.2	22.2
25–34	57.3	52.2	18.3
35–44	55.1	50	18.7
≥45	53.2	53.2	17.1
Residence			
Urban	53.9	51.7	21.6
Rural	52.4	48.2	16.4
Education			***
Primary school not completed	53.9	49.7	17.5
Primary	44.8	45.6	19.8
Secondary	61.7	57.1	23.7
Wealth quintile	***	**	***
Lowest	49.2	48.1	15.8
Second	55	49.1	21
Middle	50.3	48.3	15.3
Fourth	49.6	49	24

Highest	62.4	57.1	21.7
Percent of respondents with perceived community norms	**53.3**	**50.4**	**19.6**
Notes: *p<0.05, **p<0.01, ***p<0.001			

Table A.4.8: Equitable Gender Attitudes Regarding Malaria in Pregnancy

Table A.4.8 presents the distribution of equitable gender attitudes regarding ANC. Equitable gender attitudes were calculated based on a participant's reported perceptions. Data is presented by study province and is disaggregated by participants' sex, age group, and level of education, as well as household residence type and wealth quintile.

Table A.4.8: Equitable Gender Attitudes Regarding MIP				
Percent of respondents with equitable gender attitudes regarding ANC, by province, Angola 2023				
Percent of respondents who perceive that:	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
A pregnant woman should feel comfortable asking her husband/spouse to go to the health facility for a prenatal consultation.***	**59.8**	**79.8**	**88.1**	**75.2**
Sex				
Female	58.8	79.7	87.7	75.0
Male	65.0	80.2	91.6	76.7
Age			**	
15–24	58.4	76.9	86.0	72.9
25–34	63.9	83.1	91.5	80.0
35–44	61.0	75.6	88.5	73.9
≥45	52.5	86.2	81.8	73.1
Residence		*		
Urban	61.5	77.5	89.4	75.9
Rural	57.2	83.6	85.7	74.1
Education				***
Primary school not completed	58.3	82.0	85.8	70.9
Primary	60.2	77.1	87.7	77.0
≥ Secondary	67.1	77.9	90.4	81.8
Wealth quintile	***			***
Lowest	41.7	84.9	85.4	56.4
Second	67.8	78.0	90.6	75.4
Middle	60.7	91.3	90.2	81.7
Fourth	72.5	69.0	84.5	76.8
Highest	84.1	76.9	89.5	85.0
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.4.9: Perceptions of Facility-Based Health Workers Regarding Malaria in Pregnancy

Table A.4.9 summarizes the percentage of respondents who hold favorable perceptions of facility health workers regarding MIP, based on respondents' agreement or disagreement with several statements. Data is presented by study province and disaggregated by respondents' sex, age, level of education as well as household residence type and wealth quintile.

Table A.4.9: Perceptions of Facility-Based Health Workers Regarding MIP				
Percent of respondents with specific perceptions of facility health workers, by province, Angola 2023				
Percent of respondents who agree/disagree with the following statements:	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
AGREE with the following statement: *Health providers at the health facility in this community always offer the medicine to prevent malaria in pregnant women.****	71.6	77.7	81.8	76.8
DISAGREE with the following statement: *Health providers at the health facilities in this community always give pregnant women the medicine to prevent malaria only if she has eaten beforehand.**	25.3	36.5	25.4	28.6
DISAGREE with the following statement: *If a woman goes to the health facility during the first two months of her pregnancy, the health providers will send her away.****	55.3	57.7	72.5	61.8
DISAGREE with the following statement: *If a pregnant woman goes to the health facility without her husband/partner, the health providers will send her away.****	54.2	71.7	71.6	65.2
Percent of respondents with favorable perceptions of facility health workers	**52.0**	**63.2**	**66.4**	**60.2**
Sex	*	*		
Female	51.6	62.8	66.3	60.0
Male	54.3	65.5	67.3	61.2
Age		*		
15–24	51.1	66.2	59.7	58.3
25–34	58.0	58.3	75.1	65.1
35–44	46.6	63.7	64.8	57.2
≥45	52.3	63.5	62.7	59.3
Residence				
Urban	50.5	68.6	67.3	61.6
Rural	54.4	54.3	64.9	57.8

Education				**
Primary school not completed	52.7	59.4	59.9	56.2
Primary	42.5	64.5	68.5	59.6
≥ Secondary	65.8	68.9	69.5	68.6
Wealth quintile			*	***
Lowest	51.2	58.2	56.2	53.3
Second	46.9	66.5	56.0	54.5
Middle	46.4	56.3	66.8	57.1
Fourth	55.4	71.2	69.9	67.0
Highest	71.6	62.7	69.0	67.7
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.4.10: Decision-Making Regarding Antenatal Care

Table A.4.10 summarizes the distribution of respondents involved in decision-making concerning ANC. Results are presented by province and disaggregated by respondents' sex, age, level of education, household residence type, and household wealth quintile.

Table A.4.10: Decision-Making Regarding ANC				
Percent distribution of respondents involved in decision-making regarding ANC by province, Angola 2023				
Percent of respondents involved in decision-making regarding ANC	**Cuanza Norte (N=1,017)**	**Lunda Sul (N=879)**	**Zaire (N=969)**	**Total (N=2,865)**
Sex			*	***
Female	56.6	76.7	51.1	61.2
Male	61.0	66.9	64.1	64.1
Age	*			
15–24	56.8	72.2	46.0	59.0
25–34	54.6	75.3	57.3	61.4
35–44	64.5	74.4	50.0	62.2
≥45	51.5	77.2	61.6	67.2
Residence				
Urban	56.5	75.4	51.0	61.0
Rural	58.7	73.3	57.0	63.0
Education		**	**	**
Primary school not completed	56.8	70.0	42.2	58.8
Primary	66.8	81.6	47.6	60.5
≥ Secondary	45.6	79.3	68.8	69.0
Wealth quintile		*	**	**
Lowest	58.8	65.9	36.8	57.4
Second	66.5	74.7	47.1	65.6
Middle	63.1	78.9	39.8	61.5
Fourth	41.8	78.3	56.6	60.8
Highest	44.4	70.7	63.8	62.8
Total (%) * **	**57.5**	**74.6**	**53.2**	**61.7**
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.4.11: Interpersonal Communication Regarding Antenatal Care

Table A.4.11 describes IPC regarding ANC in each study province. Specifically, this table summarizes the distribution of respondents who reported discussing ANC with their spouse/partner. Data is disaggregated by sex, age, residence type, level of education, and household wealth quintile.

Table A.4.11: IPC Regarding ANC				
Percent distribution of respondents who discussed attending ANC with their spouse/partner by province, Angola 2023				
Percent of respondents discussing ANC attendance with their spouse or partner	**Cuanza Norte (N=1,602)**	**Lunda Sul (N=1,568)**	**Zaire (N=1,522)**	**Total (N=4,692)**
Sex				
Female	37.0	46.9	57.4	47.3
Male	51.0	48.5	69.6	55.3
Age	*	**	***	***
15–24	41.0	61.3	57.5	52.7
25–34	43.3	49.3	70.3	55.1
35–44	33.0	48.2	50.4	44.0
≥45	39.9	24.0	46.2	33.6
Residence		*		
Urban	40.7	42.9	56.7	47.1
Rural	38.5	54.3	63.9	51.3
Education	***	***	**	***
Primary school not completed	34.4	30.5	53.9	36.8
Primary	47.7	62.3	56.1	55.2
≥ Secondary	54.4	70.1	67.5	66.3
Wealth quintile	***	***	**	***
Lowest	26.6	43.5	41.1	32.9
Second	41.6	28.5	55.2	39.6
Middle	40.4	39.3	64.5	48.0
Fourth	42.7	64.2	61.5	57.7
Highest	69.9	61.2	59.7	61.7
Total (%) * **	**39.7**	**47.2**	**59.3**	**48.8**
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.4.12: Intention to Use IPTp and Attend Antenatal Care

Table A.4.12 describes women's intention to use IPTp. This data only refers to women and the partners of women who reported that they intend to have children/more children. The table presents the distribution of those who intend to use IPTp in their next pregnancy. Data is presented by province and disaggregated according to respondent sex, age group, residence type, level of education, and household wealth quintile.

