Stop Malaria Project

Health Facility Assessment Survey Report

November 2013

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LIST OF ACRONYMS AND ABBREVIATIONS

ACT	Artemisinin-based Combination Therapy
ANC	Antenatal Care
BCC	Behaviour Change Communication
HC	Health Centre
HFA	Health Facility Assessment
HMIS	Health Management Information Systems
IPTp	Intermittent Preventive Treatment in pregnancy
ITN	Insecticide Treated Net
LLIN	Long Lasting Insecticide Treated Net
MDGs	Millennium Development Goals
MIS	Malaria Indicator Survey
MoH	Ministry of Health
NMCP	National Malaria Control Program
PMI	President's Malaria Initiative
PMP	Performance Monitoring Plan
RBM	Roll Back Malaria
RDT	Rapid Diagnostic Testing
SMP	Stop Malaria Project
SP	Sulfadoxine-pyrimethamine
USAID	United States Agency for International Development
WHO	World Health Organization

EXECUTIVE SUMMARY

Malaria remains one of the most important diseases in Uganda, causing significant morbidity, mortality, and economic loss. Children under age 5 and pregnant women are disproportionately affected. The Government of Uganda through the Uganda National Malaria Control Program (NMCP) is working with the Stop Malaria Project (SMP) and other partners to reduce deaths due to malaria.

The SMP activities are designed to meet three intermediate results namely:

(i) to improve and implement malaria prevention programs in support of the national malaria strategy;
(ii) to improve and implement malaria diagnosis and treatment activities in support of the national malaria strategy; and
(iii) to strengthen the NMCP capacity to monitor and evaluate interventions.

Between July and August, 2011, SMP conducted a baseline Health Facility Assessment (HFA) survey in 235 facilities. The baseline HFA was based on benchmarks for a set of performance indicators and targets for FY 2011 as described in the Project Performance Monitoring Plan (PMP). In November 2013, a follow up HFA, with similar design characteristics as the baseline, was conducted to evaluate the progress on the SMP performance indicators.

In total, 235 health facilities were interviewed in both 2010/11 and 2012/3. This resulted in 1000 clients in 2010/11 and 912 clients in 2012/13. More than a third of the clients were from HC IIIs (37%) followed by 27 percent from HC IVs, 20 percent from HC IIs and 17 percent of the clients from hospitals.

Results in this report are summarized according to the two intermediate result areas below highlighting the changes observed between the baseline and follow up HFA:

INTERMEDIATE RESULT 1: MALARIA PREVENTION IMPROVED

This Intermediate result consisted of indicators about the use of effective approaches to prevent malaria, particularly among children under five years and ANC pregnant women.

- Overall, knowledge that malaria is caused by mosquitoes improved, significantly among all clients (ANC mothers and caregivers of children under 5 years), from 74% in 2010/11 to 94% in 2012/13, p-value: <0.001. Notably, this knowledge improved significantly among ANC mothers and caretakers of children under five, separately.

- The proportion with an ITN between the 2010/11 and 2012/13 surveys declined significantly from 64% to 54%, p-value: <0.001. Notably, in the 2012/13 survey, clients from the Eastern (92%) were more likely than their counterparts from the Central (68%) and Mid western (48%) to own a mosquito net of any type. Among pregnant women, the proportion with any net between 2010/11 and 2012/13 declined significantly from 88% to 69%, p-value: <0.001. However, the proportion with an ITN nearly remained unchanged from 56% to 55%, P-value: <0.729.

- Caretakers were asked if their children under five slept under any net and whether the net was an ITN. Survey results show that the proportion of the care takers with children under 5 years that slept under any mosquito net the night before the survey declined, significantly, from 75% to 66%, (P-value: 0.037). On the contrary, the proportion that slept under an ITN the night before the survey improved slightly but not significantly from 42% to 46%, P-value: 0.473.

- Care takers with secondary education or more were more likely to have their children sleep under ITNs compared to care takers with less than secondary education.

- Sleeping under any mosquito net was highest in the Eastern region (95%) compared to the Central region (62%) and Mid western region (53%).

- Among pregnant women, the proportion that slept under any mosquito net the night before the survey declined, significantly, from 74% to 65%, P-value: 0.009. On the contrary, the proportion that slept under an ITN the night before the survey nearly remained unchanged from 49% to 50%, P-value: 0.712.

- Knowledge of medicines to take in order to avoid malaria among pregnant women (IPTp) was also assessed in the survey. This knowledge of Sp/Fansidar for IPTp, which is a key SMP indicator, improved significantly between 2010/11 (86%) and 2012/13 (96%), (P-value: <0.001). Furthermore, knowledge of the recommended number doses of IPTp also improved, significantly, from 57% to 73%, P-value: <0.001.

INTERMEDIATE RESULT 2: MALARIA DIAGNOSIS, TREATMENT AND REFERRAL SERVICES IMPROVED

This Intermediate result consisted of indicators about increasing the use of ACTs among individuals, and particularly among children, suffering from malaria with an ultimate goal of reducing mortality due to malaria.

Respondents' knowledge of prevention and treatment was assessed.

- Importantly, the knowledge of signs of malaria improved between 2010/11 and 2012/13. For instance those who cited fever or high temperature improved from 61% to 95% while those who cited severe vomiting improved from 45% to 81%.

- Knowledge of at least one remedy against malaria remained universal between 2010/11 (97%) and 2012/13 (100%).

Prompt seeking (within 24 hours) of treatment prevents adverse outcomes of malaria. Based on its importance, this was adopted as an SMP indicator.

- Overall, this indicator improved, significantly, from 59% in 2010/11 to 81% in 2012/13, P-value: <0.001. Notably, care takers with no education and those from Eastern Uganda did not register statistically significant improvements on this indicator.

Caretakers who had come to health facility for malaria related illness were asked if the patient they had brought for treatment had blood taken from his/her finger or heel for testing; which is a proxy for diagnostic testing for malaria. Also, diagnostic testing was assessed among pregnant women visiting health facilities for ANC.

- The proportion of sick children under five that, reportedly, received diagnostic testing for malaria increased from 83% in 2010/11 to 87% in 2012/13.

- Overall, the proportion of ANC women that, reportedly, received diagnostic testing for malaria increased from 77% in 2010/11 to 83% in 2012/13.

Respondents were asked if they were exposed to messages about malaria prevention and treatment. Odds Ratios (O.Rs) were computed to determine the association between exposure to malaria treatment messages on key outcomes.

- The proportion of exit clients exposed to malaria messages remained unchanged between 2010/11 (85%) and 2012/13 (86%), P-value: 0.579.

- The group of pregnant women exposed to malaria treatment messages had an over fourfold chance [OR=4.58 (1.38, 12.59)] to have knowledge of protecting self from malaria compared to their counterparts that were not exposed to these messages. This result was statistically significant and an improvement from that observed in 2010/11 HFA [OR=4.08 (1.38, 12.09)]

- Also, exposed pregnant women almost twice [OR=1.93 (1.22, 3.09)] more likely to own any mosquito net compared to their unexposed counterparts. This was an improvement from that observed in the 2010/11 HFA,[OR=1.52 (0.73, 3.15)].

- Exposed women were 86% [OR=1.86 (0.88, 3.91)] more likely to have slept under any mosquito net in the night preceding the survey compared to unexposed counterparts. This result is similar to that observed in the 2010/11 HFA, [OR=1.63 (0.84, 3.15)]

- With regard to care takers of children under 5 years, the children with care takers who were exposed to malaria treatment messages were twice [OR=2.00 (1.02, 3.92)] more likely to have slept under any net in the night preceding the survey compared to the children of their counterparts that were not exposed to these messages. This is a slight decline from that observed in the 2010/11 [OR=2.43 (1.02, 5.75)].

CONCLUSION AND RECOMMENDATIONS

Overall, several improvements were registered on key SMP indicators. Although it's hard to determine the attributability of these improvements, it's clear that interventions, such as those put in place by SMP, are paramount towards the reduction of malaria morbidity and mortality in Uganda.

Pockets of bad results were however seen on a number of indicators and in certain levels of demographic characteristics. It is therefore important that the government through the Ministry of Health and implementing partners use effective approaches to prevent malaria,

particularly among children under five years and ANC pregnant women. Also, there is need to increase the use of ACTs among individuals, and particularly among children, suffering from malaria.

The indicator on ownership and use of mosquito nets produced statistically significant declines. However, the government of Uganda with the support of Global Fund and other partners is currently conducting a massive distribution of LLINs to all households in Uganda. The effect of this distribution was already evident in the Eastern region of Uganda; where the results on ownership and use of mosquito nets were much better than those from other regions of the country.

1. INTRODUCTION

1.1. Background

The Stop Malaria Project (SMP) is a project funded by the U.S. President's Malaria Initiative (PMI). SMP is managed by Johns Hopkins University Bloomberg School of Public Health Centre for Communication Programs (CCP), Malaria Consortium (MC), the Infectious Diseases Institute (IDI), and Communication for Development Foundation Uganda (CDFU). SMP is designed to assist the Government of Uganda in reaching the PMI and Roll Back Malaria (RBM) goal of reducing malaria-related mortality by 70% by 2015 (MOP FY 2011), and subsequently contribute to the attainment of the Millennium Development Goals (MDGs). SMP works in particular with the National Malaria Control Programme (NMCP) and District Health Teams (DHTs), in reaching 85% coverage of children under five years of age and pregnant women with proven preventive and therapeutic malaria interventions, over a period of six years since 2008, including:

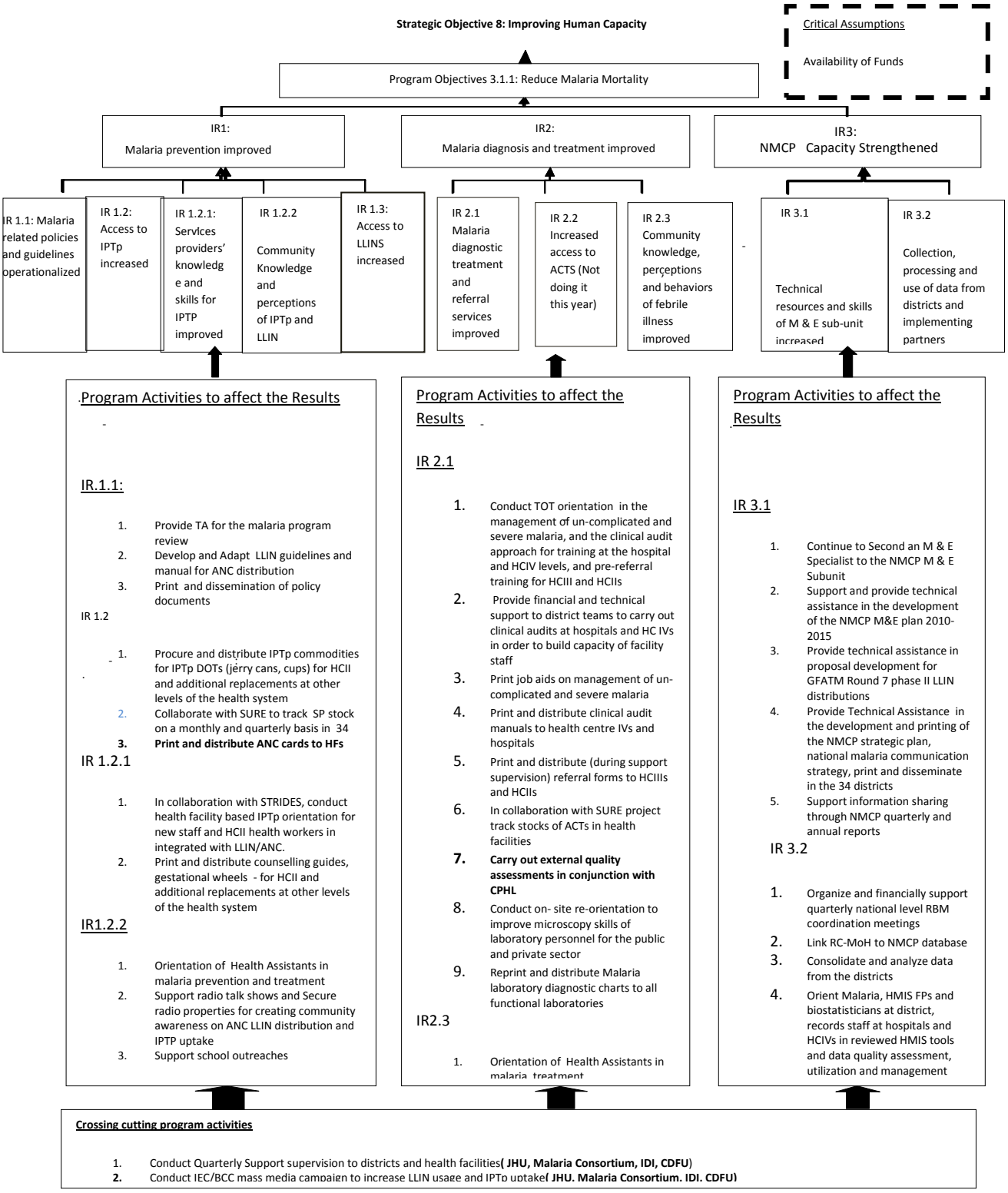
- Artemesinin-based Combination Therapy (ACTs), for treatment of uncomplicated malaria,
- Intermittent Preventive Treatment (IPTp) of malaria in pregnancy, and
- Long-lasting Insecticide Treated Nets (LLINs).

To accomplish the above, SMP implements the following activities: a) provision of malaria prevention commodities including jerry cans, water purification tables and cups for directly observed intermittent prevention of malaria among pregnant women; b) Support quarterly supervision; c) technical assistance and training of clinical personnel; d) distribution of nets to pregnant women and children under five years.

The project activities are implemented in close collaboration with the National Malaria Control Program (NMCP) and district local governments. The project currently covers 34 districts in three regions: (i) Central region covering 21 districts, (ii) Hoima region covering 5 districts and (iii) Teso region covering 8 districts. The survey targeted sampled public and PNFP health facilities in the 34 districts.

Activity implementation during the FY 2010/2011 was based on the results framework below: The framework provides a foundation for the project results, and activities that contributed to the results.This evaluation focused on the following intermediate result areas of the framework:

- Intermediate Result 1: Malaria prevention improved
- Intermediate Result 2: Malaria diagnosis, treatment and referral services improved


Strategic Objective 8: Improving Human Capacity
Critical Assumptions
Availability of Funds
Program Objectives 3.1.1: Reduce Malaria Mortality
IR1:
Malaria prevention improved
IR2:
Malaria diagnosis and treatment improved
IR3:
NMCP Capacity Strengthened
IR 1.1: Malaria related policies and guidelines operationalized
IR 1.2: Access to IPTp increased
IR 1.2.1: Services providers' knowledge and skills for IPTP improved
IR 1.2.2 Community Knowledge and perceptions of IPTp and LLIN
IR 1.3: Access to LLINS increased
IR 2.1 Malaria diagnostic treatment and referral services improved
IR 2.2 Increased access to ACTS (Not doing it this year)
IR 2.3 Community knowledge, perceptions and behaviors of febrile illness improved
IR 3.1 Technical resources and skills of M & E sub-unit increased
IR 3.2 Collection, processing and use of data from districts and implementing partners
Program Activities to affect the Results
IR.1.1:
1. Provide TA for the malaria program review
2. Develop and Adapt LLIN guidelines and manual for ANC distribution
3. Print and dissemination of policy documents
IR 1.2
1. Procure and distribute IPTp commodities for IPTp DOTs (jerry cans, cups) for HCII and additional replacements at other levels of the health system
2. Collaborate with SURE to track SP stock on a monthly and quarterly basis in 34
3. Print and distribute ANC cards to HFs
IR 1.2.1
1. In collaboration with STRIDES, conduct health facility based IPTp orientation for new staff and HCII health workers in integrated with LLIN/ANC.
2. Print and distribute counselling guides, gestational wheels - for HCII and additional replacements at other levels of the health system
IR1.2.2
1. Orientation of Health Assistants in malaria prevention and treatment
2. Support radio talk shows and Secure radio properties for creating community awareness on ANC LLIN distribution and IPTP uptake
3. Support school outreaches
Program Activities to affect the Results
IR 2.1
1. Conduct TOT orientation in the management of un-complicated and severe malaria, and the clinical audit approach for training at the hospital and HCIV levels, and pre-referral training for HCIII and HCIIs
2. Provide financial and technical support to district teams to carry out clinical audits at hospitals and HC IVs in order to build capacity of facility staff
3. Print job aids on management of un-complicated and severe malaria
4. Print and distribute clinical audit manuals to health centre IVs and hospitals
5. Print and distribute (during support supervision) referral forms to HCIIIs and HCIIs
6. In collaboration with SURE project track stocks of ACTs in health facilities
7. Carry out external quality assessments in conjunction with CPHL
8. Conduct on- site re-orientation to improve microscopy skills of laboratory personnel for the public and private sector
9. Reprint and distribute Malaria laboratory diagnostic charts to all functional laboratories
IR2.3
1. Orientation of Health Assistants in malaria treatment
Program Activities to affect the Results
IR 3.1
1. Continue to Second an M & E Specialist to the NMCP M & E Subunit
2. Support and provide technical assistance in the development of the NMCP M&E plan 2010-2015
3. Provide technical assistance in proposal development for GFATM Round 7 phase II LLIN distributions
4. Provide Technical Assistance in the development and printing of the NMCP strategic plan, national malaria communication strategy, print and disseminate in the 34 districts
5. Support information sharing through NMCP quarterly and annual reports
IR 3.2
1. Organize and financially support quarterly national level RBM coordination meetings
2. Link RC-MoH to NMCP database
3. Consolidate and analyze data from the districts
4. Orient Malaria, HMIS FPs and biostatisticians at district, records staff at hospitals and HCIVs in reviewed HMIS tools and data quality assessment, utilization and management
Crossing cutting program activities
1. Conduct Quarterly Support supervision to districts and health facilities(JHU, Malaria Consortium, IDI, CDFU)
2. Conduct IEC/BCC mass media campaign to increase LLIN usage and IPTp uptake(JHU. Malaria Consortium. IDI. CDFU)

1.2. Study rationale

Malaria remains one of the most important diseases in Uganda, causing significant morbidity, mortality, and economic loss. Children under age 5 and pregnant women are disproportionately affected. Hospital records suggest that malaria is responsible for 30 to 50 percent of outpatient visits, 15 to 20 percent of admissions, and 9 to 14 percent of inpatient deaths (2009, Uganda, Malaria Indicator Survey). Further, Uganda ranks 6th worldwide in number of malaria cases and 3rd in number of malaria deaths (World Health Organization, 2008). The overall malaria-specific mortality is estimated to be between 70,000 and 100,000 child deaths annually in Uganda, a death toll that far exceeds that for HIV/AIDS (Lynch et al., 2005). The Government of Uganda through the Uganda National Malaria Control Program (NMCP) is working with the Stop Malaria Project and other partners to reduce deaths due to malaria.