Table A.4.12: Intention to Use IPTp and Attend ANC

Among women who intend to have more children, percent distribution of respondents who intend to use IPTp or access ANC services in next pregnancy by province, Angola 2023

Characteristics	Cuanza Norte (N=473)			Lunda Sul (N=384)			Zaire (N=650)			Total (N=1,507)		
	% who intend to use IPTp in next pregnancy	% who intend to attend ANC in first trimester	% who intend to attend at least 4 ANC visits	**% who intend to use IPTp in next pregnancy**	% who intend to attend ANC in first trimester	% who intend to attend at least 4 ANC visits	**% who intend to use IPTp in next pregnancy**	% who intend to attend ANC in first trimester	% who intend to attend at least 4 ANC visits	**% who intend to use IPTp in next pregnancy**	% who intend to attend ANC in first trimester	% who intend to attend at least 4 ANC visits
Age												
15–24	93.1	60.9	69.1	97.9	56.7	82.1	96.5	75.4	83.0	95.7	65.2	77.9
25–34	93.7	59.6	84.4	97.1	66.9	78.3	99.8	65.7	89.9	97.6	64.4	85.7
35–44	81.0	48.8	63.6	100.0	47.5	74.9	96.5	72.9	91.0	92.6	56.3	76.5
≥45	26.3	67.5	13.7	100.0		100.0	100.0	100.0	100.0	47.2	69.2	38.2
Residence												
Urban	93.8	58.5	72.7	99.6	57.9	84.9	98.1	72.6	86.9	97.1	64.5	82.0
Rural	88.1	61.3	72.5	95.1	60.7	72.6	97.7	67.9	85.9	93.8	63.6	77.7
Education												
Primary school not completed	91.8	59.1	73.9	97.3	70.2	71.9	93.4	69.6	80.9	93.6	64.2	75.0

Primary	89.4	66.8	65.9	99.0	71.5	70.5	98.6	65.0	90.0	96.2	66.7	79.9
Secondary or higher	96.1	46.0	80.9	97.7	44.1	91.1	99.4	78.2	85.7	98.4	61.6	87.1
Wealth quintile												
Lowest	86.8	55.9	64.5	100.0	75.5	58.5	94.2	68.2	87.7	90.6	61.8	66.6
Second	93.1	67.3	84.5	100.0	81.9	72.0	96.4	69.0	80.1	96.0	72.2	79.6
Middle	93.4	67.3	75.5	95.3	57.9	74.0	98.6	75.4	90.5	96.1	68.2	81.5
Fourth	89.1	51.4	84.8	99.8	40.0	90.1	98.5	80.0	85.2	97.3	64.0	86.5
Highest	99.7	55.8	61.0	95.2	57.3	88.5	98.0	60.8	87.3	97.6	58.8	82.4
Total (%)	91.7	59.5	72.6	97.9	59.0	80.1	97.9	71.0	86.6	95.9	64.2	80.4

Table A.4.13: Antenatal Care Attendance

Table A.4.13 describes ANC attendance among women. All respondents for this table were women with a live birth in the past two years. Data presented includes the percentage of women who reported attending at least one ANC visit, attending at least four ANC visits, attending at least one ANC while accompanied by their spouse, and attending at least one ANC visit and receiving an ITN. Data is disaggregated by respondent age group, residence type, study province, and household wealth quintile.

Table A.4.13: ANC Attendance					
Among women who intend to have more children, percent distribution of respondents who intend to use IPTp in their next pregnancy by province, Angola 2023					
Characteristics	Attending at least one antenatal visit	Attending at least four antenatal visits (N=1,432)	Attending first antenatal visit in the first trimester of pregnancy (N=1,432)	Attending at least one antenatal visit accompanied by their spouse (N=1,432)	Attending at least one antenatal visit and receiving an ITN (N=1,432)
Province	***	***	***		
Cuanza Norte	86.2	60.2	41.8	44.4	66.4
Lunda Sul	91.1	71	34	32	59.6
Zaire	97	76.1	62.3	52.9	69.7
Age					
15–24	91.7	64.2	43.9	42.8	65.1
25–34	90.9	72.8	49.1	47.7	67.1
35–44	88.6	70.4	48.1	37.9	65.8
≥45	68	49	18	46.6	49
Residence					*
Urban	91.9	66.5	44.2	42.1	69.1
Rural	89	69.9	48.7	46.9	60
Education	***	***		**	
Primary school not completed	88.7	57.6	47	42.1	61.8
Primary	90.8	70.8	46.1	48.6	65.3
≥ Secondary	95.7	88.7	43.2	40.9	75.4
Wealth quintile	***	***	**	*	
Lowest	80.4	42	42.6	50.3	54.6
Second	87.8	63.8	50.4	43.8	57.4
Middle	94.8	70	44.8	36.1	67.7
Fourth	98.2	88.3	42.5	40.6	81.8
Highest	95.9	84.8	52.3	49.5	66.7

Total (%)	**90.7**	**67.8**	**45.9**	**43.9**	**65.7**
Notes: *p<0.05, **p<0.01, ***p<0.001					

Table A.4.14: Use of Intermittent Preventive Treatment by Women During Pregnancy

Table A.4.14 summarizes IPTp use during pregnancy among women who have given birth in the two years preceding the survey. Only data for women is presented in this table. Data is disaggregated by participant age group, the number of ANC visits they attended during the previous pregnancy, household residence type, study province, participant level of education, and household wealth quintile.

Table A.4.14 Use of IPTp by Women During Pregnancy

Percentage of women aged 15–49 with a live birth in the two years preceding the survey who, during the pregnancy that resulted in the last live birth, received one or more doses of SP/Fansidar, received two or more doses of SP/Fansidar, and received three or more doses of SP/Fansidar, according to background characteristics, Angola 2023

Characteristics	Percentage who received one or more doses of SP/Fansidar (N=1,432)	Percentage who received two or more doses of SP/Fansidar (N=1,432)	Percentage who received three or more doses of SP/Fansidar (N=1,432)
Province	***	***	***
Cuanza Norte	88.0	73.2	57.3
Lunda Sul	92.3	77.5	64.9
Zaire	97.2	89.3	75.3
Age		**	*
15–24	94.2	78.1	65.3
25–34	91.0	83.0	66.6
35–44	86.9	76.1	59.8
≥45	77.6	45.2	43.1
Residence			
Urban	93.4	80.2	66.2
Rural	89.6	77.5	62.3
Education	***	***	***
Primary school not completed	87.3	77.0	56.7
Primary	95.2	73.3	66.0
≥ Secondary	98.1	93.5	82.5
Wealth quintile	***	***	***
Lowest	83.2	70.3	54.7
Second	90.9	69.4	53.3
Middle	96.3	79.5	61.7
Fourth	96.5	89.7	79.5
Highest	95.6	91.3	79.2

Percent of women who received number of doses of IPTp	**91.9**	**79.1**	**64.7**
Notes: *p<0.05, **p<0.01, ***p<0.001			

Table A.4.15: Source of IPTp

Table A.4.15 describes the common sources of IPTp among women who gave birth in the two years prior to the study. This table also specifies the percentage of women who received one or more doses of IPTp by sociodemographic characteristics. Data is disaggregated by participant age group, resident type, study province, and household wealth quintile.

Table A.4.15: Source of IPTp				
Source of IPTp among women with a live birth in the past two years, Angola 2023				
Characteristics	**Percentage who received one or more doses of SP/Fansidar (N=1,432)**	**Sources of SP/Fansidar doses among those who received at least one dose N=1,291)**		
		ANC	Non-antenatal visit at facility	Pharmacy
Province	***	***	***	***
Cuanza Norte	88.0	97.2	39.0	5.4
Lunda Sul	92.3	91.5	13.6	4.7
Zaire	97.2	98.9	20.7	1.0
Age				*
15–24	94.2	96.9	30.4	4.9
25–34	91.0	96.2	21.4	2.5
35–44	86.9	94.9	23.0	0.8
≥45	77.6	81.7	39.0	27.8
Residence		**		
Urban	93.4	98.4	28.4	4.7
Rural	89.6	92.6	23.3	2.3
Education	***			
Primary school not completed	87.3	94.7	26.6	2.3
Primary	95.2	98.0	35.1	7.5
≥ Secondary	98.1	97.0	13.0	1.6
Wealth quintile	***	*	***	
Lowest	83.2	96.2	39.7	8.8
Second	90.9	93.1	27.5	1.9
Middle	96.3	96.4	15.3	3.4
Fourth	96.5	98.9	22.4	2.2
Highest	95.6	96.2	26.4	1.7
Total (%)	**91.9**	**96.2**	**26.5**	**3.8**
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.4.16: Logistic Regression Results Exploring Factors Associated with the Intention to Attend ANC Four Times

Table A.4.16. Logistic Regression Results Exploring Factors Associated with the Intention to Attend ANC Four Times			
Characteristic	**% intending to attend ANC at least four times**	**aOR**	**95% CI**
Province			
Cuanza Norte (Reference)	72.62	1.00	
Lunda Sul	80.09	0.83	0.56–1.25
Zaire	86.58	2.03***	1.34–3.06
Age group			
15–24 (Reference)	77.86	1.00	
25–34	85.70	0.74	0.53–1.03
35–44	76.50	0.54*	0.33–0.89
45 or more	38.23	0.21*	0.04–0.98
Religion			
Catholic (Reference)	82.50	1.00	
Protestant	81.45	0.80	0.57–1.12
Other	72.41	0.69	0.44–1.09
Primiparous			
No (Reference)	79.11	1.00	
Yes	80.86	1.76***	1.26–2.47
Residence			
Urban (Reference)	81.99	1.00	
Rural	77.68	0.83	0.63–1.11
Education level			
Primary school not completed (Reference)	74.95	1.00	
Primary	79.88	0.92	0.65–1.28
Secondary or higher	87.08	1.20	0.78–1.84
Wealth quintile			
Lowest (Reference)	66.55	1.00	
Second	79.61	1.34	0.88–2.06
Middle	81.53	2.08**	1.33–3.27
Fourth	86.50	1.85*	1.16–2.95
Highest	82.38	1.53	0.94–2.48
Close proximity to a health facility			
No (Reference)	80.46	1.00	
Yes	80.42	0.92	0.66–1.27

Perceived malaria as severe			
No (Reference)	78.05	1.00	
Yes	84.28	1.30	0.97–1.74
Perceived susceptibility to malaria			
No (Reference)	77.06	1.00	
Yes	82.84	1.11	0.84–1.48
IPC with partner or family/friends in the past six months			
No (Reference)	81.20	1.00	
Yes	76.93	0.90	0.62–1.32
Complete knowledge of ANC/IPTp			
No (Reference)	77.61	1.00	
Yes	89.71	2.40***	1.56–3.69
Complete knowledge about malaria			
No (Reference)	76.32	1.00	
Yes	83.91	0.92	0.69–1.24
Perception that IPTp and ANC are community norms			
No (Reference)	79.34	1.00	
Yes	81.58	1.07	0.81–1.41
Perception of complete self-efficacy in relation to ANC			
No (Reference)	70.97	1.00	
Yes	83.78	1.46*	1.08–1.96
Favorable perceptions about health care workers and ANC			
No (Reference)	67.42	1.00	
Yes	87.40	1.79***	1.36–2.37
Have seen or heard a malaria message in the past six months			
No (Reference)	80.82	1.00	
Yes	79.43	1.40	0.99–1.97
Pseudo-R2	0.1006		
Number of observations	1,507		
Notes: *p<0.05; **p<0.01; ***p<0.001.			

Table A.4.17: Logistic Regression Results Exploring Factors with the Intention to Attend ANC in the First Trimester

Table A.4.17. Logistic Regression Results Exploring Factors Associated with the Intention to Attend ANC in the First Trimester			
Characteristic	**% intending to attend ANC early**	**aOR**	**95% CI**
Province			
Cuanza Norte (Reference)	59.51	1	
Lunda Sul	58.96	0.74	0.52–1.05
Zaire	71.03	1.17	0.84–1.62
Age group			
15–24 (Reference)	65.19	1	
25–34	64.42	0.96	0.74–1.26
35–44	56.33	1.01	0.66–1.56
45 or more	69.21	1.86	0.34–10.10
Religion			
Catholic (Reference)	62.77	1	
Protestant	62.76	1.02	0.78–1.33
Other	72.22	1.24	0.85–1.80
Primiparous			
No (Reference)	71.37	1	
Yes	61.79	0.98	0.71–1.35
Residency			
Urban	64.46	1	
Rural	63.63	0.89	0.70–1.13
Level of education			
Primary school not completed (Reference)	64.21	1	
Primary	66.67	0.84	0.63–1.12
Secondary or higher	61.61	1.16	0.82–1.63
Socioeconomic status			
Lowest (Reference)	61.76	1	
Second	72.2	0.99	0.67–1.45
Middle	68.24	1.1	0.75–1.63
Fourth	64.02	0.72	0.49–1.07
Highest	58.84	0.93	0.61–1.42
Near a health facility			
No (Reference)	53.78	1	

Yes	68.09	1.31*	1.00–1.70
Perceived malaria as severe			
No (Reference)	63.29	1	
Yes	65.56	1.14	0.90–1.44
Perceived susceptibility to malaria			
No (Reference)	60.28	1	
Yes	66.94	1.27*	1.01–1.61
IPC with partner or family/friends in the past six months			
No (Reference)	61.55	1	
Yes	76	1.17	0.86–1.60
Complete knowledge of ANC/IPTp			
No (Reference)	62.73	1	
Yes	68.88	1.98***	1.452.69
Complete knowledge about malaria			
No (Reference)	58.19	1	
Yes	69.23	1.26	1.00–1.60
Perception of IPTp and frequency of ANC as community norms			
No (Reference)	61.84	1	
Yes	66.62	0.83	0.66–1.05
Perception of complete self-efficacy in relation to ANC			
No (Reference)	60.36	1	
Yes	65.51	1.33*	1.04–1.70
Favorable perceptions about the health technicians of the ANC			
No (Reference)	63.32	1	
Yes	64.61	1.37**	1.08–1.73
Have seen or heard a malaria message in the past six months			
No (Reference)	59.33	1	
Yes	76.41	1.25	0.95–1.64
Pseudo-R2	0.0443		
Number of observations	1,507		
Notes: *p<0.05; **p<0.01; ***p<0.001.			

A.5 Insecticide-Treated Net Use

This subsection of the Annex provides all data tables related to ITN use. The following tables and figures may have been duplicated or referenced in the main body of the report.

Table A.5.1: Knowledge of Malaria Prevention Using Insecticide-Treated Nets

Table A.5.1 presents the distribution of participants' knowledge of malaria prevention using ITNs. Results are presented by participants' characteristics and are disaggregated by study province.

Table A.5.1: Knowledge of Malaria Prevention Using ITNs				
Percent of respondents who list ITNs as a malaria prevention measure, by province, Angola 2023				
Characteristics	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
Sex				
Female	75.7	89.7	92.1	85.5
Male	91.6	76.8	90.7	86.5
Age				
15–24	74.8	92.4	90.5	85.1
25–34	77.0	92.3	94.6	88.0
35–44	79.4	83.5	92.7	84.8
≥45	88.6	76.5	86.0	83.2
Residence				
Urban	75.6	86.5	92.0	84.5
Rural	82.3	89.8	91.9	87.6
Education	***	***		***
Primary school not completed	76.1	82.9	89.8	80.8
Primary	81.9	92.4	91.0	88.5
≥ Secondary	82.6	92.9	94.9	91.9
Wealth quintile	**			***
Lowest	77.0	90.3	96.5	82.3
Second	71.8	75.3	88.6	76.2
Middle	88.1	91.8	87.9	89.3
Fourth	82.1	91.0	93.1	89.9
Highest	77.6	89.0	93.8	89.5
Total (%)	**78.2**	**87.7**	**92.0**	**85.6**
Notes: **p<0.01, ***p<0.001				

Table A.5.2: Favorable Attitudes Toward Insecticide-Treated Nets

Table A.5.2 presents the distribution of respondents' attitudes toward mosquito nets. This table specifies favorable attitudes toward ITNs based on agreement or disagreement with specific statements. Results are presented by participants' characteristics and disaggregated by study province.

Table A.5.2: Favorable Attitudes Toward ITNs				
Percent of respondents with specific attitudes toward mosquito nets by province, Angola 2023				
Percent of respondents with favorable attitudes to nets based on the following statements:	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
AGREE with the following statement: *It is easier to get a good night's sleep when I sleep under a mosquito net.****	89.1	82.2	94.2	88.8
DISAGREE with the following statement: *It is not easy to sleep under a net because every night you have to unfold it and cover the sleeping space.****	42.3	59.0	46.8	48.7
DISAGREE with the following statement: *I do not like sleeping under a mosquito net when the weather is too warm.****	45.2	62.2	42.1	49.1
DISAGREE with the following statement: *Sleeping under a net is an inconvenience for a couple that wants to have children.****	55.2	63.8	61.2	59.7
DISAGREE with the following statement: *The smell of the insecticide makes it uncomfortable for me to sleep under a mosquito net.****	42.5	51.1	36.3	42.9
AGREE with the following statement: *Mosquito nets are generally easy to use for sleeping.****	84.8	74.9	90.9	84.0
AGREE with the following statement: *Insecticide-treated nets do not pose a risk to one's health.****	61.4	54.3	72.1	63.0
AGREE with the following statement: *Mosquito nets are very useful.****	87.7	78.2	95.3	87.5
DISAGREE with the following statement: *More expensive mosquito nets are more effective than cheaper or free mosquito nets.****	35.6	50.7	54.9	46.5
DISAGREE with the following statement: *Treated mosquito nets attract bed bugs and other insects.****	34.5	42.6	45.6	40.6
Percent of respondents with favorable attitudes toward ITNs* **	68.4	72.1	80.2	73.4

Sex		*		
Female	68.2	69.8	80.3	72.9
Male	69.4	84.8	79.5	77.0
Age		**		
15–24	66.3	75.1	79.6	73.2
25–34	73.0	64.5	80.8	74.1
35–44	69.9	78.6	79.1	75.3
≥45	61.3	68.5	82.4	69.4
Residence				*
Urban	70.6	73.4	78.4	74.2
Rural	64.8	69.9	83.3	72.3
Education	*			***
Primary school not completed	66.2	64.8	76.9	67.9
Primary	67.9	78.7	83.5	77.7
≥ Secondary	80.9	80.0	79.1	79.7
Wealth quintile	***			***
Lowest	63.9	57.4	76.4	64.0
Second	71.3	79.5	87.5	77.0
Middle	65.4	62.2	77.2	68.6
Fourth	73.6	82.2	80.8	79.6
Highest	74.5	75.5	80.0	77.7
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.5.3: Favorable Attitudes Toward ITN Care

Table A.5.3 presents the distribution of participants' attitudes toward ITN care based on agreement or disagreement with specific statements. Results are presented by participants' characteristics and disaggregated by study province.