The SMP activities are designed to meet three intermediate results namely: (i) to improve and implement malaria prevention programs in support of the national malaria strategy; (ii) to improve and implement malaria diagnosis and treatment activities in support of the national malaria strategy; and (iii) to strengthen the NMCP capacity to monitor and evaluate interventions. Between July and August, 2011, SMP conducted a baseline Health Facility Assessment (HFA) survey in 235 facilities. The baseline HFA was based on benchmarks for a set of performance indicators and targets for FY 2011 as described in the Project Performance Monitoring Plan (PMP). This HFA is a follow up to that baseline study

1.3. Study objectives

SMP focuses on pregnant women and children under five years. The follow up HFA survey therefore sought to assess changes in capacity of the targeted health facilities to provide prevention, diagnosis and treatment of malaria for these populations. Specific objectives included:

- To assess changes in the availability of commodities, equipment, human resources, supplies and systems necessary to provide adequate malaria prevention, diagnosis and treatment in targeted facilities between baseline and follow up;
- To assess changes in the quality of client-provider interactions between baseline and follow up;
- To assess changes in knowledge, attitudes and practices of health workers regarding the prevention, diagnosis and treatment of malaria;
- To assess changes in the level of client satisfaction and overall facility experience among antenatal counseling (ANC) clients as well as clients seeking malaria services for children under 5 years;
- To provide recommendations to the Ministry of Health and other stakeholders for continuing capacity development in facilities after the Stop Malaria project closes in September, 2014.

2. METHODOLOGY

2.1. Introduction

This chapter elaborates the methodology used in the 2012/13 survey to obtain a representative sample, selection of respondents, quality assurance and ethical considerations. In addition, the section presents the methods used in data processing.

2.2. Research Design

2.2.1. Study Units and Population

Similar to the baseline 2011/12 survey, the study had the following study units and populations:

a. Public Health facilities supported by the Stop Malaria Project;
b. Health providers including Doctors, Clinical Officers, Midwives, Nurses and laboratory staff in selected facilities supported by the Stop Malaria Project;
c. ANC clients as well clients visiting the Outpatient department (OPD) to receive malaria care for children under-5 years.

While the study targeted the same facilities, the providers and clients interviewed were not necessarily the ones interviewed during the baseline HFA. Given that health providers were being interviewed to assess capacity of facilities, it was not necessary to interview the same providers.

2.2.2. Sample size

As was the case in the baseline, a total of 2115 individuals were targeted in the study.

The sections below discuss the sample size for each study unit and population:

I. ***Public health facilities***

The SMP project targets public health and nonprofit facilities in 34 districts in Uganda. The project supports a total of 1145 facilities including health Center IIs, Health Center IIIs, Health Center IVs and hospitals. This survey included 235 facilities. This sample size was calculated using

Yamane's formula for sample size calculation--equation 1

Equation 1

$$n_0 = \frac{N}{1 + N(e)^2}$$

where n_0 is the sample size, N (equal to 1145 supported health facilities) is the population size and e (equal to 5%) is the level of precision. Using equation 1, we get a required sample size of 296 health facilities.

But because our sampling frame of public health facilities is finite (1145 targeted public health facilities), we adjust for finite populations using a correction factor formula suggested by Yamane (equation 2)

Equation 2

$$\mathbf{n} = \frac{n_0}{1 + \frac{n_0 - 1}{N}}$$

Given that districts vary in size and the number of facilities targeted vary, we did not not select an equal number of facilities in each district. On the contrary, the number of facilities selected for the study was proportional to the number of facilities supported in that district. As an example, a district representing one fifth of all supported facilities also represented one fifth of facilities in the survey. Selection of facilities within each district took into account the following factors; a) inclusion of all types of facilities (i.e Health Center IIs, Health Center IIIs, Health Center IVs, and hospitals); b) the proportion of each type of facility among the supported districts. Therefore, given that most districts have one or two hospitals and a relatively small number of health Center IVs, at least one hospital and one health Center IV from each district was included in the sample (Table 1). Health Center IIIs and Health Center IIs were selected proportional to their representation in the SMP supported facilities list in each district. We randomly selected health providers, and clients from these facilities as discussed below.

Table 1: Number of facilities assessed per district

District	Number of facilities assessed
Amuria	8
Buikwe	8
Bukedea	2
Bukomansimbi	2
Buliisa	2
Butambala	4
Buvuma	2
Gomba	4
Hoima	12
Kaberamaido	4
Kalungu	3
Katakwi	5
Kayunga	5
Kibaale	12
Kiboga	5
Kiryandongo	4
Kumi	4
Kyankwanzi	4
Luwero	13
Lwengo	5
Masaka	6
Masindi	7
Mityana	12
Mpigi	6
Mubende	13
Mukono	10
Nakaseke	5
Nakasongola	7
Ngora	2
Rakai	20
Serere	5
Soroti	6
Ssembabule	5
Wakiso	23
Total	**235**

II. Health Service providers

Health service providers participated in 3 data collection activities; 1) Facility audit; 2) Health provider knowledge, attitude and practice assessment and 3) the client provider observations. We included in the sample, 940 health providers comprising of 235 facility managers, 235

laboratory workers and 470 other health workers who were assessed for their knowledge and attitudes. We discuss below the numbers and selection of health workers for each of the above activities.

a) Facility Audit: The facility audit sought to assess the facility's capacity to diagnose and treat malaria. For each one of the public health facilities, we interviewed the facility manager or their designee as well as the most senior health worker involved in the delivery of laboratory services (a lab technologist or other person) or their designee. These two were selected purposively because of their positions. Therefore 235 facility managers (or their designees) and 235 laboratory workers were interviewed from the 235 selected facilities.

b) Health provider, knowledge, attitude and practice assessment: At each facility, 2 health providers; one health provider from the ANC clinic and one health provider from the OPD were randomly selected to participate in the knowledge, attitude and practice assessment, for a total of 470 providers/interviews. Because some facilities did not provide ANC services, research staff compensated for ANC providers at the next facility, i.e. more than one ANC provider could be interviewed at the next facility if there was none at the previously visited facility.

c) Client Provider observations: In addition to the knowledge and attitude interviews mentioned above, the two health providers (the ANC provider and the OPD provider) were **each** observed providing services to **2** clients. The observations of the ANC provider were solely conducted by a research assistant. One of the observations of the OPD clients was conducted by a research assistant and the other by a mystery client (details provided below). Therefore, we observed a total of 3 real clients. There were 940 observations. These observations included 705 real clients and 235 mystery client observations. Health providers who agreed to be observed had to agree to be interviewed. In some facilities more than 3 observations were conducted if observations were carried over from a previously visited facility that did not have ANC services and ANC providers. However, the overall number of observations did not exceed 940.

III. *Service Clients*

Service clients were involved in two data collection activities: i) the Client-provider observations; and ii) the exit interviews.

Five exit interviews at each facility were targeted. Three of the five clients at each facility were observed and interviewed while the remaining 2 were only interviewed. Therefore, a total of 1175 interviews were to be conducted. Clients who agreed to be observed also had to agree to be interviewed. Because some facilities did not have ANC services, interviews and observations at facilities without ANC were carried over to the next visited facility with ANC services.

The study targeted to observe three real clients at each facility. Among the clients served by the ANC provider, interviewers randomly selected and observed interactions involving 2 pregnant women. One client seen by the OPD health worker was randomly selected for observation. In each facility, an additional observation of the OPD health worker was made by a mystery client or a trained individual posing as a client. The latter involved somebody who acted as a caretaker of a child complaining of malaria related symptoms. In some cases,

these mystery clients were recruited from the facility (i.e caretakers of children waiting to receive malaria services while in others mystery clients were recruited from the community). The difference between the mystery clients and other clients included in the study was that the mystery client was coached on how they should act in the examination room and helped the research assistant to complete the observation tool once the consultation was complete. Unlike the other observations, the research assistant was not in the room during consultations involving the mystery client. Mystery clients are commonly used in observations of client provider interactions. They ensure that health providers do not adjust their behavior because they are being observed. In this study, they provided an opportunity to observe the client provider interactions as they would occur with a typical client. Research assistants assisted the mystery client to complete the client-provider observation tool after the consultation. Mystery clients were oriented on their task and advised to decline any medication provided during the consultation. This was necessary since they did not need the medication as they were not real clients but individuals who were acting to be sick.

2.2.3. Study Procedure

The sections below provide a detailed description of the study procedures.

a) General study design and methods.

We used a cross sectional survey design. Quantitative research methods were employed to assess the quality of malaria care and treatment in the targeted facilities.

b) Data Collection

The study targeted health facilities, and services providers at 235 facilities. ANC pregnant women and caretakers of children under 5 years seeking care and treatment for malaria at these facilities also were included. Survey activities were carried out in 34 districts in three regions:

(i) **Central region**: Buikwe, Bukomansimbi, Butambala, Buvuma, Gomba, Kalungu, Kayunga, Kiboga, Kyankwanzi, Luweero, Lwengo, Masaka, Mityana, Mpigi, Mubende, Mukono, Nakaseke, Nakasongola, Rakai, Sembabule, and Wakiso
(ii) **Hoima region:** Buliisa, Hoima, Kibaale, Kiryandongo, and Masindi
(iii) **Teso region:** Amuria, Bukedea, Kaberamaido, Katakwi, Kumi, Ngora, Serere and Soroti.

The study collected data on the following;

a) Malaria related commodities, equipment, human resources and systems available in each facility;

b) Knowledge, attitudes, skills of health professionals providing malaria treatment;

c) Quality of the client provider interaction/consultations;

d) Satisfaction with services and general experience of ANC clients and caretakers of children below five years complaining of malaria symptoms;

The study used a combination of tools to collect the above data. These tools included:

- a facility audit questionnaire;
- a service provider questionnaire;
- a client-provider observation checklist;
- a client exit interview questionnaire;

The tools adopted questions from tools used in the Uganda service provision assessment as well as other tools used in Uganda and other African countries to assess the quality of malaria care. We describe below each of the tools used in the HFA.

The facility audit questionnaire: This questionnaire included close ended questions that were posed to the facility manager (or their designee) and the most senior laboratory health worker or their designees. The questionnaire assessed whether the facility had the commodities, equipment, staff and systems needed to provide quality malaria prevention, testing and treatment services. The questionnaire was administered by a trained research assistant and took not more than one and half hours. The research assistant was responsible for making observations at the facility to confirm responses provided by the facility manager. Another 45 minutes could be used to make these observations around the facility. The facility audit questionnaire included the following sections: *(See Attachments)*

- Information on person participating in the facility audit
- Information on provided services and quality assurance
- Provision of intermittent preventive treatment of malaria and antenatal services
- Laboratory equipment and staff
- Commodities and supplies including MOH policies and guidelines related to malaria
- Malaria related behavior change communication
- HMIS and other data recording systems

The Health Service Provider questionnaire: This questionnaire was used to assess knowledge, attitudes and skills of health providers at each facility. The questionnaire also included questions on received training and supervision. Administering the service provider questionnaire was conducted by a trained research assistant and would not last more than one hour. *(See Attachments)*

Client-Provider observation checklist/tool: The client observation checklist was used to assess the quality of the client-provider interaction/consultations. This tool assessed whether the provider was following ministry of health and other clinical procedures. The tool included specific items for ANC mothers as well as consultations involving children complaining of malaria or malaria related symptoms. SMP used two types of individuals to collect data on the quality of the client-provider interaction. The first type of individual included a trained research assistant who observed client-provider interactions with a real client. SMP recruited research assistants who had a medical background for these observations. The second set of individual included a mystery client, or a trained individual who acted and presented him/herself as a client to the provider.

The guide had the following sections *(See Attachments)*

- Observation of ANC process

- Observation of consultation involving children suspected of having malaria
- Diagnosis and treatment of childhood malaria

Exit Interview questionnaire: The exit interview questionnaire was used to assess the level of satisfaction and overall experience of clients with provided services. This questionnaire was administered at the end of the client's visit. Administration of this questionnaire did not last more than one hour.

The Health provider selection worksheets: The study also included a listing worksheet for selection of health providers at the health facility. The lists included only the first name and last initial of the potential respondent and were destroyed once all individuals had been interviewed. Two separate lists were generated. The first included ANC workers at the facility on the day of the facility visit and the second, health providers in the OPD clinic that day. One ANC and one OPD health worker from each facility were selected. The facility manager or their designee was responsible for assisting the team in listing the providers.

2.2.4. Quality assurance procedures

Supervision and guidance to the field teams was provided by team leaders, quality controllers and the study coordinator. They ensured a regular progress of data collection in all the study districts. The following quality control procedures were put in place to ensure the collection of high quality data:

2.2.4.1. Field Interviewer Training

Training of interviewers consisted of a combination of classroom training and practical experience. Initial training was conducted for five days at Silver Springs Hotel in Kampala and a one-day refresher training was done at Kati-Kati hotel in Kampala just before going to the filed. Before each training session, interviewers were required to study their manual carefully along with the questionnaire. Interviewers were also given the opportunity to ask questions at any time to avoid mistakes during field work. Additionally, each interviewer was given a copy of the Questionnaire and the Interviewer's Training Manual for easy reference and guidance during field work.

During the training, the questionnaire sections, questions, and instructions were discussed in detail. Interviewers participated in demonstration interviews that were conducted in front of the class as examples of the interviewing process. They practiced reading the questionnaire to each other several times. They also participated in role playing in which they practiced by interviewing another trainee. After interviewer training, additional specialized training was provided on the specific duties of appointed supervisors and quality controllers. This ensured that all teams followed a uniform set of procedures and also it enabled the supervisors and quality controllers to learn - how to check the fieldwork and edit completed questionnaires.

2.2.4.2. Pre-testing study tools

The data collection tools were pre-tested by each interviewer – with at least two interviews conducted by each of them. The pre-test was done both in English and the respective local languages from selected facilities in Kampala, Wakiso and Mukono; among facilities that were not in the actual study. As part of the pre-test exercise, supervisors and quality controllers checked and edited the completed questionnaires. Questionnaire pre-test results were then entered in the database designed using EpiData Software. The data was later analyzed to test for utility, ambiguity and congruence of themes and items. Results of the pre-test were used to inform decisions as to which items to remove, add, improve or re-construct in the questionnaire.