Table A.5.3: Favorable Attitudes Toward ITN Care				
Percent of respondents with specific attitudes toward mosquito nets by province, Angola 2023				
Percent of respondents with favorable attitudes to ITN care based on the following statements:	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
AGREE with the following statement: *There are actions I can take to help my mosquito net last long.****	87.0	80.6	89.4	86.0
AGREE with the following statement: *I can protect my family against malaria by taking care of my mosquito net.****	91.4	80.3	94.3	89.2
AGREE with the following statement: *Other people in this community take care of their mosquito nets.****	67.6	59.4	62.4	63.5
AGREE with the following statement: *I am confident I can fold or tie up the nets in my home every day after using them.****	84.1	80.8	88.0	84.5
AGREE with the following statement: *It is worth taking time to care for my mosquito net.****	89.7	85.9	91.6	89.2
AGREE with the following statement: *I am confident that I can prevent children from playing with the net.****	88.6	80.5	95.8	88.7
AGREE with the following statement: *An old net can still protect against malaria if it is well cared for.****	85.6	77.0	92.6	85.5
AGREE with the following statement: *I would use a net to sleep under regardless of its shape.****	74.0	73.8	82.5	76.8
Percent of respondents with favorable attitudes toward ITN care***	**93.6**	**83.3**	**96.7**	**91.7**
Sex				
Female	93.1	82.8	96.6	91.4
Male	96.5	85.8	98.0	93.4
Age				
15–24	96.6	85.7	98.0	93.8

25–34	95.0	91.4	98.7	95.6
35–44	92.1	80.4	90.3	88.3
≥45	84.8	70.1	98.6	82.4
Residence		*		
Urban	92.9	77.7	96.0	89.6
Rural	94.7	92.6	98.0	95.2
Education				**
Primary school not completed	92.8	77.9	91.9	88.1
Primary	93.5	92.4	99.0	95.9
≥ Secondary	98.5	86.3	98.0	94.0
Wealth quintile	**			**
Lowest	90.1	80.9	98.7	89.2
Second	95.6	81.4	99.7	92.2
Middle	97.9	78.9	98.6	91.7
Fourth	91.6	92.6	96.8	94.3
Highest	96.7	81.0	94.0	90.9
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.5.4: Perceived Response Efficacy of ITNs

Table A.5.4 summarizes respondents' perceived response efficacy of ITNs based on their agreement or disagreement with certain statements. Results are presented by participants' characteristics and are disaggregated by study province.

Table A.5.4: Perceived Response Efficacy of ITNs				
Percent of respondents with specific perceived response efficacy by province, Angola 2023				
Percent of respondents with perceived response efficacy based on the following statements:	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
DISAGREE with the following statement: *Mosquito nets prevent mosquito bites only when used on a bed.****	9.0	10.2	14.8	11.3
DISAGREE with the following statement: *My chances of getting malaria are the same whether or not I sleep under a mosquito net.****	44.3	55.4	59.2	52.6
AGREE with the following statement: *Sleeping under a mosquito net every night is the best way to avoid getting malaria.****	89.9	85.8	94.3	90.2
Percent of respondents with perceived response efficacy of ITNs***	**45.3**	**54.6**	**62.6**	**53.9**
Sex			*	
Female	44.4	54.3	61.6	53.3
Male	50.1	56.2	71.1	57.4
Age		***		
15–24	48.3	53.8	63.5	54.9
25–34	42.4	38.2	61.4	49.2
35–44	50.2	70.4	61.8	59.5
≥45	33.5	60.4	65.8	52.1
Residence			*	
Urban	49.2	56.5	59.7	55.0
Rural	39.3	51.4	67.8	52.1
Education	*			***
Primary school not completed	43.4	51.7	59.1	49.0
Primary	50.8	51.0	60.0	55.3
≥ Secondary	45.8	62.1	68.3	62.0
Wealth quintile	***			***
Lowest	37.0	50.9	57.6	42.6
Second	49.4	58.2	63.1	54.7

Middle	49.3	54.0	59.6	54.6
Fourth	47.4	54.6	65.8	58.0
Highest	54.6	54.7	62.8	59.0
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.5.5: Perceived Self-Efficacy to Use Insecticide-Treated Nets

Table A.5.5 describes respondents' perceived self-efficacy to use ITNs based on their response to a series of questions asking whether they feel they could or could not take certain actions. Results are presented by participants' characteristics and are disaggregated by study province.

Table A.5.5: Perceived Self-Efficacy to Use ITNs				
Percent distribution of respondents with specific self-efficacy to use ITNs by province, Angola 2023				
Percent of respondents who could do the following:	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
Sleep under a mosquito net for the entire night when there are lots of mosquitoes.***	95.5	87.9	97.3	93.9
Sleep under a mosquito net for the entire night when there are few mosquitoes.***	92.9	86.9	87.3	89.3
Sleep under a mosquito net every night of the year.***	91.9	85.5	87.8	88.6
Get all of their children to sleep under a mosquito net every night of the year.***	94.7	87.5	94.7	92.6
Percent of respondents with perceived self-efficacy to use ITNs**	**87.1**	**78.7**	**80.7**	**82.5**
Sex				
Female	87.3	77.1	80.4	81.9
Male	86.1	87.6	83.4	85.9
Age				
15–24	87.5	84.9	80.9	84.5
25–34	87.5	86.2	82.0	84.9
35–44	84.9	69.9	80.2	79.2
≥45	89.2	66.0	76.0	76.8
Residence				
Urban	87.8	75.5	80.3	81.6
Rural	85.9	84.2	81.4	83.9
Education				
Primary school not completed	87.6	74.6	80.3	82.3
Primary	86.8	85.0	83.0	84.6
≥ Secondary	84.5	81.6	78.3	80.6
Wealth quintile	*	**	**	***
Lowest	88.7	90.3	86.8	88.8
Second	89.0	77.1	82.0	84.1
Middle	84.1	71.3	87.4	81.0

Fourth	84.6	85.9	80.7	83.2
Highest	84.6	72.0	74.6	75.8
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.5.6: Perceived Community Norms Regarding ITNs

Table A.5.6 describes respondents' perceived community norms regarding ITNs. This study assesses perceived community norms based on participants' responses to a series of questions asking about the proportion of members in their community who use nets and/or approve of them (the respondent) using nets every night. Results are presented by participants' characteristics and are disaggregated by study province.

Table A.5.6: Perceived Community Norms Regarding ITNs								
Percent of respondents with perceived norms regarding ITN use by province, Angola 2023								
Characteristics	**Cuanza Norte (N=1,582)**		**Lunda Sul (N=1,193)**		**Zaire (N=1,486)**		**Total (N=4,261)**	
	At least half of the community members who have nets use them nightly	At least half of the community members approve of using a net every night	At least half of the community members who have nets use them nightly	At least half of the community members approve of using a net every night	At least half of the community members who have nets use them nightly	At least half of the community members approve of using a net every night	At least half of the community members who have nets use them nightly	At least half of the community members approve of using a net every night
Sex								
Female	43.2	11.9	48.3	16.4	42.9	25.5	44.5	18.0
Male	39.0	13.1	64.9	14.9	50.8	31.0	50.4	18.2
Age							***	**
15–24	48.8	15.6	42.6	16.3	42.7	31.0	45.0	20.9
25–34	41.9	10.0	50.2	13.6	45.3	28.2	45.3	18.3
35–44	36.0	10.4	53.3	24.0	44.1	18.7	43.4	16.8
45 and above	38.0	9.2	65.8	9.9	40.2	15.5	49.5	11.0
Residence								
Urban	41.9	11.6	51.8	17.3	42.6	25.1	45.0	18.0
Rural	43.6	12.8	49.2	14.2	45.5	27.6	45.8	18.0
Education		*				**		***

Primary school not completed	42.6	10.2	57.4	10.5	39.5	23.0	46.5	12.8
Primary	40.6	16.3	41.8	20.5	41.7	25.2	41.4	21.4
Secondary or higher	45.9	14.1	45.7	22.9	49.2	29.5	47.4	24.4
Wealth quintile	***		**	***	**		*	***
Lowest	39.6	12.6	56.3	7.6	61.5	28.0	45.9	13.5
Second	35.1	11.5	68.2	7.2	36.2	25.3	45.1	13.0
Middle	39.5	15.1	52.1	17.5	37.6	17.3	43.0	16.7
Fourth	53.7	7.6	36.8	12.8	44.6	35.1	44.2	21.7
Highest	61.5	12.3	45.1	33.1	45.3	23.7	48.2	24.2
Total (%)	42.6	12.1	50.8	16.2	43.7	26.0	45.3	18.0
Notes: *p<0.05, **p<0.01, ***p<0.001								

Table A.5.7: Equitable Gender Attitudes Regarding ITNs

Table A.5.7 presents participants' equitable gender attitudes related to ITN use. An individual's reported gender attitudes are based on their agreement or disagreement with several statements. Results are presented by participants' characteristics and are disaggregated by study province.

Table A.5.7: Equitable Gender Attitudes Regarding ITNs								
Percent of respondents with perceived equitable gender attitudes regarding ITN use by province, Angola 2023								
Percent of respondents who <u>disagree</u> with the following statements: ***When there are not enough nets…***	**Cuanza Norte (N=1,582)**		**Lunda Sul (N=1,193)**		**Zaire (N=1,486)**		**Total (N=4,261)**	
	It is more important that female children sleep under the available nets rather than male children.	It is more important that male children sleep under the available nets rather than female children	It is more important that female children sleep under the available nets rather than male children.	It is more important that male children sleep under the available nets rather than female children	It is more important that female children sleep under the available nets rather than male children.	It is more important that male children sleep under the available nets rather than female children	It is more important that female children sleep under the available nets rather than male children.	It is more important that male children sleep under the available nets rather than female children
Sex								
Female	57.3	72.3	60.7	78.7	67.8	91.9	62	81.1
Male	56.7	75.5	69.5	85.5	64.3	88.2	62.8	81.9
Age		*			*			
15–24	59.1	72.4	65	77.7	68.2	93.5	63.8	80.8
25–34	60.9	76	69.1	74.2	67.6	91.6	65.7	81.9
35–44	48.6	65.4	56.8	81.8	68.8	89.3	57.4	77.6
45 and above	60.3	81.8	52.4	89.3	61	89.3	57.3	86.6
Residence			*	*				*
Urban	57.1	74.5	62.1	82.5	65.8	92	61.6	82.9
Rural	57.4	70.2	62	75	70.4	90.8	62.9	78.3

Education					*	*	***	***
Primary school not completed	57.1	72.6	59.6	77.2	69.9	94.7	60.3	78.3
Primary	48.8	67	60.8	80.8	64.6	88.2	59	80.1
Secondary or higher	73.4	84.9	67.3	83.4	68.6	92.7	69	88.1
Wealth quintile	***	**						***
Lowest	67.4	76.5	51.9	60.8	76	92.2	65.1	75.1
Second	47.7	74.6	67	80.8	67.3	80.6	57.3	77.6
Middle	51.8	69.2	50.8	82	62.6	94.6	55.4	82.6
Fourth	55	62.8	78.1	87.2	71.9	89.7	70	82.8
Highest	57.3	74.2	59.5	81.4	64.9	94.7	62	87.2
Total (%)	57.2	72.8	62.1	79.7	67.4	91.5	62.1	81.2
Notes: *p<0.05, **p<0.01, ***p<0.001								

Table A.5.8: Household Possession of Mosquito Nets

Table A.5.8 summarizes household possession of mosquito nets (treated or untreated). The data table specifies the percentage of households with at least one ITN in the household, and at least one ITN for every two persons who stayed in the household the previous night. Results are presented by residence, province, and household wealth quintile.