2.2.4.3. Field supervision

Quality control during field work was implemented at two levels. Level 1 was accomplished by the Field Supervisor. As already described, the Field Supervisor edited questionnaires completed by field interviewers at the end of each day of data collection. Each supervisor was responsible for a team of 4 interviewers. He/she was instructed on how to carry out his/her duties including how to edit the questionnaires. Thorough editing of the questionnaires was important especially at the initial stages of fieldwork. The supervisor discussed with each interviewer the errors found in the collection of data. Second, supervisors observed interviews with a sole purpose of evaluating and improving interviewer performance. This enabled them to look for errors and misconceptions that could not be detected through editing.

In addition, the field supervisor conducted daily meetings with the interviewers to discuss the quality of their work. In most cases, mistakes were corrected and interviewing style improved by pointing out and discussing errors at regular meetings. At team meetings, the field supervisor would point out mistakes discovered during observation of interviews or noticed during questionnaire editing. The study supervisors monitored interviewer performance with the aim of improving and maintaining the quality of the data collected. Close supervision of interviewers and editing of completed interviews was done to ensure collection of accurate and complete data.

The second level of field supervision was accomplished by the quality controllers and the Study Coordinator, whose role was to provide overall leadership to the field supervisors. Both officers would conduct team audits throughout the study, communicated any problems to the entire team in the field that arise, regularly checked completed questionnaires from the study supervisors for errors, assessed compliance to regulations and procedures that the teams are given, and ensured that the problems reported by field supervisors are resolved. Lastly, the quality controllers and study coordinator conducted on-spot checks to ensure that the teams were in their assigned areas and that the sampled facilities were actually the ones being visited.

2.2.5 Ethical Consideration

Ethical clearance for the survey was obtained from by the Uganda National Council for Science and Technology (UNCST).

Individual informed consent was sought from all health providers, health facility in-charge and exit clients before interviews were conducted, captured either by the signature of the respondent or if they were not able to provide a signature, by their right hand thumb print. Before each interviewee was asked to give consent, the interviewer gave a brief description of the survey objectives, the data collection procedure, the expected benefits, and the voluntary nature of participation at all stages of the interview. All participants were ensured that data would be kept confidential and would not be shared with non-project staff.

2.2.6. Data Processing and Analysis

The design of data entry screens started shortly after the questionnaire review process. The microsoft. Visual FoxPro software was used to develop data entry screens and this was fitted with the range and consistency checks. Data entry clerks were selected from among the trainees who participated in the field interviewer training. Because they had participated in the interviewer's training, they were very familiar with the household questionnaire which made it easier for them to enter data quickly and with minimal data entry errors.
Data analysis was then performed using Stata 12 (StataCorp 2011) software which was used to manage the dataset by running consistency checks, clean the data. Ms. Excel was also used to produce graphs for visual display in the HFA report.

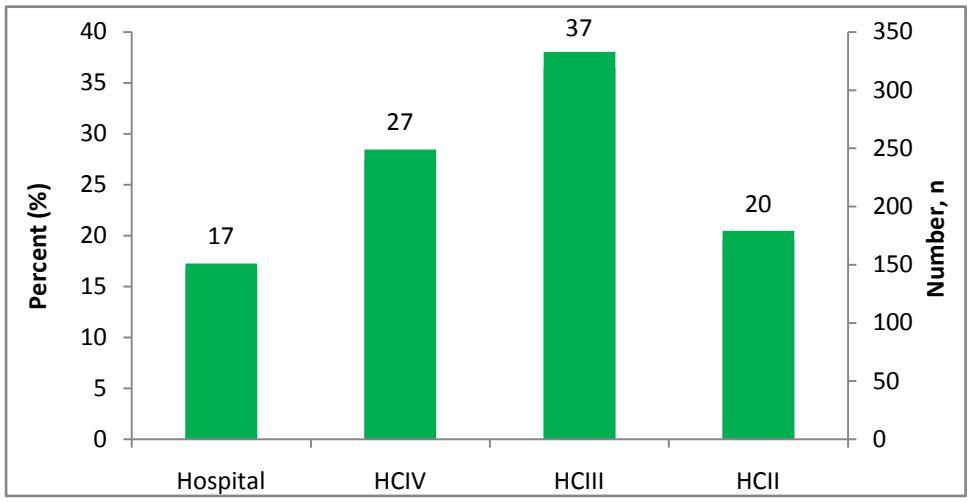
3. CHARACTERISTICS OF CLIENTS

3.1. Introduction

This chapter assesses responses from clients captured using the exit interview questionnaire. This questionnaire; which was administered at the end of the client's visit was used to assess the level of satisfaction and overall experience of clients with provided services.

In total, 912 clients found in 235 health facilities were interviewed, (**Figure 1**). More than a third of the clients were from HC IIIs (37%), HC IVs contributed 27 percent, HC IIs contributed 20 percent and 17 percent of the clients were from hospitals.

Figure 1: Distribution of exit clients by type of facility



3.2. Residence of Respondents

Table 2 shows the distribution of clients categorized into three SMP geographical areas of operation; Central, Eastern (also referred to as Teso region) and the Mid western (referred to as Hoima region). To obtain the geographical distribution, we sub-divided the districts into 3 clusters as follows: **(i) Central region**: Buikwe, Bukomansimbi, Butambala, Buvuma, Gomba, Kalungu, Kayunga, Kiboga, Kyankwanzi, Luweero, Lwengo, Masaka, Mityana, Mpigi, Mubende, Mukono, Nakaseke, Nakasongola, Rakai, Sembabule, and Wakiso **(ii) Teso region:** Amuria, Bukedea, Kaberamaido, Katakwi, Kumi, Ngora, Serere and Soroti and **(iii) Hoima region:** Buliisa, Hoima, Kibaale, Kiryandongo, and Masindi.

Of all exit clients, 65% were from the Central region, followed by the Mid western with 18% and the Eastern with 17%, (Table 2).

Table 2: Background characteristics of clients interviewed.

Background Characteristics	EXIT Interview respondents who were women	All EXIT Interview respondents	Number
Overall (%)	93.6	100	
Number (N)	854	912	912
Region[1]			
Central	64.2	64.5	588
Eastern	17.6	17.2	157
Mid western	18.3	18.3	167
Age (years)			
15-19	11.5	11.4	104
20-24	35.9	35.0	319
25-29	25.2	24.7	225
30-34	15.9	16.9	154
35-39	5.5	6.0	55
40-44	2.1	2.2	20
45-49	1.1	1.2	11
50+	1.8	1.6	15
Missing	1.1	1.0	9
Education[2]			
None	12.4	12.2	111
Primary	54.7	54.7	499
Secondary+	25.5	26.0	237
Missing	7.4	7.1	65

3.3. Age and Sex of the Clients

The age distribution of clients was categorized into five year age groups generated from the questions on age (in complete years) and gender of the respondent. As seen from Table 2, more than 9 in 10 (94%) clients interviewed were female reflecting gender differences in health seeking behaviour. About three quarters (73%) of the clients were females aged between 15 to 29 years. Also, 3% of clients were either over 50 years of age (2%) or missed data on age (1%). Hence, in most of the analyses in this report, we concentrated on the age range 15 – 49 years to avoid the problem with small numbers.

3.4. Education attainment

Education affects many aspects of life including health behaviour for individuals and the people they care for. Studies have also shown that educated people are more likely to be knowledgeable and practice preventative behaviour against killer diseases such as malaria. In the HFA survey, data was collected on the highest level of education attained by clients and categorized at analysis into three: No education, Primary and Secondary and above. As shown

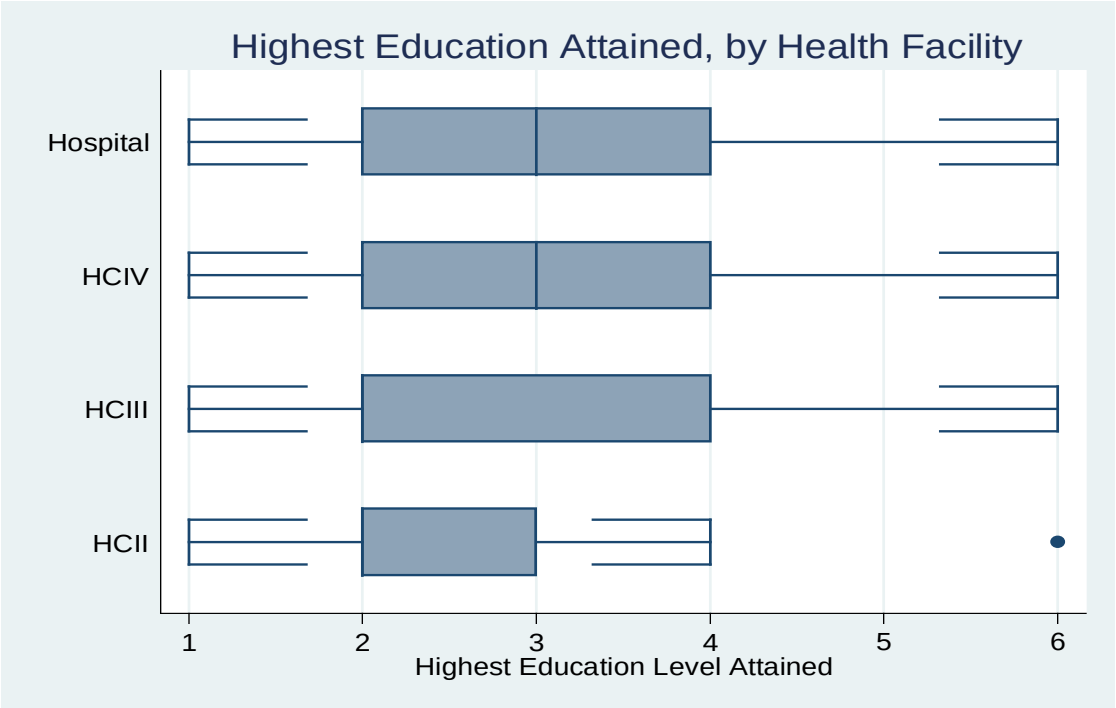
[1] The Eastern region is also referred to Teso region and the Western is referred to as Hoima region.
[2] Education refers to highest level of education attained.

in Table 2 above, 12% of clients participants attained reported they had no education at all, 55% of the participants attained primary education and 26% attained secondary education or higher.

Uncategorized responses on highest level of education attained, were used to establish differences in education attained by level of health facility. In **Figure 2**, the highest level of education attained is represented graphically by health facility where 1=None, 2=Some Primary, 3=Completed Primary, 4=O'level, 5=A'level and 6=University/Tertially.

Among clients found in hospitals and HC IVs, the median education level attained was 'completed primary' while among those in HC IIIs and HC IIs, the median education level attained was 'some primary'.

Figure 2: Highest level of education attained, by type of health facility.



Generally, the overall education levels in the sample were low. Clients from the central were more likely to be educated with 16% reporting that they completed secondary level or above followed by those from the Eastern (13%) and Mid western (5%), (Table 3).

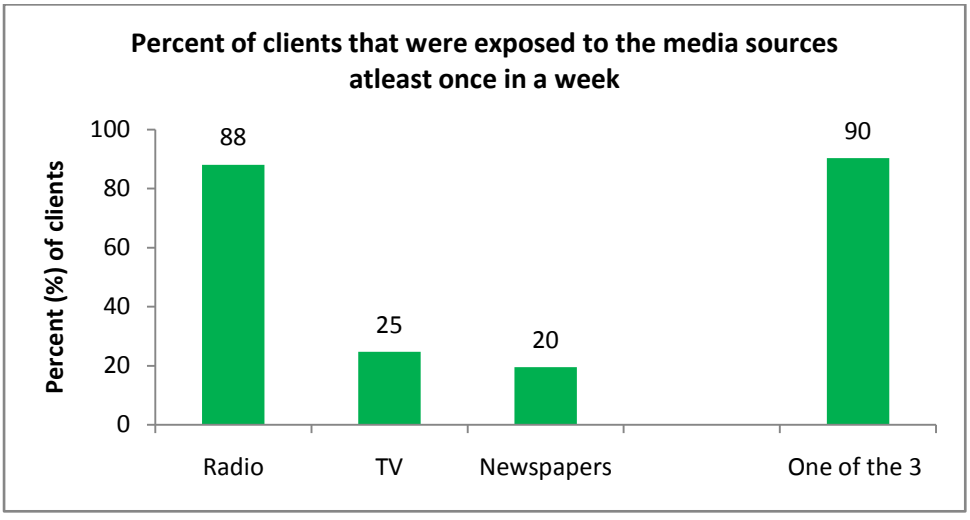
Table 3: Uncategorized highest education level attained by characteristics of clients interviewed.

Background Characteristic	None	Some Primary	Completed Primary	Some Secondary	Completed Secondary	More than Secondary	Number
Overall	***12.2***	***37.7***	***17.0***	***19.4***	***3.0***	***10.7***	***912***
Gender							
Male	8.6	32.8	22.4	20.7	3.4	12.0	58
Female	12.4	38.1	16.6	19.3	2.9	10.7	854
Agegroup (years)							
15-19	4.8	41.3	18.3	26.0	1.9	7.7	104
20-24	8.2	35.4	17.9	24.5	4.7	9.4	319
25-29	12.9	35.1	16.9	18.7	2.2	14.2	225
30-34	18.2	37.0	13.6	17.5	2.6	11.0	154
35-39	23.6	45.5	14.5	5.5	1.8	9.1	55
40-44	20.0	50.0	25.0	0.0	0.0	5.0	20
45-49	9.1	54.5	27.3	0.0	0.0	9.1	11
50+	13.3	60.0	13.3	0.0	0.0	13.3	15
Region							
Central	13.8	32.8	16.8	20.1	3.7	12.7	588
Eastern	7.6	48.4	13.4	17.8	1.9	10.8	157
Mid western	10.8	44.9	21.0	18.6	1.2	3.6	167

3.5. Exposure to mass media

Access to information is essential in increasing people's knowledge and awareness of what is happening around them, which influences their health perceptions and behaviors. In the survey, exposure to the media was assessed by asking respondents how often they listened to radio, watched television or read a newspaper or magazine in a week.

Figure 3: Overall proportions exposed to radio, TV and Newspapers at least once in a week



As seen in **Figure 3**, the radio, by far, is the most popular media source with close to 9 in 10 clients (88%) reporting listening in at least once in a week followed by the TV with 25% and the newspapers or magazine with 20%. Notably, 90% of clients, reportedly, listened to atleast one of the sources once in a week.

Table 4: Percentage of respondents who were exposed to specific media on a weekly basis, by background characteristics.

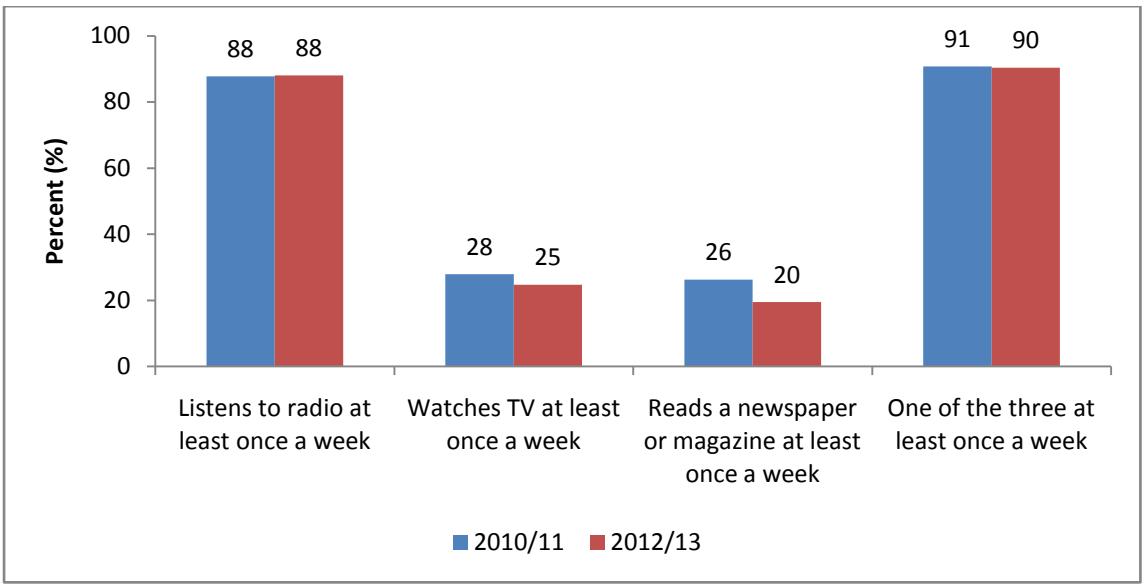
Background Characteristic	Listens to radio at least once a week	Watches TV at least once a week	Reads a newspaper or magazine at least once a week	One of the three at least once a week	Number
Overall	***88.1***	***24.7***	***19.5***	***90.4***	***912***
Gender					
Male	87.9	36.2	39.7	93.1	58
Female	88.1	23.9	18.1	90.2	854
Agegroup (years)					
15-19	90.4	31.4	18.3	92.3	104
20-24	90.0	25.3	20.8	92.2	319
25-29	89.3	27.1	21.3	91.6	225
30-34	85.7	19.9	17.8	89.6	154
35-39	81.8	21.8	23.6	85.5	55
40-44	75.0	5.0	5.0	75.0	20
45-49	100.0	9.1	18.2	100.0	11
50+	73.3	21.4	0.0	80.0	15
Education					
None	75.5	16.7	2.8	77.5	111
Primary	88.4	14.1	9.1	90.0	499
Secondary+	94.5	48.5	47.0	98.7	237
Region					
Central	89.9	30.5	23.4	92.3	588
Eastern	80.8	14.8	16.6	82.2	157
Mid western	88.6	13.1	8.5	91.0	167

Taking a closer look at media exposure among clients by their demographic characteristics revealed that those from health facilities in the Central region (92%) and Mid western region (91%) were more likely to be exposed to atleast one media source compared to their counterparts from the Eastern region (82%). In addition, the likelihood of exposure to media sources increased with increasing education levels attained. This exposure was 78% among clients with no education, 90% among those with primary education and 99% among clients with secondary education and above, (Table 4).

In comparison to the 2010/11 survey, exposure to specific media on a weekly basis has not changed. The proportion that listens to radio at least once a week remained unchanged at

88%, those that watch TV at least once a week changed slightly from 28% to 25% while those that read newspapers or magazines atleast once a week declined from 26% to 20%. Importantly, those who reported exposure to one of the three atleast once a week were 91% in 2010/11 and 90% in 2012/13.

Figure 4: Exposure to specific media on a weekly basis by survey year



4. INTERMEDIATE RESULT 1: MALARIA PREVENTION IMPROVED

4.1. Introduction

This section presents results on indicators about the use of effective approaches to prevent malaria, particularly among children under five years and ANC pregnant women. The ultimate goal is reducing malaria-related mortality by reducing the incidence of both uncomplicated and complicated malaria.

Over the project span, SMP has increased these preventive behaviours by supporting MOH efforts to improve the delivery of preventive services through revised policies and broader dissemination and implementation of these policies, guidelines and tools; by working with national, district, and community stakeholders to facilitate an enabling environment for more effective implementation of IPTp Directly Observable Therapy (DOT); by distributing LLIN directly through time-limited campaigns and indirectly through ANC services; and by implementing community mobilization and BCC activities to promote IPTp and ITN use. Together, these activities sought to improve malaria prevention by increasing access to IPTp and LLINs, by improving service providers' knowledge, attitudes, and skills related to IPTp and ITNs, and by improving community members' knowledge and attitudes regarding IPTp and ITN use.

Also, based on the results of the UMIS, SMP designed and implemented a communication strategy focused on malaria prevention through proper use of LLINs distributed in year 3**.**

4.2. Knowledge of Cause of Malaria

4.2.1. Knowledge of Causes of Malaria among all clients

Public health research has showed that knowledge and exposure to malaria messages is paramount to the effectiveness of malaria interventions. Therefore, the Stop Malaria project aims to increase knowledge of malaria among the general population. In the HFA survey, respondents' knowledge on the cause of malaria was ascertained by asking them how malaria spreads.

As shown in Table 5, knowledge that malaria is caused by mosquitos has improved, significantly among all clients (ANC mothers and caregivers of children under 5 years), from 74% in 2010/11 to 94% in 2012/13, p-value: <0.001. Notably, this knowledge has improved significantly in all levels of demographic characteristics except among those with no education.

Table 5: Knowledge of causes of malaria among all clients by selected demographic characteristics

Background Characteristic	2010/11		2012/13		P-value
	%	Number	%	Number	
Overall	***74.0***	***767***	***94.3***	***713***	**<0.001**
Gender					
Male	75.0	53	94.4	51	0.006
Female	73.7	714	94.3	662	<0.001
Age (years)					
15-19	70.8	73	94.9	74	<0.001
20-24	79.1	224	95.0	250	<0.001
25-29	69.7	243	91.3	167	<0.001
30-34	75.6	156	95.6	130	<0.001
35-39	76.7	51	100.0	48	<0.001
40-44	80.0	11	100.0	18	0.048
45-49	55.6	8	80.0	8	0.296
Education					
None	85.0	49	88.4	84	0.572
Primary	75.5	493	94.6	385	<0.001
Secondary+	72.9	225	96.0	192	<0.001
Region					
Central	71.7	548	92.9	461	<0.001
Eastern	88.8	109	98.0	149	0.002
Mid western	71.8	110	95.4	103	<0.001

4.2.2. Knowledge of Causes of Malaria among caretakers of children under 5 years

Among caretakers of children under 5 years, knowledge that malaria is caused by mosquitos has improved, significantly, from 74% in 2010/11 to 93% in 2012/13, p-value: <0.001. The distribution of knowledge changes by levels of demographic characteristics is summarized in Table 6 below.

Table 6: Knowledge of cause of malaria among caretakers of children under 5 years by selected demographic characteristics

Background Characteristic	2010/11		2012/13		P-value
	%	Number	%	Number	
Overall	***73.6***	***235***	***92.6***	***298***	<0.001
Gender					
Male	74.0	28	91.7	36	0.056
Female	72.7	207	92.7	262	<0.001
Age (years)					
15-19	69.8	9	100.0	12	0.041
20-24	78.1	74	94.7	94	0.001
25-29	68.7	58	86.3	73	0.015
30-34	74.6	49	93.5	62	0.005
35-39	75.7	21	100.0	26	0.008
40-44	81.0	9	100.0	12	0.115
45-49	54.6	5	66.7	6	0.682
Education					
None	84.0	13	92.5	40	0.366

Primary	73.5	128	92.0	174	<0.001
Secondary+	71.9	52	94.1	68	0.001
Region					
Central	70.7	170	90.6	180	<0.001
Eastern	87.8	26	96.5	57	0.116
Mid western	70.8	39	95.1	61	0.001

4.2.3. Knowledge of Cause of Malaria among pregnant women

In addition to examining knowledge of malaria among care givers of children under five years, this analysis also examined malaria knowledge among pregnant women only. As shown in Table 7, knowledge that malaria is caused by mosquitos among pregnant women improved, significantly, from 74% in 2010/11 to 95% in 2012/13, p-value: <0.001. The distribution of knowledge changes among pregnant women by levels of demographic characteristics is summarized in Table 7 below.

Table 7: Knowledge that malaria is caused by mosquitos among pregnant women by selected demographic characteristics

Background Characteristic	2010/11		2012/13		P-value
	%	Number	%	Number	
Overall	***74.0***	***362***	***94.8***	***345***	<0.001
Age (years)					
15-19	72.2	54	92.2	51	0.008
20-24	78.5	143	95.6	136	<0.001
25-29	69.5	93	93.3	89	<0.001
30-34	75.2	52	96.0	50	0.003
35-39	75.1	14	100.0	13	0.054
40-44	81.6	3	100.0	3	0.436
45-49	55.0	1	100.0	1	-
Education					
None	84.6	16	84.2	38	0.971
Primary	74.0	199	95.1	183	<0.001
Secondary+	73.0	106	98.0	99	<0.001
Region					
Central	75.0	228	93.3	225	<0.001
Eastern	88.0	57	98.8	84	0.001
Mid western	71.5	77	94.4	36	0.006

4.3. Ownership and Source of Mosquito Nets

4.3.1. Ownership and Source of Mosquito Nets by Clients

Respondents were asked if they owned a mosquito net, whether it was an ITN and for those who owned a net, where they got it. As shown in Table 8, the proportion with an ITN between the 2010/11 and 2012/13 surveys declined significantly from 64% to 54%, p-value: <0.001. Notably, in the 2012/13 survey, clients from the Eastern (92%) were more likely than their counterparts from the Central (68%) and Mid western (48%) to own a mosquito net of any type. Also in the 2012/13 survey, Secondary and above level clients (60%) were more likely to own an ITN compared to their primary (52%) and non-educated counterparts (42%).

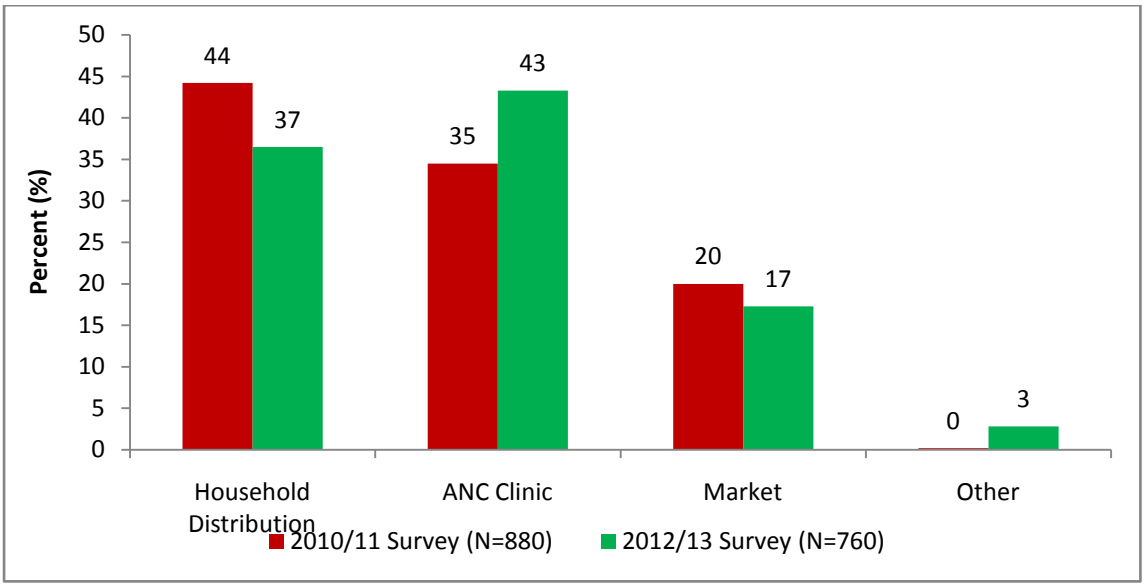
Table 8: Ownership of mosquito nets among all clients by selected demographic characteristics

Background Characteristic	2010/11 Any mosquito net Percent	2010/11 Insecticide-treated mosquito nets (ITNs) Percent	2010/11 Number	2012/13 Any mosquito net Percent	2012/13 Insecticide-treated mosquito nets (ITNs) Percent	2012/13 Number	P-Value[3] (Any net)	P-Value[4] (ITN)
Overall	***79.0***	**64.2**	**880**	***70.3***	**54.2**	**760**	**<0.001**	**<0.001**
Gender								
Male	76.3	51.1	59	66.7	43.1	51	0.264	0.402
Female	78.3	65.6	734	70.5	55.0	709	0.001	<0.001
Agegroup (years)								
15-19	82.7	56.4	62	61.7	49.4	81	0.006	0.406
20-24	72.0	64.5	172	64.9	50.2	265	0.121	0.003
25-29	80.6	63.9	216	76.4	61.5	182	0.308	0.622
30-34	83.9	65.6	151	73.9	56.7	134	0.038	0.123
35-39	82.5	71.2	52	77.1	60.4	48	0.501	0.255
40-44	93.3	42.9	14	77.8	38.9	18	0.228	0.819
45-49	55.6	40.0	5	72.7	54.5	11	0.499	0.591
Education								
None	61.9	57.7	42	58.8	42.3	97	0.732	0.095
Primary	78.9	60.4	489	67.7	52.0	406	<0.001	0.012
Secondary+	81.9	71.8	221	78.9	60.3	204	0.436	0.012
Region								
Central	75.8	63.3	619	68.2	49.8	500	0.005	<0.001
Eastern	86.8	52.5	114	92.2	82.5	154	0.147	<0.001
Mid western	86.4	76.4	147	48.1	34.0	106	<0.001	<0.001

Among all clients, 44% in 2010/11 and 37% in 2012/13 reported that they got their mosquito nets from household distributions. In addition, 35% of clients in the 2010/11 survey and 43% from the 2012/13 survey received nets from the ANC clinic. Furthermore, 20% of clients in the 2010/11 survey and 17% of clients in the 2012/13 survey received nets from the market, (Figure 5).

[3] Compares change in ownership of Any net between 2010/11 and 2012/13
[4] Compares change in ownership of ITN between 2010/11 and 2012/13

Figure 5: Source of mosquito net



4.3.2. Ownership and Source of Mosquito Nets by Pregnant women

Among pregnant women, the proportion with any net between 2010/11 and 2012/13 has declined significantly from 88% to 69%, p-value: <0.001, (Table 9). However, the proportion with an ITN has nearly remained unchanged from 56% to 55%, P-value: <0.729. The proportion with an ITN for the 2012/13 survey was much higher in the Eastern region (77%) compared to the Central (49%) and Mid western (28%) regions. The higher percentage observed in Eastern region is likely because universal LLIN distribution had already started off in that region by the time of the survey. It is hypothesized that the decline in ownership of nets is due to stockouts of ANC LLINs in the Kampala stores including districts due to the fact that SMP did not receive nets from PMI in 2013 because of the support to the national universal LLIN distribution.

Table 9: Ownership of mosquito nets among pregnant women by selected demographic characteristics

Background Characteristic	2010/11			2012/13			P-Value[5] (Any net)	P-Value[6] (ITN)
	Any mosquito net Percent	Insecticide-treated mosquito nets (ITNs) Percent	Number	Any mosquito net Percent	Insecticide-treated mosquito nets (ITNs) Percent	Number		
Overall	***82.0***	***55.8***	***362***	***69.3***	***54.5***	***340***	***<0.001***	***0.729***
Agegroup (years)								
15-24	81.0	51.4	142	62.0	46.0	187	<0.001	0.332
25-49	82.5	57.8	211	78.5	65.1	151	0.340	0.161
Education								

[5] See Footnote 3 above
[6] See Footnote 4 above

None	75.0	43.8	16	56.8	40.5	37	0.209	0.823
Primary	81.9	55.8	199	67.2	53.1	177	0.001	0.600
Secondary+	84.0	58.5	106	75.0	59.0	102	0.107	0.942
Region								
Central	77.2	53.1	228	66.7	49.3	225	0.013	0.419
Eastern	91.2	50.9	57	88.1	77.4	86	0.557	0.001
Mid western	89.6	67.5	77	34.5	27.6	29	<0.001	<0.001

4.4. Use of Mosquito Nets

4.4.1. Use of Mosquito Nets by Children under 5 years

Sleeping under insecticide treated nets is a recognized way of preventing malaria. In both surveys, caretakers were asked if their children under five slept under any net and whether the net was an ITN. Survey results show that the proportion of the care takers with children under 5 years that slept under any mosquito net the night before the survey declined, significantly, from 75% to 66%, (P-value: 0.037). On the contrary, the proportion that slept under an ITN the night before the survey improved slightly from 42% to 46%, P-value: 0.473 (

Table 10).

Care takers with secondary education or more were more likely to have their children sleep under ITNs compared to care takers with less than secondary education. Also, sleeping under any mosquito net was highest in the Eastern region (95%) compared to the Central region (62%) and Mid western region (53%).

Table 10: Percent of Children under 5 years who slept under a mosquito net the night before survey by Selected Demographic Characteristics

	2010/11			2012/13				
Background Characteristics of care-takers	**Any mosquito net**	**An ITN**	**Number**	**Any mosquito net**	**An ITN**	**Number**	**P-Value[7] (Any n)**	**P-Value[8] (ITN)**
Overall	***74.7***	***42.4***	***235***	***66.4***	***45.5***	***301***	***0.037***	***0.473***
Age (years)								
15-24	67.2	31.3	72	59.5	47.7	111	0.293	0.028
25-49	77.2	45.6	163	69.3	43.2	176	0.101	0.657
Education								
None	45.5	18.2	13	55.8	41.9	43	0.514	0.120
Primary	74.0	39.5	128	63.8	42.0	174	0.060	0.662
Secondary+	77.1	47.9	52	79.4	54.4	68	0.762	0.480
Region								
Central	71.0	36.8	170	61.7	39.4	180	0.066	0.617
Eastern	88.0	40.0	26	94.9	84.7	59	0.257	<0.001

[7] Compares change in use of any net between 2010/11 to 2012/13
[8] Compares change in use of ITN between 2010/11 to 2012/13

Mid western	81.1	67.6	39	53.2	25.8	62	0.004	<0.001

4.4.2. Use of Mosquito Nets by Pregnant Women

Survey results show that the proportion of pregnant women who slept under any mosquito net the night before the survey declined, significantly, from 74% to 65%, P-value: 0.009. On the contrary, the proportion that slept under an ITN the night before the survey nearly remained unchanged from 49% to 50%, P-value: 0.712 (Table 11).