Table A.5.8: Household Possession of Mosquito Nets		
Percentage of households with at least one ITN; and percentage of households with at least one net and ITN per two persons, according to household characteristics, Angola 2023		
Characteristics	**Percentage of households with at least one ITN⁺**	**Percentage of households with at least one ITN⁺ for every two persons**
Province	***	***
Cuanza Norte	75.5	30.3
Lunda Sul	51.5	23.1
Zaire	69.4	26.5
Residence	*	***
Urban	68.4	29.6
Rural	64.2	23.0
Wealth quintile	**	***
Lowest	61.0	21.6
Second	65.0	23.3
Middle	66.6	26.0
Fourth	66.0	29.0
Highest	75.5	35.5
Total (%)	66.7	26.8
⁺ An ITN is a factory-treated net that does not require any further treatment.		
Notes: *p<0.05, **p<0.01, ***p<0.001		

Table A.5.9: Access to an ITN

Table A.5.9 describes the percentage of de facto population in each province with access to an ITN in the household. This percentage is interpreted as an indicator of access. Results are presented according to household characteristics and are disaggregated by study province.

Table A.5.9: Access to an ITN				
Fraction of the de facto population with access to an ITN in the household, according to household characteristics, Angola 2023				
Fraction of the de facto population with access to an ITN[+]	Cuanza Norte (N=6,529)	Lunda Sul (N=3,793)	Zaire (N=5,358)	Total (N=15,680)
Residence				
Urban	0.69	0.54	0.54	0.58
Rural	0.57	0.35	0.48	0.49
Wealth quintile				
Lowest	0.51	0.30	0.55	0.46
Second	0.62	0.40	0.44	0.50
Middle	0.65	0.47	0.40	0.49
Fourth	0.84	0.52	0.54	0.59
Highest	0.93	0.60	0.66	0.69
Total (%)	0.64	0.45	0.52	0.54
[+] Fraction of de facto household population who could sleep under an ITN if each ITN in the household were used by up to two people.				
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.5.10: Use of Insecticide-Treated Nets by Persons in the Household

Table A.5.10 describes the percentage of de facto population in each province who slept under an ITN in the household the night before the survey. Results are presented according to participants' characteristics and are disaggregated by study province.

Table A.5.10: Use of ITNs by Persons in the Household				
Percentage of the de facto household population who slept under an ITN the night before the survey, according to background characteristics, Angola 2023				
Percentage who slept under an ITN last night	Cuanza Norte (N=6,529)	Lunda Sul (N=3,793)	Zaire (N=5,358)	Total (N=15,680)
Sex				
Female	0.4	0.32	0.47	0.41
Male	0.41	0.3	0.39	0.38
Age				
0–4	0.48	0.32	0.51	0.47
5–17	0.35	0.23	0.34	0.32
18+	0.43	0.37	0.48	0.44
Residence				
Urban	0.35	0.35	0.44	0.4
Rural	0.46	0.28	0.41	0.39
Wealth quintile				
Lowest	0.36	0.21	0.41	0.33
Second	0.51	0.27	0.36	0.4
Middle	0.38	0.4	0.36	0.38
Fourth	0.39	0.33	0.46	0.41
Highest	0.42	0.36	0.52	0.47
Total (%)	0.41	0.31	0.43	0.4
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.5.11: ITN Use Access Ratio

Table A.5.11 presents the ITN use access ratio in each province, according to household characteristics. Results are disaggregated by study province.

Table A.5.11: ITN Use Access Ratio				
ITN use access ratio, according to background characteristics, Angola 2023				
ITN use access ratio	**Cuanza Norte**	**Lunda Sul**	**Zaire**	**Total**
Residence				
Urban	0.51	0.65	0.81	0.69
Rural	0.81	0.80	0.85	0.80
Wealth quintile				
Lowest	0.71	0.70	0.75	0.72
Second	0.82	0.68	0.82	0.80
Middle	0.58	0.85	0.90	0.78
Fourth	0.46	0.63	0.85	0.69
Highest	0.45	0.60	0.79	0.68
Total (ratio)	0.64	0.69	0.83	0.74
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.5.12: Use of Existing ITNs

Table A.5.12 illustrates the percentage of ITNs that were used the previous night, and those that were used every night in the week prior to the survey, according to household characteristics. Results are disaggregated by study province.

Table A.5.12: Use of Existing ITNs								
Percentage of ITNs used the previous night and every night, by background characteristics, Angola 2023								
Characteristics	**Cuanza Norte (N=2,147)**		**Lunda Sul (N=890)**		**Zaire (N=1,791)**		**Total (N=4,828)**	
	% of ITNs used the previous night	% of ITNs used every night of the previous week	% of ITNs used the previous night	% of ITNs used every night of the previous week	% of ITNs used the previous night	% of ITNs used every night of the previous week	% of ITNs used the previous night	% of ITNs used every night of the previous week
Residence					***	***		*
Urban	84.6	85.8	85.9	84.9	79.3	74.4	83.0	81.5
Rural	80.8	81.2	87.1	87.8	92.4	90.6	87.2	86.7
Wealth quintile				**	*	***		***
Lowest	83.7	83.4	92.3	90.7	87.8	85.8	85.8	85.0
Second	83.6	84.1	81.8	82.4	88.3	86.5	84.8	84.6
Middle	76.9	80.8	88.6	89.1	93.1	91.2	85.6	86.5
Fourth	88.5	83.3	86.5	90.5	88.3	85.6	87.9	86.1
Highest	84.0	89.4	83.4	78.1	80.8	75.9	81.9	78.9
Total (%)	**82.9**	**83.7**	**86.4**	**86.0**	**86.4**	**83.2**	**85.0**	**83.9**
Notes: *p<0.05, **p<0.01, ***p<0.001								

Table A.5.13: ITN Characteristics

Table A.5.13 presents the percentage of ITNs with specific characteristics, according to net characteristics. Results are disaggregated by study province.

Table A.5.13: ITN Characteristics				
Percentage of nets and ITNs with specific characteristics, by province Angola 2023				
	Cuanza Norte (N=2,147)	**Lunda Sul (N=890)**	**Zaire (N=1,791)**	**Total (N=4,828)**
% of nets that are ITN[+]	71.6	93.0	89.8	83.3
% of ITNs obtained for free	97.1	94.4	94.1	95.3
Net source* **				
Mass distribution campaign	93.6	91.1	73.0	84.6
ANC	2.2	1.4	13.9	6.9
Immunization	0.7	1.7	1.7	1.3
Net age* **				
<12 months	93.9	95.6	81.7	89.0
12–24 months	0.7	0.5	8.3	4.0
25–36 months	5.4	3.9	8.2	6.2
>36 months	-	-	1.9	0.8
Net color* **				
White	98.3	96.8	98.0	97.9
Blue	1.0	0.8	0.8	0.9
Green	0.0	0.2	0.2	0.1
Other color	0.7	2.2	1.0	1.1
[+] An ITN is a factory-treated net that does not require any further treatment.				
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.5.14: Insecticide-Treated Net Care

Table A.5.14 describes ITN care, according to care and repurposing characteristics. Results are disaggregated by study province.

Table A.5.14: ITN Care				
Care of ITNs, by province Angola 2023				
	Cuanza Norte (N=2,147)	**Lunda Sul (N=890)**	**Zaire (N=1,791)**	**Total (N=4,828)**
% of ITNS ever washed	84.7	81.3	84.8	84.7
Where was net located?				
Hanging loose over sleeping place	84.3	90.3	91.1	88.3
Hanging folded up and tied	10.3	6.8	5.4	7.6
Not hanging up	5.4	2.9	3.5	4.1
Product used to wash ITN				
Soap	51.8	67.1	68.4	51.8
Powder soap/liquid soap	10.9	1.4	3.8	10.9
Omo or lixívia	27.0	14.8	24.7	23.7
Other	7.8	10.7	0.7	5.4
Nothing	2.6	6.0	2.5	2.6
Where ITN was dried				
Out in the shade	70	76.7	50.6	63.2
Out in the sun	27.7	21.9	48.6	35.3
Other	0.8	0.1	0.4	0.7

Table A.5.15: Net Care and Repurposing

Table A.5.15 describes net repurposing practices, according to care and repurposing characteristics. Results are disaggregated by study province.