Pregnant women with secondary education or more were more likely to sleep under ITNs compared to those with less than secondary education. Also, sleeping under any mosquito net was highest in the Eastern region (91%) compared to the Central region (59%) and Mid western region (35%).

Table 11: Percents of Pregnant Women who slept under a mosquito net the night before survey by Selected Demographic Characteristics

Background Characteristics of care-takers	2010/11			2012/13			P-Value[9] (Any net)	P-Value[10] (ITN)
	Any mosquito net	An ITN	Number	Any mosquito net	An ITN	Number		
Overall	***73.8***	***48.7***	***355***	***64.7***	***50.1***	***339***	***0.009***	***0.712***
Age (years)								
15-24	73.4	46.0	139	56.1	40.6	187	0.001	0.330
25-49	74.4	50.2	207	75.3	62.0	150	0.847	0.027
Education								
None	60.0	13.3	15	57.9	39.5	38	0.889	0.066
Primary	73.1	48.7	197	61.6	47.5	177	0.018	0.817
Secondary+	78.4	56.9	102	69.3	55.4	101	0.140	0.829
Region								
Central	69.4	49.6	222	58.5	43.3	224	0.017	0.182
Eastern	87.5	44.6	56	90.7	76.7	86	0.544	<0.001
Mid western	76.6	49.4	77	34.5	24.1	29	<0.001	0.019

4.5. Knowledge of IPTp among Pregnant Women

During pregnancy, malaria infection can cause serious adverse effects on both the mother and the unborn baby. Knowledge of the medicines to take to avoid malaria is important among pregnant women. To avoid adverse effects, the National Malaria control policy recommends pregnant women should receive two doses of Sulphadoxine/Pyrimethamine (SP) as intermittent preventive therapy (IPTp).

[9] See Footnote 7 above
[10] See Footnote 8 above

To ascertain this knowledge among pregnant women, the survey assessed pregnant ANC women by asking them to cite these medicines and the recommended dosage taken to avoid getting malaria during pregnancy.

Table 12 below shows that knowledge of Sp/Fansidar for IPTp improved significantly between 2010/11 (86%) and 2012/13 (96%), (P-value: <0.001). The overall percentage of IPTP 2 in SMP districts is a key indicator. Importantly, knowledge of the number of recommended doses of IPTp improved, significantly, from 57% to 73%, P-value: <0.001.

Table 12: Knowledge that SP/Fansidar is the recommended IPTp and knowledge of recommended dosage among pregnant women by selected demographic characteristics

Background Characteristic	Knowledge of Sp / Fansidar	Number	1 time	2 times	3 or more times	Don't know
2010/11 Survey						
Overall	***86.1***	**364**	***8.2***	***57.1***	***31.4***	***3.5***
Age (years)						
15-24	82.6	142	6.9	58.6	32.8	1.7
25-49	88.8	213	8.7	56.9	30.3	4.1
Education						
None	75.0	16	6.7	46.7	46.7	0.0
Primary	87.7	202	7.1	56.5	34.1	2.4
Secondary+	88.0	104	9.2	60.2	24.5	6.1
Region						
Central	85.1	227	9.4	62.4	23.8	4.5
Eastern	77.6	58	3.9	11.8	80.4	3.9
Mid western	94.9	79	7.6	75.8	16.7	0.0
2012/13 Survey						
Overall	***88.0***	***336***	***6.8***	***72.9***	***19.1***	***1.2***
Age (years)						
15-24	85.0	187	6.9	73.1	18.3	1.7
25-49	90.0	150	6.4	72.0	18.5	3.1
Education						
None	79.0	38	6.7	65.0	27.8	0.5
Primary	88.0	177	6.9	71.0	20.5	1.6
Secondary+	89.2	101	7.3	75.2	13.0	4.5
Region						
Central	86.9	224	9.4	73.2	13.4	4.0
Eastern	78.2	86	3.4	65.2	27.9	3.5
Mid western	96.2	29	6.1	75.9	17.1	0.9

4.6. Pregnant women in ANC who took IPTp

In the survey, all pregnant women were asked whether they took SP/Fansidar for IPTp for the current pregnancy and when they took it. The table below shows the number of times SP/Fansidar drugs have been swallowed during the current pregnancy by trimester. Notably, the proportion of pregnant women in the third trimester that had swallowed anti malarial drugs twice increased from 52% in 2010/11 to 56%, Table 13).

Table 13: Number of times anti-malarials have been swallowed by Trimester of pregnancy

2010/11 (n=534)				
	1 time (%)	**2 times (%)**	**3 or more times (%)**	**Don't know (%)**
First Trimester	52	19	11	19
Second Trimester	56	29	8	7
Third Trimester	33	52	12	3
2012/13 (n=389)				
First Trimester	90	5	5	0
Second Trimester	62	25	10	4
Third Trimester	18	56	23	2

4.6.2. Pregnant women in ANC who took IPTp under DOT

The MoH also recommends that ANC pregnant women who are given IPTp are advised to take them under direct observation of the health service provider. Therefore, the survey sought to establish practices of health workers in providing IPTp under DOTs.

Table 14 below shows findings of pregnant women who reportedly, took IPTp under DOT by provider guidance. Overall, 84% in 2010/11 and 96% in 2012/13 of the pregnant women in ANC were asked by the provider to take IPTp under DOT. Out of those asked, 96% in 2010/11 and 100% in 2012/13 took IPTp under DOT. In 2010/11 88% received explanation on how to take SP tablets and 70% received explanation on IPTp dosage from the provider while in 2012/13, the corresponding percentages were 71% and 61% respectively.

Table 14: ANC pregnant women who took IPTp under DOT and provider guidance by selected demographic characteristics

Background Characteristics of ANC woman	Percent of Pregnant women asked by Provider to take IPTp under DOT	Percent of those asked by provider who took IPTp under DOT	Received explanantion on how to take SP tablets	Received explanantion on IPTp dosage	Number
2010/11					
Overall	**84.0**	**96.4**	**87.9**	**69.7**	**534**
Age (years)					
15-24	85.1	98.4	87.7	64.8	213
25-49	84.1	94.5	88.0	75.2	286
Education					
None	83.3	95.8	83.3	75.0	28
Primary	85.8	96.3	87.1	67.0	285
Secondary+	83.1	96.6	89.4	77.9	145
Region					
Central	80.1	96.5	87.3	65.3	366
Eastern	88.4	100.0	76.0	84.3	89
Mid western	96.3	92.3	90.1	73.4	79
2012/13					
Overall	**95.6**	**100.0**	**71.4**	**61.4**	**436**
Age (years)					
15-24	96.5	100.0	83.3	60.6	230
25-49	94.6	100.0	62.5	62.2	204
Education					
None	90.5	100.0	66.7	67.3	42
Primary	95.4	100.0	68.8	60.7	239
Secondary+	96.8	100.0	82.4	60.7	125
Region					
Central	93.0	100.0	70.0	54.6	272
Eastern	100.0	100.0	66.7	72.4	84
Mid western	100.0	100.0	100.0	74.2	80

5. INTERMEDIATE RESULT 2: MALARIA DIAGNOSIS, TREATMENT AND REFERRAL SERVICES IMPROVED

5.1. Introduction

This section presents results on indicators about increasing the use of ACT among individuals, and particularly among children, suffering from malaria. It is targeted at reducing mortality due to malaria.

SMP seeks to improve malaria treatment by training health providers in the use of microscopy to more accurately diagnose cases of malaria; by supporting improvements in health facilities' triage, referral, and case management for severe malaria; by strengthening the capacity of district supervisors to support health workers and maintain these improvements; and by implementing community mobilization and BCC activities to promote awareness of febrile illness and appropriate treatment-seeking behaviours. These activities should have improved access to malaria treatment by increasing the effectiveness of the diagnostic, treatment, and referral services available in communities, by increasing community members' access to ACTs, and by improving community members' knowledge and attitudes regarding malaria diagnosis and treatment.

5.2. Exposure to Malaria Prevention and Treatment Messages

Respondents were asked if they were exposed to messages about Malaria prevention and treatment. As shown in Table 15, this proportion among exit clients remained unchanged between 2010/11 (85%) and 2012/13 (86%), P-value: 0.579, (Table 15).

Table 15: Exposure to messages on Malaria Prevention and Treatment by selected demographic characteristics

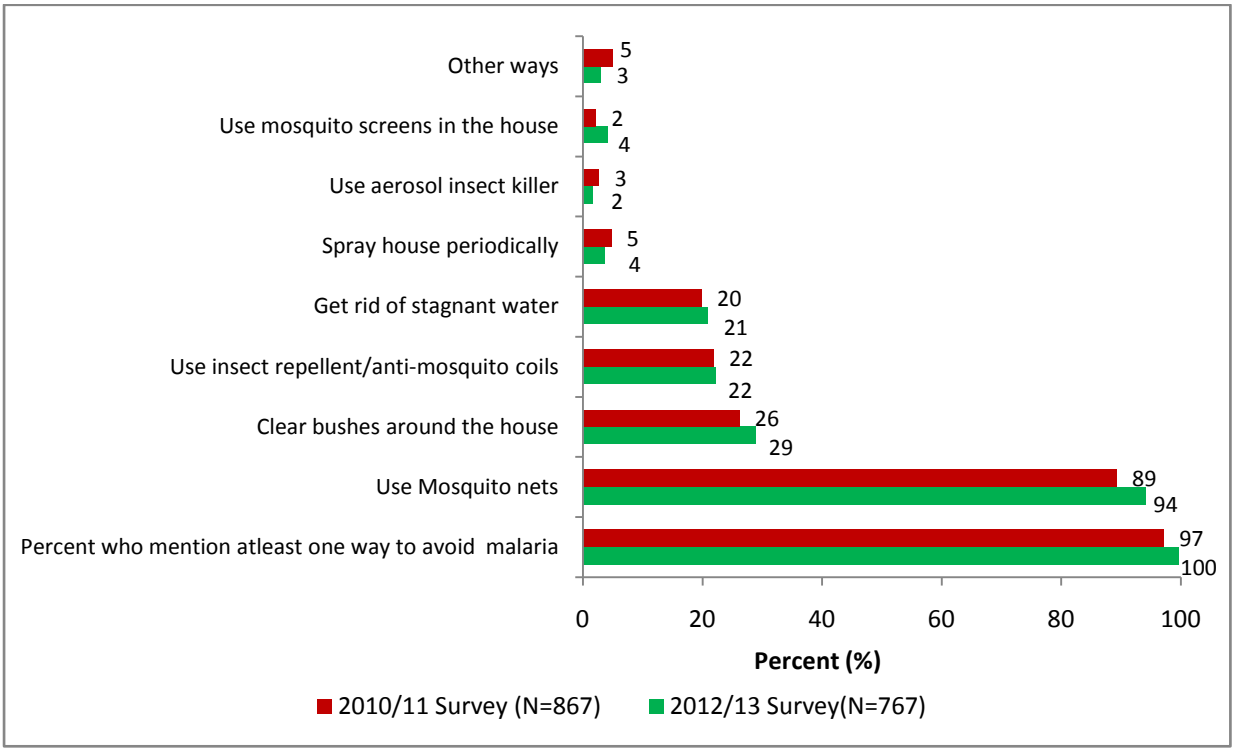
Background Characteristic	**2010/11**		**2012/13**		P-value
Background Characteristics	Percent	Number	Percent	Number	
Overall	***85.3***	***728***	***86.3***	***774***	***0.579***
Agegroup (years)					
15-24	81.0	270	83.6	353	0.398
25-49	89.1	439	88.8	400	0.890
Education					
None	64.3	42	76.2	101	0.146
Primary	84.4	411	85.2	412	0.749
Secondary+	92.9	170	94.6	204	0.496
Region					
Central	83.4	489	85.2	508	0.435
Eastern	88.5	113	92.9	156	0.212
Mid western	89.7	126	82.7	110	0.117

5.3. Knowledge of ways to avoid Malaria

The best ways to avoid getting malaria is by taking precautionary measures to eliminate mosquitoes from areas around the home. In order to assess knowledge of clients on the ways to protect themselves or their family members from catching malaria, each client was asked for their opinion and all responses were recorded. The responses given are summarized in Figure 6 below.

Overall knowledge of at least one way to avoid malaria remained universal between 2010/11 (97%) and 2012/13 (100%). Sleeping under a mosquito net followed by clearing bushes around the house received the most responses in both surveys, Figure 6.

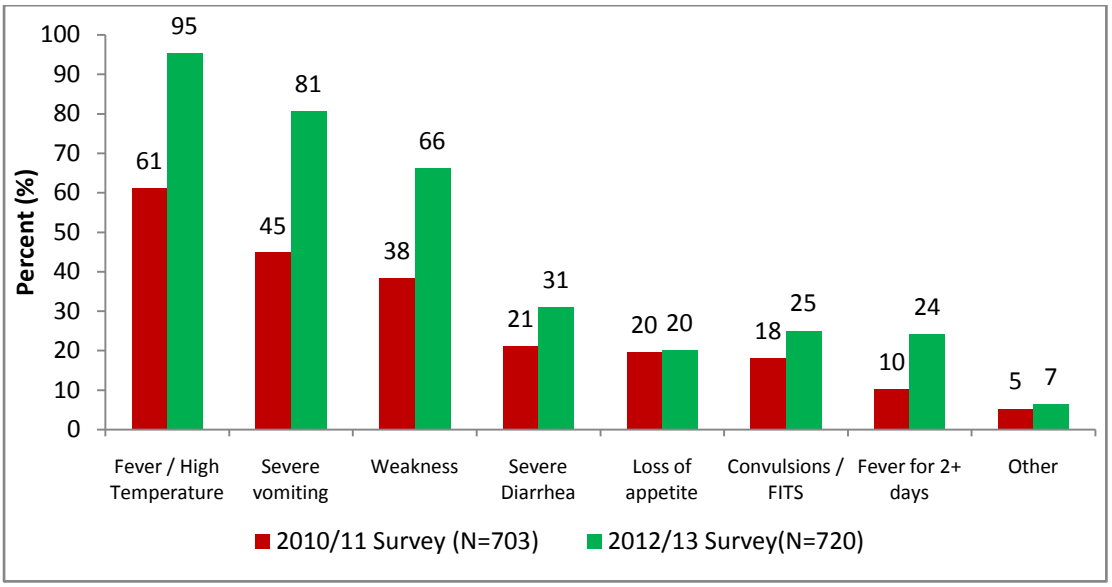
Figure 6: Knowledge of ways to avoid malaria



5.4. Knowledge of Signs of Malaria

The ability of individuals to identify a malaria case is essential in ensuring prompt treatment of malaria. Clients at health facilities were asked to cite the signs that show that a person may have malaria and all responses were recorded. As shown in the Figure 7 below, overall knowledge of signs of malaria has improved between 2010/11 and 2012/13. For instance those who cited fever or high temperature improved from 61% to 95% while those who cited severe vomiting improved from 45% to 81%.

Figure 7: Knowledge of Signs of Malaria



5.5. Prompt malaria treatment for children under 5 years

5.5.1. Knowledge of Prompt malaria treatment for children under 5 years

Prompt seeking (within 24 hours) of treatment prevents adverse outcomes of malaria. Based on its importance, this was adopted as an SMP indicator. Overall, this indicator improved, significantly, from 59% in 2010/11 to 81% in 2012/13, P-value: <0.001, Table 16. It is worth noting that care takers with no education and those from Eastern Uganda did not register statistically significant improvements hence the need for intensified intervention in these categories of clients.

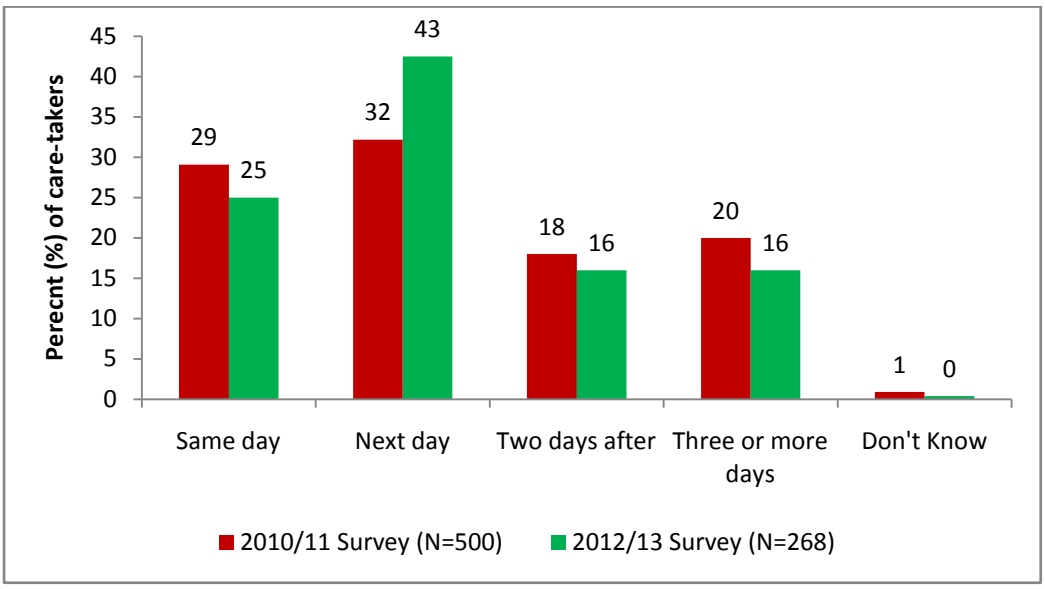
Table 16: Percentage of caretakers of children under five knowledgeable about the need to seek malaria treatment within 24hrs (same day) by selected demographic characteristics

Background Characteristics of care-takers	2010/11		2012/13		P-value
	Percent	Number	Percent	Number	
Overall	***59.2***	***235***	***81.4***	***264***	***<0.001***
Age (years)					
15-24	63.4	72	81.0	100	0.010
25-49	56.9	163	82.6	155	<0.001
Education					
None	69.2	13	71.4	42	0.879
Primary	61.7	128	83.4	157	<0.001
Secondary+	50.0	52	85.5	55	<0.001
Region					
Central	57.7	170	81.3	160	<0.001
Eastern	61.5	26	76.9	52	0.154
Mid western	64.1	39	86.0	57	0.012

5.5.2 Prompt malaria treatment for children under 5 years

The SMP not only targets improving knowledge but also the actual prompt treatment of malaria in children under 5 within 24 hours (same day) upon onset of fever. During the HFA survey, care takers of children under 5 years who were suffering from malaria were asked how soon, after the onset of fever, they took the child for treatment. As shown in the graph below, the proportion that sought treatment of the child on the same day after the onset of fever has declined from 29% to 25% while those that sought treatment on the next day increased from 32% to 43%.

Figure 8: Prompt treatment for malaria in children under 5 years



5.6. Knowledge of treatment for malaria among Care-Takers for children under 5 years

According to MoH guidelines, the current first-line treatment for malaria is artemisinin-based combination therapy. During the survey, care takers were asked to mention drugs used for treatment of children under five suffering from malaria.

Overall, the proportion of clients knowledgeable that ACTs are used for treatment of Malaria declined, significantly, from 82% to 74%, P-value: 0.022. In 2012/13, Clients with no education (70%) were less likely to have this knowledge compared to their counterparts having primary (74%) and secondary or more education (73%), (Table 17).

Table 17: Knowledge of ACTs for treatment of children by selected demographic characteristics

Background Characteristics of care-takers	2010/11		2012/13		P-value
	Percent (%)	Number	Percent (%)	Number	
Overall	***82.1***	***235***	***73.6***	***272***	***0.022***
Age (years)					
15-24	77.5	72	72.3	101	0.439
25-49	83.8	163	74.5	157	0.040
Education					
None	46.2	13	69.8	43	0.120
Primary	82.8	128	74.1	158	0.077
Secondary+	92.3	52	73.2	56	0.009
Region					
Central	81.8	170	70.4	162	0.015
Eastern	84.6	26	73.6	53	0.273
Mid western	82.1	39	78.9	57	0.699

5.7. Case management of sick children under 5 years before treatment

Malaria treatment is based on taking good history of the patient, doing a thorough physical and clinical examination and guiding the patients on how to recover well. Survey results show that 90% in 2010/11 and 95% in 2012/13 of the providers asked for the child's age before treatment. On the contrary, less than 32% in 2010/11 and 44% in 2012/13 described signs which should prompt care takers to take their children to a health facility. Also, only 9% in 2010/11 and 7% in 2012/13 of the sick children presented to a health facility were referred to another facility, (Table 18).

Table 18: Case management of sick children before treatment by selected demographic characteristics

Background Characteristics of respondent	2010/11							2012/13						
	Advised on how to feed the child	Took the child's temperature	Weighed the child	Asked for child's age	Described signs to bring child back to facility	Referred child to anther facility	Number referred	Advised on how to feed the child	Took the child's temperature	Weighed the child	Asked for child's age	Described signs to bring child back to facility	Referred child to anther facility	Number referred
Overall	***38.8***	***55.9***	***40.9***	***90.3***	***32.2***	***8.7***	***500***	***47.6***	***53.4***	***41.9***	***95.4***	***44.3***	***7.0***	***371***
Gender														
Male	35.3	59.6	52.9	98.1	27.5	14.3	**34**	42.2	72.1	47.7	93.2	50	2.3	**44**
Female	39.2	54.7	38.9	89.4	33.1	8.5	**466**	48.3	50.9	41.1	95.7	43.6	7.7	**327**
Age (years)														
15-19	37.0	42.9	40.0	88.9	39.3	11.1	**47**	45.5	59.1	50	95.5	31.8	4.5	**22**
20-24	36.4	53.9	35.3	88.7	28.6	10.9	**146**	52.6	53	44.3	96.5	50	7.1	**115**
25-29	45.3	64.0	40.1	90.6	38.1	5.1	**159**	45.5	54	38.4	93	37.9	5	**86**
30-34	36.6	54.8	45.6	88.4	24.3	7.1	**102**	46.2	45.5	40.5	97.5	45.5	6.8	**79**
35-39	44.1	47.1	45.5	94.1	37.1	11.4	**34**	48.4	65.5	45.2	93.5	58.1	6.7	**31**
40-44	30.8	69.2	61.5	100.0	38.5	16.7	**7**	23.1	53.8	33.3	91.7	30.8	15.4	**12**
45-49	22.2	22.2	37.5	88.9	25.0	33.3	**5**	50	60	33.3	100	40	22.2	**10**
Education														
None	37.0	63.0	40.0	77.8	25.9	0.0	**32**	53.7	62.3	45.1	98.1	49.1	3.9	**53**
Primary	45.3	55.9	43.8	90.5	37.7	9.2	**321**	49.1	49.5	36.5	95.7	36.7	8	**210**
Secondary+	34.82	55.2	38.4	92.9	30.1	7.8	**147**	40.7	52.4	45.1	92.7	59.3	5	**82**
Region														
Central	40.9	55.5	39.3	89.9	32.3	7.8	**357**	47.7	55.8	39.9	96.6	48.9	4.8	**234**
Eastern	49.1	47.3	50.9	93.1	50.0	12.7	**71**	36.8	51.5	54.4	94	38.2	17.6	**67**
Mid western	25.0	64.4	41.4	90.1	18.6	10.6	**72**	58	47.1	36.2	92.9	34.3	3.5	**70**

5.8. Prevalence of diagnostic testing for malaria before treatment

Respondents who had come to health facility were asked if the patient they had brought for treatment had blood taken from his/her finger or heel for testing; which is a proxy for diagnostic testing for malaria. The proportion of sick children under five that, reportedly, received diagnostic testing for malaria increased from 83% in 2010/11 to 87% in 2012/13, (Table 19).

Table 19: Diagnostic testing for malaria before treatment among children under five by selected demographic characteristics

Background Characteristic of respondent	2010/11 Percent of all Visits	2010/11 Received diagnostic test for Malaria	2010/11 Number	2012/13 Percent of all Visits	2012/13 Received diagnostic test for Malaria	2012/13 Number
Overall	***53.8***	***82.5***	***672***	***51.8***	***87.3***	***472***
Gender						
Male	53.2	87.0	42	51.2	83.3	30
Female	53.7	82.2	563	51.7	87.9	441
Agegroup (years)						
15-19	72.4	68.8	59	70.4	100	73
20-24	39.8	80.8	181	37.8	86.9	120
25-29	43.3	86.0	207	41.3	86.5	93
30-34	46.8	78.1	136	44.8	84.4	69
35-39	36.6	80.8	45	34.6	80.8	19
40-44	28.6	88.9	14	26.6	91.7	5
45-49	71.4	100.0	7	69.4	100	8
Education						
None	41.7	90.5	39	39.7	91.1	44
Primary	47.3	82.2	375	45.3	85.9	226
Secondary+	48.0	83.3	156	46.0	87	109
Region						
Central	43.6	78.6	446	41.6	86.1	245
Eastern	44.3	85.7	100	42.3	83.1	71
Mid western	57.6	92.0	126	55.6	95.2	87

In addition, diagnostic testing was assessed among pregnant women visiting health facilities for ANC. Overall, the proportion of ANC women that, reportedly, received diagnostic testing for malaria increased from 77% in 2010/11 to 83% in 2012/13, (Table 20).

Table 20:Diagnostic testing for malaria before treatment among ANC women by selected demographic characteristics

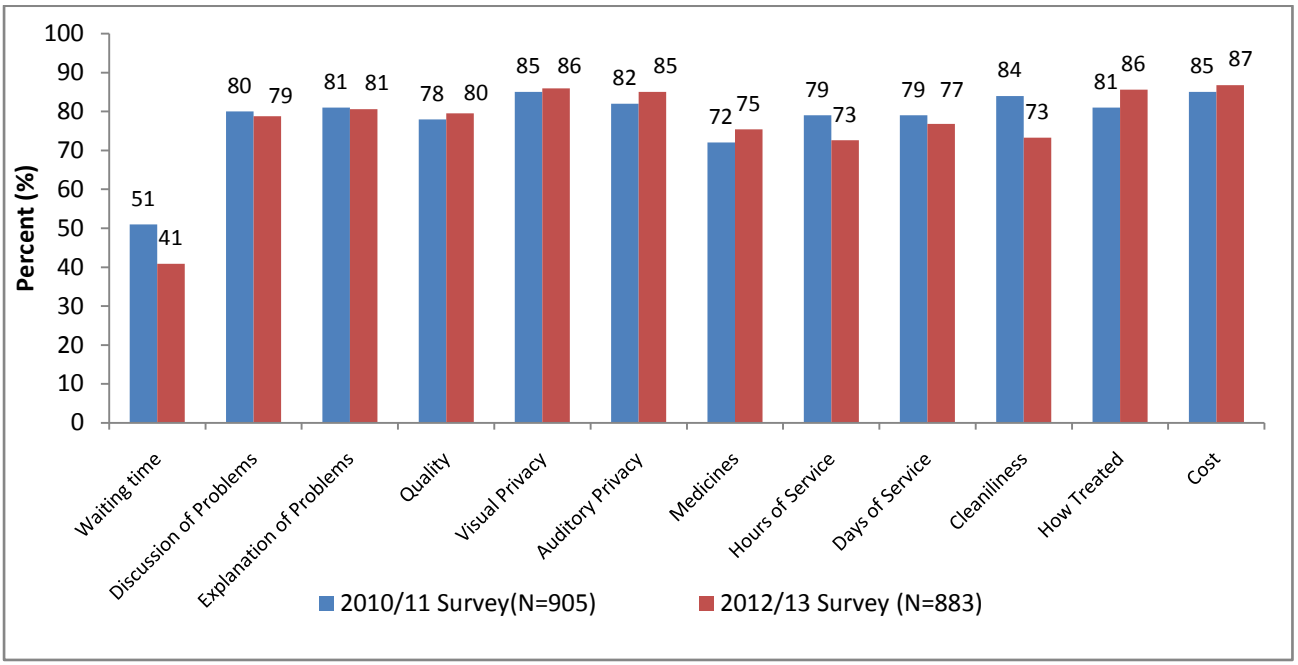
Background Characteristic of respondent	2010/11			2012/13		
	Percent of all Visits	Received diagnostic test for Malaria	Number	Percent of all Visits	Received diagnostic test for Malaria	Number
Overall	***39.9***	***76.9***	***672***	***48.2***	***83.3***	***440***
Gender						
Male	11.9	91.0	42	48.8	100.0	28
Female	41.6	78.7	563	48.3	83.1	413
Agegroup (years)						
15-19	62.7	81.8	59	29.6	91.7	31
20-24	36.5	72.5	181	62.2	80.6	199
25-29	38.2	84.8	207	58.7	88.9	132
30-34	39.0	76.5	136	55.2	78.6	85
35-39	37.8	69.2	45	65.4	100.0	36
40-44	28.6	75.0	14	73.4		15
45-49	14.3	67.0	7	30.6		3
Education						
None	33.3	54.6	39	60.3	66.7	67
Primary	41.6	77.1	375	54.7	85.7	273
Secondary+	43.6	81.4	156	54.0	83.9	128
Region						
Central	34.3	75.2	446	58.4	80.6	343
Eastern	47.0	88.6	100	57.7	100.0	96
Mid western	54.0	60.0	126	44.4	100.0	70

5.9. Clients' Satisfaction Levels

The level of health provider and system responsiveness provides an opportunity to better understand the determinants of patient's satisfaction with the health care system which may influence health seeking behaviour and confidence in the health system.

In the survey, all clients were asked questions to measure their level of satisfaction with the services received on their visit to the health facility. In both surveys, patients were least satisfied about the waiting time at the facility as only 51% in 2010/11 and 41% in 2012/13 said that they had no problem with time they waited. About 80% of the respondents in both surveys were satisfied with the discussion of problems and 81% felt that they received ample explanations to their problems. Satisfaction levels on other key questions, by survey, can be seen in Figure 9 below.

Figure 9: Clients' levels of satisfaction with received health services



5.10. Associations / Correlations of exposure to Malaria treatment messages on key outcomes

To determine the association between exposure to malaria treatment messages on key outcomes, Odds Ratios (O.Rs) were computed. ORs compare the odds (chance) of an outcome in the group exposed to the intervention to odds of an outcome in the non exposed group. Importantly, the comparison groups for all outcomes are people who were not exposed to malaria treatment messages. In Table 21, the group exposed to malaria treatment messages should be compared to an OR=1.00; which represents the baseline chance of an outcome in participants not exposed.

In both surveys, the group of pregnant women exposed to malaria treatment messages had a statistically significant fourfold chance [2010/11: OR=4.08 (1.38, 12.09), 2012/13: OR=4.58 (1.38, 12.59)] to have knowledge of protecting self from malaria compared their counterparts that were not exposed to these messages. Also, exposed pregnant women were 52% [OR=1.52 (0.73, 3.15)] in 2010/11 and 93% in 2012/13 [OR=1.93 (1.22, 3.09)] more likely to own any mosquito net compared to their unexposed counterparts. In addition, exposed women were 63% [OR=1.63 (0.84, 3.15)] more likely to have slept under any mosquito net in the night preceding the survey compared to unexposed counterparts in 2010/11. This has not changed a lot in 2012/13 where exposed women were 86% [OR=1.86 (0.88, 3.91)] more likely to have slept under any mosquito net in the night preceding the survey compared to unexposed counterparts.

With regard to care takers of children under 5 years, this group of care takers who were exposed to malaria treatment messages were 2.4 times [OR=2.43 (1.02, 5.75)] in 2010/11 and twice [OR=2.00 (1.02, 3.92)] in 2012/13 more likely have slept under any net in the night

preceding the survey compared to the children of their counterparts that were not exposed to these messages. For other associations, refer to Table 21.

Table 21: Associations / Correlations of exposure to Malaria treatment messages on key outcomes

	2010/11				2012/13			
	Un-adjusted OR		Adjusted OR		Un-adjusted OR		Adjusted OR	
	(95%CI)	P-value	(95%CI)	P-value	(95%CI)	P-value	(95%CI)	P-value
1. Knowledge to protect self from malaria in pregnant women								
Un Exposed to Messages	REF (OR=1.00)							
Exposed to Messages	4.08 (1.38, 12.09)	0.01*	3.55(1.00, 12.58)	0.05*	4.58 (1.38, 12.59)	0.02*	3.59(1.02, 12.60)	0.05*
2. Children under five who slept under any net in the night preceding the survey								
Un Exposed to Messages	REF (OR=1.00)							
Exposed to Messages	2.43 (1.02, 5.75)	0.04*	1.96(0.78, 4.94)	0.15	2.00 (1.02, 3.92)	0.04*	2.01 (1.02, 3.99)	0.04*
3. Women slept under any net in the night preceding the survey								
Un Exposed to Messages	REF (OR=1.00)							
Exposed to Messages	1.63 (0.84, 3.15)	0.15	1.18(0.59, 2.38)	0.64	1.86 (0.88, 3.91)	0.10	1.76 (0.83, 3.75)	0.14
4. ANC Pregnant Women who own any net								
Un Exposed to Messages	REF (OR=1.00)							
Exposed to Messages	1.52 (0.73, 3.15)	0.26	1.16(0.51, 2.67)	0.72	1.93 (1.22, 3.09)	0.01*	1.94 (1.21, 3.09)	0.01*
5. Caretakers of children under five who mentioned ACTs as the treatment for malaria								
Un Exposed to Messages	REF (OR=1.00)				REF (OR=1.00)			
Exposed to Messages	2.82(1.17, 6.78)	0.02*	2.36(0.79, 7.02)	0.12	1.21 (0.58, 2.53)	0.61	1.21 (0.58, 2.55)	0.61

Notes: * means results are statistically significant at a level of 5%

6. HEALTH FACILITIES RELATED MEASURES

6.1. Introduction

The Health Facility Assessment (HFA) survey assessed whether the facilities had the commodities, equipment, staff and systems needed to provide quality malaria prevention, testing and treatment services by posing close ended questions to the facility manager (or their designee) and the most senior laboratory health worker /or their designees. Also, observations were made at each health facility by a research assistant to confirm responses provided by the facility manager.