Table A.5.15: Net Care and Repurposing				
Care and Repurposing of ITNs by province, Angola 2023				
Net care and repurposing actions	Cuanza Norte (N=1,582)	Lunda Sul (N=1,193)	Zaire (N=1,486)	Total (N=4,261)
% of respondents engaging in any net care	87.0	89.3	83.0	86.3
Roll up or tie when not in use	46.2	59.5	30.7	44.9
Handle nets with care	14.1	23.7	36.3	24.3
Wash gently	15.6	13.0	16.4	15.1
% of respondents who repurposed nets that were no longer useful for sleeping under	**19.9**	**9.9**	**11.3**	**14.1**
Specific repurposing actions	Cuanza Norte (N=297)	Lunda Sul (N=121)	Zaire (N=172)	Total (N=590)
Protection for seedlings/crops	39.6	41.7	56.0	44.5
Curtains or window screens	5.2	10.0	1.8	5.2
Rope or tying	5.7	4.9	8.6	6.4
Other purpose	39.6	58.8	28.3	40.4

Table A.5.16: Consistent Net Use

Table A.5.16 presents the percentage of respondents who used an ITN every night of the week preceding the survey, according to respondent characteristics.

Table A.5.16 Consistent Net Use the Previous Week				
Percent of respondents who used an ITN every night of the week preceding the survey, according to respondent characteristics, Angola 2023				
Characteristics	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,486)**	**Total (N=4,261)**
Sex			*	
Female	73.4	56.7	66.1	66.1
Male	76.8	56.1	76.9	70.1
Age	*			
15–24	73.9	58.6	62.7	65.7
25–34	84.8	63.9	70.3	73.7
35–44	67.0	51.0	65.5	62.0
≥45	63.3	49.0	75.9	60.8
Residence				
Urban	71.2	53.3	66.8	64.4
Rural	78.0	62.1	68.1	70.2
Education	**	***		
Primary school not completed	72.2	52.2	67.7	65.3
Primary	75.7	63.1	67.2	68.9
≥ Secondary	79.7	59.7	66.9	66.7
Wealth quintile		***		
Lowest	71.5	59.8	82.2	70.3
Second	72.5	35.4	69.6	61.0
Middle	83.5	72.8	65.3	73.3
Fourth	74.3	63.4	67.3	67.6
Highest	70.3	47.8	64.3	60.8
Total (%) * **	**73.9**	**56.6**	**67.2**	**66.7**
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.5.17: Results of the Logistic Regression Exploring Factors Associated with Sleeping under an ITN Every Night

Table A.5.17: Results of the Logistic Regression Exploring Factors Associated with Sleeping under an ITN Every Night			
Characteristic	**% with consistent net use**	**aOR**	**95% CI**
Age group			
25–34 (Reference)	65.74	1.00	
15–24	63.40	0.50***	0.37–0.66
35–44	66.22	0.72	0.52–1.01
45 and up	68.34	0.64*	0.43–0.97
Religion			
Catholic (Reference)	68.18	1.00	
Protestant	64.43	1.12	0.86–1.46
Other	60.71	1.20	0.83–1.74
Province			
Cuanza Norte (Reference)	71.19	1.00	
Lunda Sul	62.14	0.92	0.64–1.32
Zaire	62.00	0.77	0.57–1.05
Sex			
Male (Reference)	69.67	1.00	
Female	64.71	0.64*	0.45–0.91
Level of education			
Primary school not completed (Reference)	63.52	1.00	
Primary	64.61	1.14	0.84–1.55
Secondary or higher	70.53	0.70*	0.50–0.97
Socioeconomic status			
Lowest (Reference)	63.64	1.00	
Second	69.55	0.66	0.44–1.00
Middle	65.63	0.83	0.54–1.28
Fourth	65.06	0.56**	0.36–0.86
Highest	63.12	0.37***	0.24–0.57
Residence			
Urban (Reference)	62.44	1.00	
Rural	69.01	0.96	0.76–1.20
Favorable attitudes toward ITNs			
No (Reference)	53.77	1.00	
Yes	70.00	1.33*	1.03–1.74
Knowledge ITN is a method of malaria prevention			
No (Reference)	56.36	1.00	

Yes	66.67	1.57**	1.14–2.16
Perceptions of complete self-efficacy to use ITNs			
No (Reference)	50.43	1.00	
Yes	68.79	3.24***	2.52–4.16
ITN use descriptive community norm			
No (Reference)	61.57	1.00	
Yes	70.77	1.39**	1.11–1.75
ITN use injunctive community norm			
No (Reference)	64.50	1.00	
Yes	69.21	0.97	0.74–1.29
Equitable gender attitudes related to ITNs			
No (Reference)	63.73	1.00	
Yes	66.51	1.33*	1.06–1.67
Campaign slogan recall			
No (Reference)	63.17	1.00	
Yes	77.67	1.32	0.95–1.83
Pseudo-R2	0.1120		
Number of observations	2,945		
Notes: *p<0.05; **p<0.01; ***p<0.001.			

Table A.5.18: Results of the Logistic Regression Exploring Factors Associated with Folding or Tying up a Net when not in Use

Table A.5.18. Results of the Logistic Regression Exploring Factors Associated with Folding or Tying up a Net when not in Use			
Characteristic	N (%)	**aOR**	**95% CI**
Age group			
15–24 (Reference)	966 (28.7)	1.00	
25–34	970 (26.5)	1.19	0.96–1.48
35–44	654 (23.2)	1.20	0.93–1.54
45 and up	355 (29.2)	1.10	0.80–1.52
Province			
Cuanza Norte (Reference)	1,202 (15.1)	1.00	
Lunda Sul	603 (28.0)	1.85***	1.43–2.39
Zaire	1,140 (39.4)	2.78***	2.22–3.49
Sex			
Male (Reference)	543 (20.8)	1.00	
Female	2,402 (28.0)	1.22	0.95–1.57
Level of education			
Primary education not completed (Reference)	1,379 (18.9)	1.00	
Primary	838 (35.9)	1.12	0.89–1.40
Secondary or higher	728 (32.2)	1.09	0.84–1.41
Socioeconomic status			
Lowest (Reference)	551 (16.6)	1.00	
Second	592 (19.1)	1.27	0.93–1.73
Middle	579 (31.1)	1.39*	1.02–1.90
Fourth	574 (34.4)	1.56**	1.13–2.15
Highest	649 (30.3)	1.34	0.96–1.87
Residence			
Urban (Reference)	2,033 (28.3)	1.00	
Rural	912 (24.8)	1.13	0.94–1.36
Favorable attitudes toward ITN care			
No (Reference)	142 (25.2)	1.00	
Yes	2,803 (27.1)	1.74*	1.03–2.94
Perceptions of malaria severity			
No (Reference)	1,821 (24.6)	1.00	
Yes	1,124 (30.7)	1.20*	1.00–1.43
Perceptions of malaria susceptibility			
No (Reference)	1,231 (32.5)	1.00	
Yes	1,714 (22.7)	0.81*	0.68–0.97
Knowledge ITN is a method of malaria prevention			

No (Reference)	2,338 (25.6)	1.00	
Yes	607 (33.2)	1.05	0.79–1.41
IPC about malaria in the last six months			
No (Reference)	1,325 (21.0)	1.00	
Yes	1,620 (31.6)	0.95	0.76–1.19
Perceptions of ITN response efficacy			
No (Reference)	500 (27.7)	1.00	
Yes	2,445 (26.8)	1.15	0.96–1.38
Perceptions of self-efficacy to use ITNs			
No (Reference)	1,556 (31.0)	1.00	
Yes	1,389 (22.5)	1.28	0.99–1.64
ITN use descriptive community norm			
No (Reference)	2,370 (25.9)	1.00	
Yes	575 (31.9)	0.80*	0.67–0.95
ITN use injunctive community norm			
No (Reference)	330 (13.6)	1.00	
Yes	2,615 (29.1)	0.94	0.75–1.17
Heard a message related to malaria in the last six months			
No (Reference)	2,016 (23.2)	1.00	
Yes	929 (34.9)	1.32**	1.09–1.60
Pseudo-R2	0.0570		
Number of observations	2,945		

Notes: *p<0.05; **p<0.01; ***p<0.001.
N refers to the frequency of respondents within each row of the group, while (%) refers to percentage of each row that reported the behavior or intention.

A.6 Media Consumption and Message Exposure

This subsection of the Annex provides all data tables related to media consumption and exposure to malaria messages. The following tables may have been duplicated or referenced in the main body of the report.

Table A.6.1: Radio Listenership at Least Once a Week

Table A.6.1 describes the distribution of radio listenership. It includes data from all respondents as well as respondents in households that own a radio. The data presented in this table is disaggregated by province.

Table A.6.1: Radio Listenership at Least Once a Week

Percent distribution of radio listenership at least once a week among all respondents and respondents in households with a radio by province, Angola 2023

Characteristics	Cuanza Norte		Lunda Sul		Zaire		Total	
	All respondents (N=1,582)	Respondents in households with a radio (N=674)	All respondents (N=1,193)	Respondents in households with a radio (N=580)	All respondents (N=1,486)	Respondents in households with a radio (N=669)	All respondents (N=4,261)	Respondents in households with a radio (N=1,923)
Sex			**				**	
Female	33	72.3	53.8	90.7	67.6	90.1	51.2	86.8
Male	46.4	75.3	47.5	90.7	62.1	93.7	50.7	86.6
Age	**	*	***	*	***	*	***	**
15–24	42	64.1	58.8	90.1	73.9	95	57.4	87
25–34	38.3	85.2	59.2	87.5	71	91.3	56.9	89.1
35–44	21.6	64.3	56.6	95.7	59.3	85.3	43.4	84.2
45 and above	33.7	80.5	26.6	90.5	43.8	79.2	33.4	83.2
Residence								
Urban	38.1	72.9	52.5	92.7	71.1	90.4	53.8	87.8
Rural	30.5	72.9	53.4	87.5	59.9	90.7	46.7	85
Education	***	**	***	***	***	***	***	***
Primary school not completed	24.1	62.3	30	82.5	38.6	72.2	28.7	71.5
Primary	51.6	81.3	58.7	92.2	70.5	92.5	62.2	90.1

Secondary or higher	63.9	84.3	88.1	94.1	86.5	96.2	82.9	94
Wealth quintile	***	***	***	**	***	***	***	***
Lowest	12.5		21.1	49	9.3		14	42.9
Second	35.1	71.6	18.7	97.7	21.2	57.9	27.5	72.4
Middle	43	61.7	42.7	85.7	61.4	85.4	49.5	76.8
Fourth	54.8	77.2	77.4	90.9	82.8	89.1	74.7	87.6
Highest	74.5	84.5	91.6	93.3	85.3	94.9	85.1	93.2
Total (%)	**35.1**	**72.9**	**52.8**	**90.7**	**67.1**	**90.5**	**51.1**	**86.8**
Notes: *p<0.05, **p<0.01, ***p<0.001								

Table A.6.2: Preferred Time to Listen to Radio

Table A.6.2 summarizes respondents' preferred time to listen to the radio. It includes data by study province, respondent sex, respondent age, respondent level of education, and household wealth quintile. The data presented in this table is disaggregated by certain times at which individuals can listen to the radio.

Table A.6.2: Preferred Time to Listen to Radio						
Preferred time to listen to radio, Angola 2023 (N=2,441)						
Characteristics	**Early in the morning**	**End of morning**	**Afternoon**	**Early in the evening**	**End of evening**	**Night**
Province	**	***	**	***	***	**
Cuanza Norte	21.5	14.4	32.3	18.5	11.8	1.5
Lunda Sul	36.3	26.8	17.2	10.5	8.8	0.4
Zaire	20.9	21.1	14.1	23.8	17.9	2.2
Sex		***	***			*
Female	25.7	24.5	20.3	16.6	11.9	1
Male	33	8.2	23.6	18.4	14.6	2.2
Age	*	**				
15–24	27.2	19.8	21	19	11.8	1.1
25–34	26.1	33.7	15.3	13.6	10.1	1.3
35–44	30.5	13.7	24.2	18.4	11.2	1.9
≥45	24.7	11	27.5	16.4	19.9	0.6
Residence						
Urban	26.2	21.4	24.2	14.3	12.7	1.1
Rural	28.8	21.1	15.5	21.4	11.8	1.5
Education			*			
Primary school not completed	23.5	18.6	24.5	18.3	13.6	1.5
Primary	26.1	24.9	15.9	16.1	16.2	0.7
≥ Secondary	32.1	21.7	20.6	15.9	8.3	1.3
Wealth quintile						
Lowest	30.7	13.6	28.8	16.9	8.7	1.3
Second	17.2	25.5	26.7	16	13.8	0.9
Middle	28.2	15.9	24	14.3	15.9	1.7
Fourth	26.6	26	12.8	19.8	14.1	0.7
Highest	30.3	21.8	20.4	16.8	9.2	1.6
Total (%)	27.2	21.3	21	16.9	12.4	1.3
Notes: *p<0.05, **p<0.01, ***p<0.001						

Table A.6.3: Television Viewership at Least Once a Week

Table A.6.3 describes the distribution of television viewership. It includes data from all respondents as well as respondents in households that own a television. The data presented in this table is disaggregated by province.

Table A.6.3: Television Viewership at Least Once a Week								
Percent distribution of television viewership at least once a week among all respondents and respondents in households with a television by province, Angola 2023								
Characteristics	**Cuanza Norte**		**Lunda Sul**		**Zaire**		**Total**	
	All respondents (N=1,582)	Respondents in households with a television (N=290)	All respondents (N=1,193)	Respondents in households with a television (N=153)	All respondents (N=1,486)	Respondents in households with a television (N=157)	All respondents (N=4,261)	Respondents in households with a television (N=600)
Sex			**				**	
Female	33	72.3	53.8	90.7	67.6	90.1	51.2	86.8
Male	46.4	75.3	47.5	90.7	62.1	93.7	50.7	86.6
Age	**	*	***	*	***	*	***	**
15–24	42	64.1	58.8	90.1	73.9	95	57.4	87
25–34	38.3	85.2	59.2	87.5	71	91.3	56.9	89.1
35–44	21.6	64.3	56.6	95.7	59.3	85.3	43.4	84.2
45 and above	33.7	80.5	26.6	90.5	43.8	79.2	33.4	83.2
Residence								
Urban	38.1	72.9	52.5	92.7	71.1	90.4	53.8	87.8
Rural	30.5	72.9	53.4	87.5	59.9	90.7	46.7	85
Education	***	**	***	***	***	***	***	***
Primary school not completed	24.1	62.3	30	82.5	38.6	72.2	28.7	71.5
Primary	51.6	81.3	58.7	92.2	70.5	92.5	62.2	90.1

Secondary or higher	63.9	84.3	88.1	94.1	86.5	96.2	82.9	94
Wealth quintile	***	***	***	**	***	***	***	***
Lowest	12.5		21.1	49	9.3		14	42.9
Second	35.1	71.6	18.7	97.7	21.2	57.9	27.5	72.4
Middle	43	61.7	42.7	85.7	61.4	85.4	49.5	76.8
Fourth	54.8	77.2	77.4	90.9	82.8	89.1	74.7	87.6
Highest	74.5	84.5	91.6	93.3	85.3	94.9	85.1	93.2
Total (%)	35.1	72.9	52.8	90.7	67.1	90.5	51.1	86.8
Notes: *p<0.05, **p<0.01, ***p<0.001								

Table A.6.4: Preferred Time to Watch Television

Table A.6.4 summarizes respondents' preferred time to watch television. It includes data by study province, respondent sex, respondent age, respondent level of education, and household wealth quintile. The data presented in this table is disaggregated by certain times at which individuals can watch television.

Table A.6.4: Preferred Time to Watch Television						
Preferred time to watch television, Angola 2023 (N=621)						
Characteristics	**Early in the morning**	**End of morning**	**Afternoon**	**Early in the evening**	**End of evening**	**Night**
Province	***	***	***	***	***	*
Cuanza Norte	10	9.7	26.5	30.7	21.1	1.9
Lunda Sul	10.1	11.1	10	30.5	37	1.4
Zaire	4.9	6.1	10.9	40.7	37	0.5
Sex		***		***	***	***
Female	7.8	9.8	13.5	37	31.1	0.9
Male	8.2	1.2	20.1	21.8	46	2.7
Age					*	
15–24	6.9	9.4	15.9	34.3	32.5	1
25–34	7.9	8.2	14	36.6	32.6	0.8
35–44	10.2	9.6	12.3	35.6	30.9	1.5
≥45	6.7	4.9	13.5	30	42.9	2
Residence	*	*				
Urban	6.2	10.3	16.1	35.5	31.1	0.8
Rural	10.8	5.4	11.3	33.8	37.1	1.7
Education						*
Primary school not completed	6.7	11	16.5	33.7	30.2	1.9
Primary	8	5.8	13.9	39.1	32.9	0.3
≥ Secondary	8.6	9.1	13.2	32.3	35.6	1.2
Wealth quintile	***			**	*	*
Lowest	12.8	24.9	22.6	15.9	23.1	0.7
Second	6.3	4	13.8	49	24.2	2.7
Middle	8.2	6.4	13.8	41.7	28.8	1
Fourth	8.2	4.8	16.6	27.3	42	1.1
Highest	7.1	12.9	11.8	35.2	32.3	0.7
Total (%)	7.8	8.6	14.4	34.9	33.1	1.1
Notes: *p<0.05, **p<0.01, ***p<0.001						

Table A.6.5: Mobile phone or Tablet Ownership

Table A.6.5 describes the distribution of ownership of mobile phones or tablets by respondents' sociodemographic characteristics, including participant sex, age group, residence, level of education, and household wealth quintile. The presented data is disaggregated by province.