In this chapter, we present results of facility audit and observational tools on commodities, equipment, staff and systems at health facilities assessed. For some findings, comparisons have been provided between the 2010/11 and the 2012/13 surveys.

6.2. Staffing Level

The HFA survey sought the number of staff providing malaria related services in each health facility visited by cadre. The mean staff distribution by level of health facility for 2010/11 and 2012/13 is shown in table 22 below.The average number of medical doctors providing malaria related services in hospitals has improved from 4.2 doctors in 2010/11 to 4.7 doctors in 2012/13. On the contrary, no notable improvements were seen in the average number of medical doctors providing malaria related services in other health facility levels.

Table 22:The Mean number of staff by cadre by heath facility in 2012/13

	2010/11 Type of health facility				**2012/13** Type of health facility			
Staff by Cadre	**Hospital**	**HC IV**	**HC III**	**HC II**	**Hospital**	**HC IV**	**HC III**	**HC II**
Med. Officer	4.2	1.5	0.6	0.4	4.7	1.6	0.2	0.2
Clin. Officer	5.3	2.6	1.3	1.0	5.2	2.8	1.8	0.5
Comp. Nurse	5.9	1.7	1.3	1.0	8.7	2.0	1.4	1.2
En. Nurse	15.8	2.9	1.5	1.2	12.2	3.2	1.7	1.1
En. Midwife	10.2	2.3	1.4	1.0	10.2	2.3	1.4	1.0
Reg. Nurse	10.3	2.0	1.1	0.8	7.8	3.4	1.7	1.0
Reg. Midwife	6.1	1.6	0.9	0.8	5.4	1.8	0.8	0.6
Nurse Aide	13.1	3.9	2.2	1.5	12.0	3.1	2.1	1.6
Lab Technologist	2.0	0.8	1.0	0.9	1.2	1.1	0.5	0.0
Lab Technician	2.0	1.1	0.7	0.6	2.5	1.3	0.8	0.1
Lab Ass	3.2	1.3	1.2	0.9	3.8	1.7	1.1	2.1
Microscopist	2.4	1.1	0.9	0.7	1.1	0.7	0.4	0.1
Health Educator	2.2	1.0	0.9	0.7	1.3	1.0	0.9	1.3

6.3. Health Facility Infrastructure/Systems

6.3.1 Source of drinking water at the health facility

Access to safe drinking water is important to avoid the spread of water borne diseases especially in health facilities that encourage taking drugs under DOT. The 2012/13 HFA survey also sought information on access of a facility to safe drinking water by asking the facility manager or their designee what the most commonly used source of water for hand washing was at the time of the interview.

In the Table 23 below, the Malaria Indicator Survey[11] definition for safe water was adopted whereby sources that provide suitable water for drinking are categorized as 'improved sources' and these included water piped into the facility or its grounds, piped tap or stand water, tubewell of borehole, protected dug well, protected spring and rain water. Non-improved water sources referred to those sources whose water could be unsafe for drinking and these included unprotected wells, cart with tank, tanker truck, surface water or any other cited source.

As shown in table 23 below, all hospitals and nearly all HCIVs visited had improved sources of water.

Table 23: Source of drinking water by type heath facility

	2010/11				2012/13			
Source of drinking water	**Hospital**	**HC IV**	**HC III**	**HC II**	**Hospital**	**HC IV**	**HC III**	**HC II**
Improved Source								
Piped into facility	66.7	19.4	22.9	8.3	62.0	19.6	24.0	9.3
Piped into facility grounds	12.5	22.6	7.1	3.1	14.0	22.5	7.2	3.1
Piped tap/stand pipe	4.2	6.5	5.7	4.2	8.0	6.6	5.8	5.2
Tubewell / borehole	16.7	19.4	25.7	22.9	16.0	19.4	25.9	24.0
Protected dug well	0.0	3.2	2.9	3.1	0.0	3.2	2.9	3.1
Protected spring	0.0	0.0	1.4	3.1	0.0	0.0	1.4	3.5
Rain water	0.0	19.4	21.4	31.3	0.0	19.4	21.4	31.3
Total Improved Source	***100.0***	***96.8***	***85.7***	***77.1***	***100.0***	***97.0***	***88.6***	***79.5***
Non-Improved Source								
Unprotected dug well	0.0	0.0	1.4	3.1	0.0	0.0	1.0	3.1
Cart with tank/drum	0.0	3.2	7.1	8.3	0.0	3.0	6.2	7.3
Tanker truck	0.0	0.0	2.9	3.1	0.0	0.0	2.1	2.1
Surface water	0.0	0.0	1.4	5.2	0.0	0.0	1.0	5.2
Other	0.0	0.0	1.4	3.1	0.0	0.0	1.1	3.1
Total Non-Improved Source	***0.0***	***3.2***	***14.3***	***22.9***	***0.0***	***3.0***	***11.4***	***20.5***
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	***24***	***32***	***72***	***99***	***25***	***32***	***76***	***102***

[11] Malaria Indicator Survey (MIS), UBOS 2009

6.4. Administrative Operations

Health facilities without proper administrational practices cannot succeed in saving lives of the people they serve from malaria. In 2012/13, about 93 percent of hospitals were reported to open 7 days a week, followed by 85 percent of HC IVs, 70 percent of HC IIIs and 46 percent of HC IIs. Nearly all hospitals and HC IVs provide routine admissions and have a trained health provider who lives on the facility premises. Also, hospitals are more likely to hold routine meetings (97%), conduct meetings monthly or more often (84%) and have an official record of management (88%) compared to the other types of health facilities, (Table 24).

Table 24: Percent of health facilities reporting key systems

	2010/11				2012/13			
	Type of health facility				Type of health facility			
Services	**Hospital**	**HC IV**	**HC III**	**HC II**	**Hospital**	**HC IV**	**HC III**	**HC II**
Operational								
Open 7 days in a week	91.7	75.0	69.4	41.8	93.1	85.0	70.4	45.8
Have a trained health provider who lives on premises	100.0	96.7	90.1	72.7	100.0	98.7	93.1	75.7
Provides routine admissions	100.0	100.0	83.3	24.2	100.0	100.0	85.3	26.2
Administrative								
Routine meetings	95.8	96.9	97.2	84.7	96.8	97.9	98.2	86.7
Conducts meetings monthly or more often	82.6	50.0	67.1	56.1	83.6	51.0	69.1	57.1
Have an official record of management	87.0	77.4	72.5	57.8	88.0	78.4	73.5	59.8
Checks and balances								
Carries out routine quality assurance	87.0	73.3	73.9	51.0	96.0	90.6	82.9	56.9
Average number of staff trained in clinical audit	1.4	1.3	1.3	1.5	9.5	3.2	0.6	0.5
Ever conducted a clinical audit	58.3	41.9	15.0	11.4	78.3	67.7	36.5	24.5
Number	***24***	***32***	***72***	***99***	***25***	***32***	***76***	***102***

6.5. Malaria Case Management

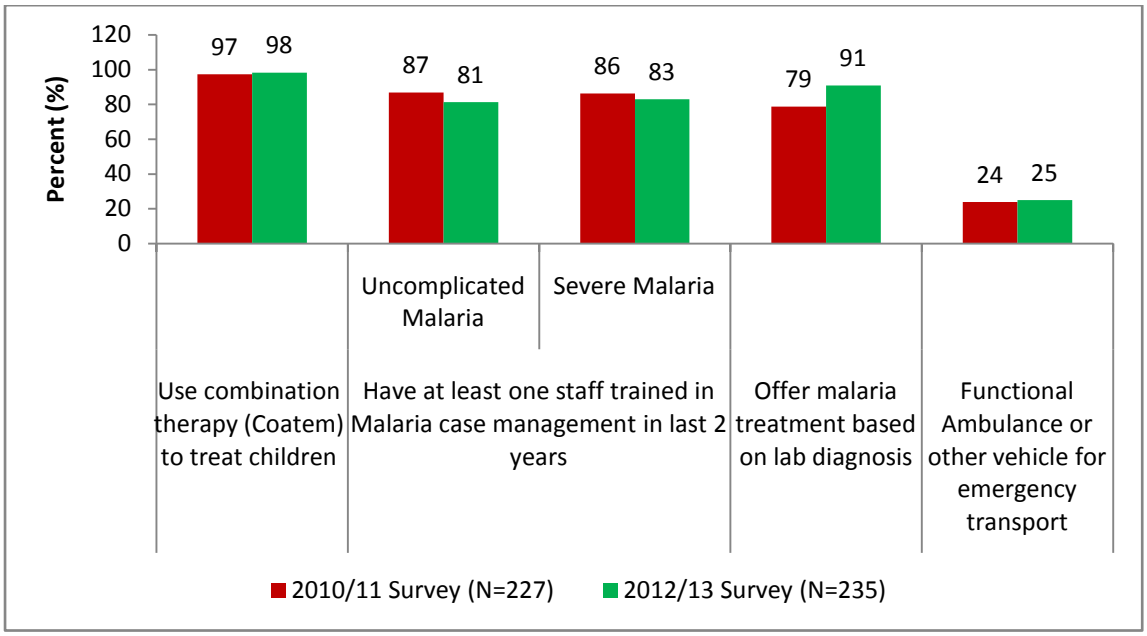
The MOH Uganda recommends Coartem or a combination of Artesunate plus Amodiaquine as first line treatment for uncomplicated malaria. At the time of the 2012/13 HFA survey, almost all (98%) health facilities were using combination therapy (Coartem) to treat malaria in children. Also, majority of health facilities had at least one staff trained in management of uncomplicated (81%) and severe (83%) malaria in the 2 years preceding the survey. Also, 91% of facilities offer malaria treatment based on lab diagnosis, (Table 25).

Table 25: Percent of health facilities that offer recommended case management of Malaria cases

Background Characteristics	Use combination therapy (Coatem) to treat children	Have at least one staff trained in Malaria case management in last 2 years		Offer malaria treatment based on lab diagnosis	Functional Ambulance or other vehicle for emergency transport	Number
		Uncomplicated Malaria	Severe Malaria			
Overall	***98.3***	***81.3***	***83.0***	***91.0***	***25.1***	***235***
Type of facility						
Hospital	96.0	84.0	88.0	100.0	88.0	25
HC -IV	100.0	90.6	93.8	93.8	62.5	32
HC-III	98.7	85.5	90.8	90.8	15.8	76
HC-II	98.0	74.5	72.5	88.1	4.9	102
Location of facility						
Rural	98.8	82.6	82.6	88.0	18.6	167
Urban	97.1	77.9	83.8	98.5	41.2	68
Region						
Central	99.4	79.0	80.9	92.5	22.8	162
Eastern	100.0	86.1	88.9	86.1	38.9	36
Mid western	91.9	86.5	86.5	89.2	21.6	37

In comparison to the 2010/11 survey (figure 10), the proportion of health facilities using combination therapy (Coartem) to treat malaria in children remained unchanged between 2010/11 (97%) and 2012/13 (98%). Also, the proportion of health facilities offering malaria treatment based on lab diagnosis inmproved from 79% in 2010/11 to 91% 2012/13. On the contrary, the proportion of health facilities with atleast one staff trained in uncomplicated malaria case management declined from 87% in 2010/11 to 81% 2012/13. Also, the proportion of health facilities with atleast one staff trained in severe malaria case management declined from 86% in 2010/11 to 83% 2012/13.

Figure 10: Percent of health facilities that offer recommended case management of Malaria cases



6.6. IPT/ANC Services

6.6.1. Provision of IPT/ANC Services

Malaria can cause serious adverse events in pregnant women to both the mother and the unborn baby. These may include anaemia, poor birth outcomes such as low birth weight in babies, abortion, still births or even growth retardation in babies. To prevent the effects of malaria, pregnant women ought to visit the antenatal clinic for two doses of IPT plus supplementary medication for iron and de-worming.

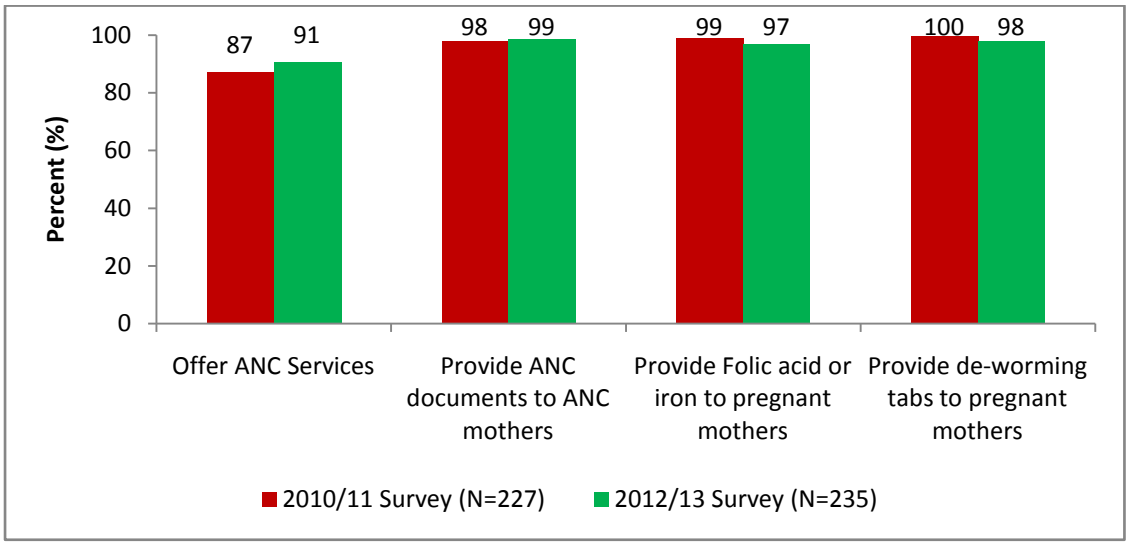
As shown in Table 26 below, of all facilities visited in the 2012/13 HFA survey, 91% offered ANC services. All hospitals, HC IVs and nearly all HC IIIs were found to offer ANC services whereas only 81 percent of HC IIs offered these services. Urban health facilities (93%) were more likely to offer these facilities compared to rural facilities (90%). Importantly, 99% of health facilities that offered ANC services provide ANC documentation to ANC mothers, folic acid or iron to avoid aneamia (97%) and de-worming tablets (98%) to pregnant mothers.

Table 26: Percent of health facilities that offer ANC services and supplementary medication

	Percent of facilities that:				
Background Characteristics	Offer ANC Services	Provide ANC documents to ANC mothers	Provide Folic acid or iron to pregnant mothers	Provide de-worming tabs to pregnant mothers	Number
Overall	***90.6***	***98.6***	***96.7***	***98.1***	***235***
Type of facility					
Hospital	100.0	100.0	100.0	96.0	25
HC -IV	100.0	100.0	93.5	93.5	32
HC-III	96.1	98.6	94.5	100.0	76
HC-II	81.4	97.6	98.8	98.8	102
Location of facility					
Rural	89.8	98	97.3	98.0	167
Urban	92.6	100.0	95.2	98.4	68
Region					
Central	92.0	98.7	96.6	98.0	162
Eastern	86.1	96.8	96.8	96.8	36
Mid western	89.2	100.0	97.0	100.0	37

In comparison to the 2010/11 survey, the proportion of health facilities that offer ANC services increased from (87%) in 2010/11 to 91% in 2012/13. Also, the proportion of health facilities that provide ANC documents to ANC mothers increased from (98%) in 2010/11 to 99% in 2012/13, Figure 11.