Table A.6.5: Mobile Phone or Tablet Ownership				
Percent distribution of mobile phone or tablet ownership among all respondents by province, Angola 2023				
Characteristics	**Cuanza Norte (N=1,582)**	**Lunda Sul (N=1,193)**	**Zaire (N=1,772)**	**Total (N=5,484)**
Sex	***	***	***	***
Female	17.1	38.3	45.2	33.1
Male	45.3	47.1	56.8	48.8
Age	*	*	***	***
15–24	14	30.1	40	27.3
25–34	25	48.8	58.3	44.5
35–44	27.5	40.6	40.7	35.4
≥45	24.3	45.6	37.8	36
Residence			**	*
Urban	21	41.6	52.3	37.9
Rural	22.2	36.5	35.8	30.8
Education	***	***	***	***
Primary school not completed	13.7	23	20	17.7
Primary	25.7	33.7	45	36.7
≥ Secondary	56	72.3	69.7	68.1
Wealth quintile	***	***	***	***
Lowest	3.9	2.3	6	3.8
Second	21.4	20.3	25.9	22
Middle	28.7	35.3	27.2	30.4
Fourth	51.2	51.2	61.1	55.7
Highest	33.3	76.9	61.9	60.8
Total (%)	21.5	39.7	46.4	35.2
Notes: *p<0.05, **p<0.01, ***p<0.001				

Table A.6.6: Exposure to Malaria Messages

Table A.6.6 describes the percentage of respondents who have been exposed to malaria messages, specifically through identification of a campaign logo for ZMCC and completing the ZMCC slogan. Data presents exposure rates by participants' sociodemographic characteristics, including participant sex, age group, residence, level of education, and household wealth quintile. It is disaggregated by study province.

Table A.6.6 Exposure to Malaria Messages

Percent distribution of message exposure among all respondents by Province, Angola 2023

Characteristics	Cuanza Norte		Lunda Sul		Zaire		Total	
	Participant seen or heard malaria message in the past six months	**Participant could complete a campaign slogan**	Participant seen or heard malaria message in the past six months	**Participant could complete a campaign slogan**	Participant seen or heard malaria message in the past six months	**Participant could complete a campaign slogan**	Participant seen or heard malaria message in the past six months	**Participant could complete a campaign slogan**
Sex		***			**		***	***
Female	28.7	12	23.1	21.4	27.4	16.1	26.6	16.1
Male	45.1	27	25.4	21.1	40.4	13.2	37.4	21.6
Age Group			***		**	**	***	*
15–24	27.5	13.1	21.7	23.7	26.6	18	25.5	17.8
25–34	32.8	17.5	21.2	22.2	32.7	15.8	29.9	17.9
35–44	30.4	10.7	20	19.4	28.9	16.8	27	15.1
45 and above	40.5	18	34.5	17.7	20.9	5.6	33.2	14.8
Residence								
Urban	31.8	13.8	23.8	22.7	30	19	28.9	18.2
Rural	30.3	15.2	22.9	19.1	26.2	10	26.8	14.6

Education	***	***	***	***	***	***	***	***
Primary school not completed	25.2	8.9	14.5	12.5	19	3.9	20.8	9.1
Primary	38.8	21.3	29.9	26.2	26.4	20.6	30.9	22
Secondary or higher	49.5	30.7	34.5	33.3	39.3	20.1	39.5	26.6
Wealth quintile	***	***	***	***	***	*	***	***
Lowest	24.1	9	12.1	4.4	13	5.3	20.1	7.6
Second	36.5	13.7	13.8	17.7	21.1	10	26.7	14.1
Middle	38.8	15.1	28.4	21	27.2	21.7	31.1	19.5
Fourth	34.1	22.2	24	24.2	35.4	15.5	31.5	19.8
Highest	27.7	22.9	34.5	34.3	29.9	16.5	30.8	22.7
Total (%)	31.2	14.3	23.5	21.4	28.7	15.8	28.1	16.9
Notes: *p<0.05, **p<0.01, ***p<0.001								

Annex B: Glossary of MBS Terms

- **Knowledge of malaria** is the awareness of specific knowledge related to malaria.
  - ➢ **Knowledge of malaria:** Knowledge of all of the following: fever as the main symptom, malaria is caused by mosquitoes, and a malaria prevention measure.
  - ➢ **Knowledge of care-seeking for fever and malaria treatment:** Knowledge of all the following: ACT is the medicine to treat malaria, care should be sought the same or next day after a child under five develops a fever, blood tests are the best way to detect malaria, and health facilities are the best place to go if someone has malaria.
  - ➢ **Knowledge of IPTp:** Knowledge of all the following: women should go for ANC during their first trimester, women should attend at least four ANC visits, women should receive IPTp at least three times during their pregnancy.
  - ➢ **Knowledge of malaria prevention using ITNs:** Knowledge that ITNs protect against malaria.
- **Perceived susceptibility of malaria** is the individual's belief that they are likely to be affected by malaria.
- **Perceived severity of malaria** is the perception that the consequences of malaria are severe and that the consequences of malaria in general are severe for themselves and their community.
  - ➢ **Perceived severity of MIP** is the perception that the consequences of malaria are especially severe among pregnant women.
- **Perceived response efficacy** is the belief that recommended actions (e.g., prompt care-seeking, ITN use and care, and uptake of IPTp) will help a person avoid or minimize the threat of malaria.
  - ➢ **Perceived response efficacy of malaria testing:** Belief that a blood test for malaria is effective in diagnosing malaria.
  - ➢ **Perceived response efficacy of malaria treatment:** Belief that malaria medicine obtained from a health facility is effective at treating malaria.
  - ➢ **Perceived response efficacy of IPTp and ANC:** Belief that IPTp and ANC are effective at preventing MIP.
  - ➢ **Perceived response efficacy of ITNs:** Belief that ITNs effectively prevent malaria if used correctly.
- **Perceived self-efficacy** is a belief in an individual's ability to take actions related to reducing malaria.
  - ➢ **Perceived self-efficacy for malaria testing and treatment:** Belief in an individual's ability to take actions to get their child tested and treated for malaria promptly and effectively.
  - ➢ **Perceived self-efficacy for ANC and IPTp (women):** Female participants' belief in their ability to take actions to attend ANC and receive IPTp.

- ➢ **Perceived self-efficacy for ANC and IPTp (men):** Male participants' belief in their ability to take actions to support their spouse to attend ANC and receive IPTp.
- ➢ **Perceived self-efficacy to use ITNs:** Belief in an individual's ability to take actions to use their mosquito nets effectively and consistently.

- **Favorable attitudes**
  - ➢ **Attitudes toward malaria care-seeking and treatment:** Favorable beliefs related to care-seeking for fever and malaria medicine provided by health facilities.
  - ➢ **Attitudes toward MIP:** Favorable beliefs related to IPTp uptake and ANC attendance.
  - ➢ **Attitudes toward ITNs:** Favorable beliefs related to consistent mosquito net use.
  - ➢ **Attitudes toward ITN care:** Favorable beliefs related to proper care and maintenance of mosquito nets.
- **Descriptive norms** are the perceptions of what other people living in the respondent's community do.
  - ➢ **Descriptive norms regarding prompt care-seeking for fever:** Perception that the majority of community members seek care promptly for their child with fever.
  - ➢ **Descriptive norms regarding appropriate care-seeking for fever:** Perception that the majority of community members seek care from a health facility for their child with fever.
  - ➢ **Descriptive norms regarding ANC** Perception that the majority of pregnant community members seek ANC.
  - ➢ **Descriptive norms regarding SP uptake** Perception that the majority of pregnant community members receive IPTp.
  - ➢ **Descriptive norms regarding consistent ITN use** Perception that the majority of community members sleep under a mosquito net every night.
- **Injunctive norms** are the perceptions of what behaviors would be approved of or disapproved of by others.
  - ➢ **Injunctive norms regarding prompt care-seeking for fever:** Perception that less than one-half of community members would disapprove of prompt care-seeking for a child under five with fever.
  - ➢ **Injunctive norms regarding SP uptake:** Perception that less than one-half of community members would disapprove of a pregnant woman taking IPTp.
  - ➢ **Injunctive norms regarding consistent ITN use:** Perception that less than one-half of community members would disapprove of consistent net use.
- **IPC about malaria** is the discussion about malaria topics (e.g., prevention, care-seeking, and treatment) with others.
  - ➢ **IPC about malaria with spouse:** Discussion about malaria with spouse in past six months.

- ➢ **IPC about malaria with friends or family:** Discussion about malaria with a friend or family member in past six months.
- ➢ **IPC about ANC:** Discussion about attending ANC with spouse during last pregnancy

- **Decision-making** participation is a person's active involvement in malaria-related decisions.
  - ➢ **Decision-making regarding seeking prompt care for fever:** The decision to seek care for a child under five with fever is jointly made with spouse or only made by the respondent.
  - ➢ **Decision-making regarding purchasing medicine for fever:** The decision to pay for malaria treatment for a child under five is jointly made with spouse or only made by the respondent.
  - ➢ **Decision-making regarding ANC:** The decision to attend ANC is jointly made with spouse or only made by the respondent.
- **Gender norms and attitudes**
  - ➢ **Equitable gender attitudes related to care-seeking for fever:** When there is not enough money to seek care for all children, the respondent does not make decisions to seek care for a febrile child based on the child's gender.
  - ➢ **Equitable gender attitudes related to ANC:** Respondent believes male spouses should accompany their pregnant wives to ANC.
  - ➢ **Equitable gender attitudes related to ITN use** When there are not enough mosquito nets, the respondent does not make decisions about mosquito-net use based on a child's gender.
- **Perceptions of health care professionals**
  - ➢ **General perceptions toward health care workers**: Perception that health care workers treat their patients with respect.
  - ➢ **Perceptions of health facilities regarding care-seeking for fever and malaria treatment:** Perception that health facilities always have tests and medicine for malaria.
  - ➢ **Perceptions of health care workers regarding care-seeking for fever and malaria treatment:** Perceptions that health care workers provide proper testing and treatment for malaria**.**
  - ➢ **Perceptions of health care workers regarding IPTp:** Perceptions that health care workers provide proper ANC.