Figure 11: Percent of health facilities that offer ANC services and supplementary medication

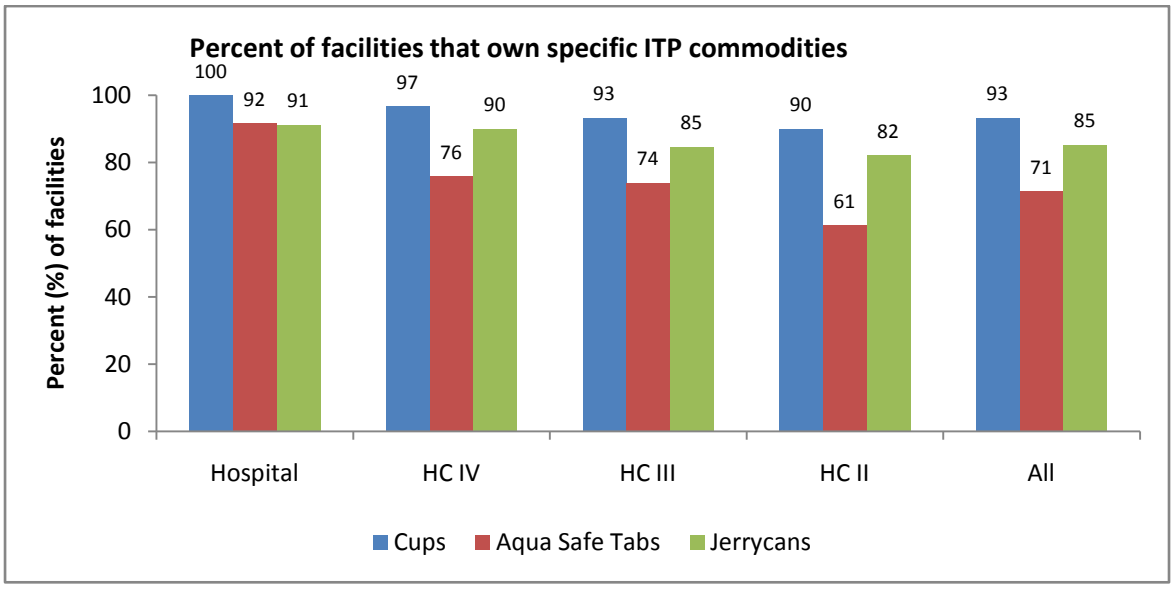


6.6.2. Commodities for IPTp use

The availability of adequate commodities used in DOT is essential for increasing the uptake of IPTp. As shown in figure below, in 2012/13 100% of facilities owned cups for DOT, 71% had aqua

safe tablets for water purification and 85% had jerrycans for water storage. Generally, majority of hospitals owned the three required commodities for water purification and storage. However, some HC IVs, HC IIIs and HC IIs did not have aqua safe tablets for water purification (HC IVs 76% had, HCIIIs 74% had and HC IIs 61% had), Figure 12.

Figure 12: Percent of facilities that own IPTp commodities



6.6.3 Administration of IPT under DOT and Training of Staff

According to the MOH recommendations, ANC pregnant women should take their first and second doses of IPT under direct observation by the service provider. The health providers should explain to ANC clients the purpose of taking IPT during pregnancy, the recommended dosage and the possible side effects.

Approximately 9 in every 10 (90 percent) of facilities offer IPTp under direct observation (Table 27). IPTp under DOT is more common in hospitals (100%), followed by HC IVs (97%), 89% of HC IIs and lastly HC IIIs (85%). All facilities in the Eastern (100%) and Mid western (100%) were equally offering IPTp under DOT while 85% of facilities in the Central offer IPTp under DOT.

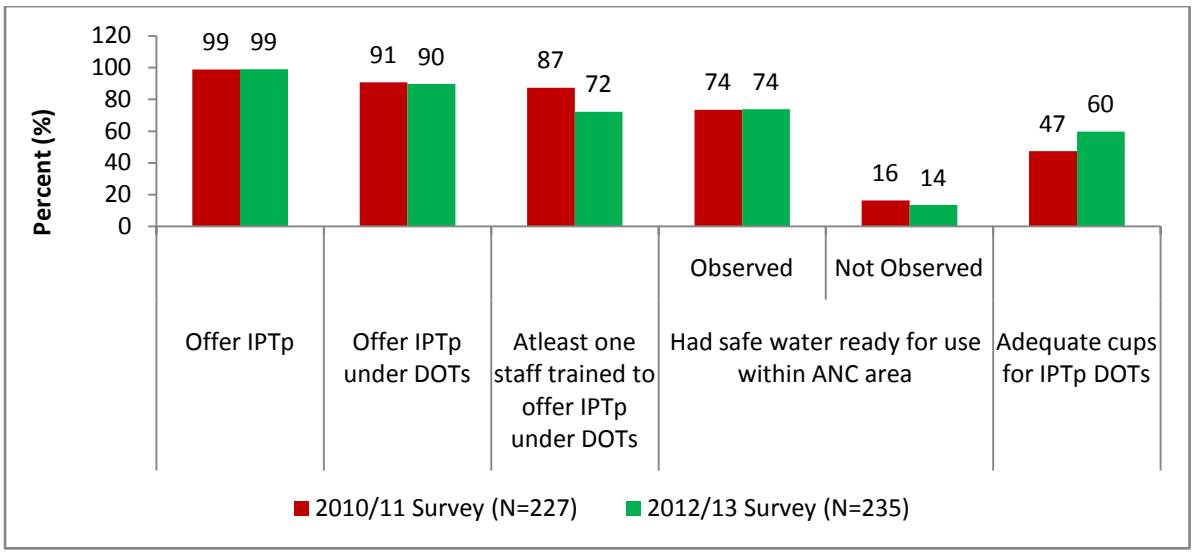
In order to ensure proper administration of IPTp under DOT, the MOH recommends regular training of staff in offering IPTp under DOT. As seen in the table, 72% of facilities had at least one staff trained for this, (Table 27).

Table 27: Percent of health facilities that offer IPTp services and availability of IPTp commodities by health facility characteristics

	Percent of facilities that:						
Background Characteristics	Offer IPTp	Offer IPTp under DOTs	Atleast one staff trained to offer IPTp under DOTs	Had safe water ready for use within ANC area		Adequate cups for IPTp DOTs	Number
				Observed	Not Observed		
Overall	***99.0***	***89.7***	***72.3***	***73.9***	***13.5***	***59.7***	***235***
Type of facility							
Hospital	100.0	100.0	88.0	95.8	4.2	68.0	25
HC -IV	96.9	96.7	87.5	90.3	6.5	51.6	32
HC-III	100.0	84.5	73.7	65.3	15.3	60.3	76
HC-II	98.8	88.6	62.7	68.8	17.5	59.8	102
Location of facility							
Rural	99.3	90.1	70.7	77.4	13.7	63.3	167
Urban	98.4	88.9	76.5	65.6	13.1	50.8	68
Region							
Central	99.3	85.1	74.7	66.7	16	55.1	162
Eastern	96.8	100.0	72.2	96.7	3.3	61.3	36
Mid western	100.0	100.0	62.2	84.8	12.1	78.8	37

Comparing to the 2010/11 survey, there were only slight changes except in the proportion of facilities with adequate cups for IPTp DOT that increased from 47% 2010/11 to 60% in 2012/13, Figure 13.

Figure 13: Percent of health facilities that offer IPTp services and availability of IPTp commodities



6.7. Availability of medications

During the 2012/13 HFA survey, the facility manager or their designee was asked whether specific medications were available at the health facility on the day of the interview. Furthermore, if drugs were reported available, the interviewer ascertained availability of drugs by observation.

As seen in table 28 below, 97% of all facilities had Artemether / Lumefantrin and SP/Fansidar, 87% had IV Quinine, 91% had Oral Quinine and 73% had Rectal Artesunate. Notably, all hospitals had Artemether / Lumefantrin and SP/Fansidar, while in other health facility levels, the coverage was also nearly universal, (Table 28).

Table 28: Percent of facilities reporting availability of drugs at facilities

Background Characteristics	**Availability (by observation) of drugs at facility:**							
	Artemether /Lumefantrin	SP	IV Quinine	Oral Quinine	Rectal Artesunate	5% Dextrose	Artemeter (Injectable)	Number
Overall	***96.5***	***96.5***	**86.7**	**90.5**	**73.8**	**73.1**	**89.4**	***235***
Type of facility								
Hospital	100.0	100.0	100.0	95.8	77.3	87.5	100.0	25
HC -IV	93.1	96.8	89.3	96.3	62.5	75.0	100.0	32
HC-III	94.5	97.3	89.7	93.9	75.0	73.2	94.0	76
HC-II	98.0	95.1	79.5	84.3	75.3	67.9	78.8	102
Location of facility								
Rural	95.7	96.4	82.8	88.0	70.8	68.7	86.6	167
Urban	98.5	97.0	96.6	96.6	81.5	84.3	96.4	68
Region								
Central	96.2	96.8	86.6	89.7	72.1	72.5	89.0	162
Eastern	93.9	97.2	88.2	91.4	77.4	82.4	96.9	36
Mid western	100	94.6	85.2	93.1	79.2	58.8	83.3	37

Importantly, availability of all drugs has improved between 2010/11 and 2012/13. Availability of Artemether/Lumefantrin has improved from 80% to 97%, SP/Fansidar from 92% to 97%, IV Quinine from 66% to 87%, Oral Quinine from 54% to 91%, Rectal Artesunate from 7% to 74%, 5% Dextrose from 64% to 73% and Artemether Injectable from 28% to 89%, Figure 14.

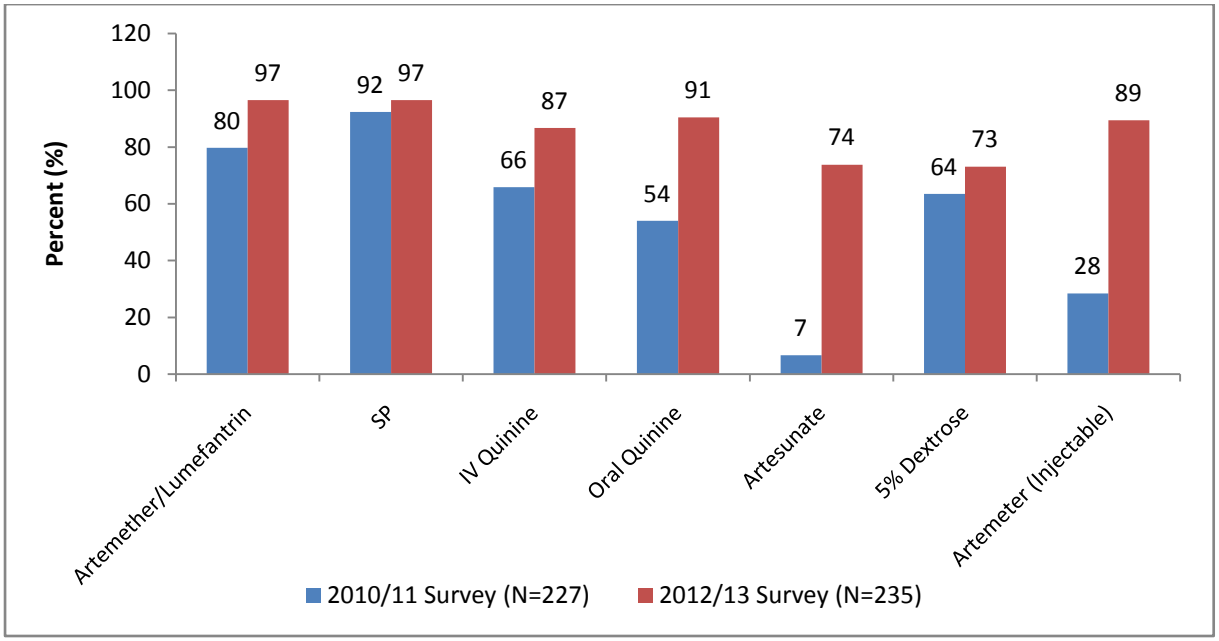


Figure 14: Availabity of drugs

6.8. Stock outs of medications

Stock out of medications in health facilities greatly interferes with the MOH and Roll Back Malaria's strategy to reduce malaria deaths in children under 5 and in pregnant women. To ascertain stock-out, the HFA survey asked whether the facility had stock out of medications in the 3 months prior to the survey. The interviewer also studied the updated stock cards in the health facility to ascertain if there was a stock out. In all facilities, SP/Fansidar had the minimum stock out levels with only 27 percent of facilities. Notably, stock-out of other medicines was considerably high as can be seen from Table 29 below.

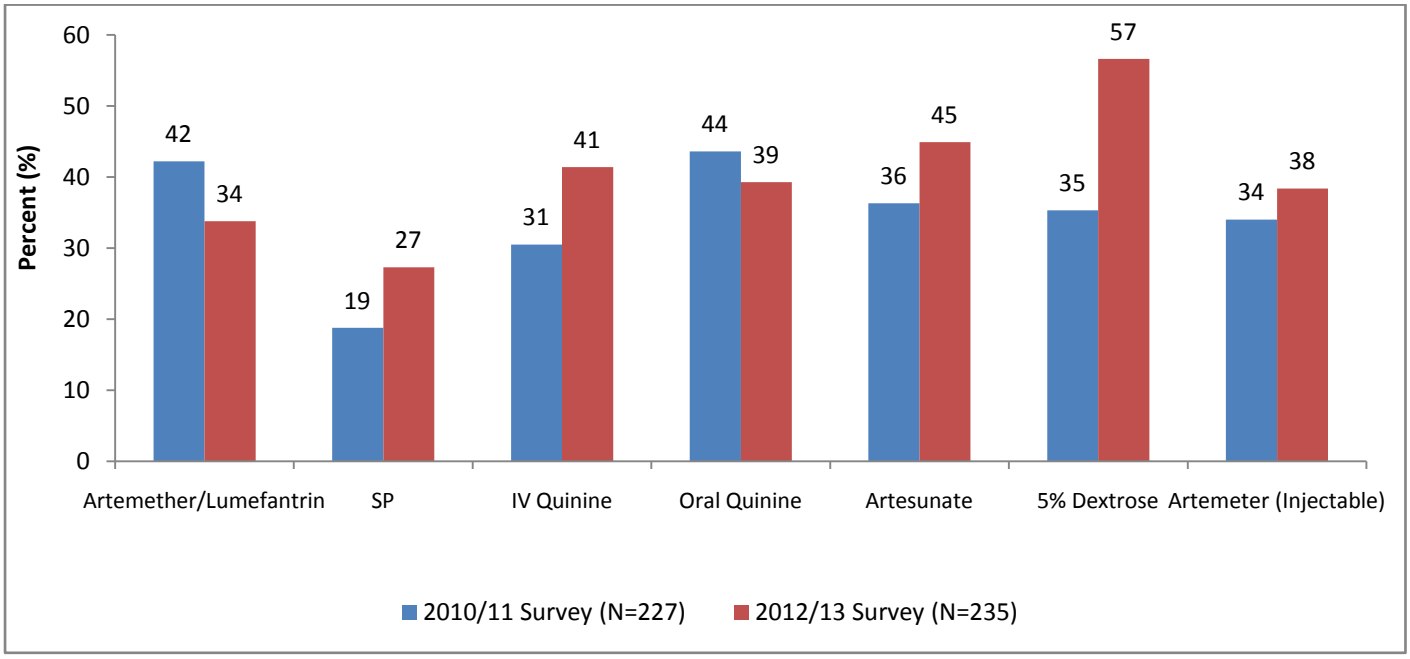
Facilities from the Eastern region were more likely to report stock outs than their central and western counterparts.

Table 29: Percent of facilities reporting stock out of medications in the past 3 months by background characteristics

Background Characteristics	Stock out of drugs at facility in the last 3 months:							Number
	Artemether/Lumefantrin	SP	IV Quinine	Oral Quinine	Artesunate	5% Dextrose	Artemeter (Injectable)	
Overall	***33.8***	***27.3***	**41.4**	**39.3**	**44.9**	**56.6**	**38.4**	***235***
Type of facility								
Hospital	34.8	30.4	33.3	33.3	47.4	42.1	30.0	25
HC -IV	44.8	28.6	59.1	50.0	66.7	77.8	52.4	32
HC-III	26.2	22.6	40.4	31.6	34.8	46.5	26.4	76
HC-II	35.8	29.6	38.6	44.3	46.6	52.7	47.4	102
Location of facility								
Rural	33.6	28.8	43.8	36.6	43.8	48.3	38.2	167
Urban	34.5	23.6	36.5	45.1	47.6	60.9	38.8	68
Region								
Central	31.1	26.1	38.3	35.5	38.4	47.4	36.2	162
Eastern	58.3	40.0	55.6	55.2	64.7	63.2	52.0	36
Mid western	14.8	16.0	39.1	37.5	59.1	66.7	33.3	37

Notably, although availability of all drugs improved between 2010/11 and 2012/13, this did not reduce stockout. Despite the reduction in stockout of Artemether / Lumefantrin from 42% to 34% and oral quinine from 44% to 39%, stockout in all other drugs increased, (Figure 15).

Figure 15: Stock out of drugs

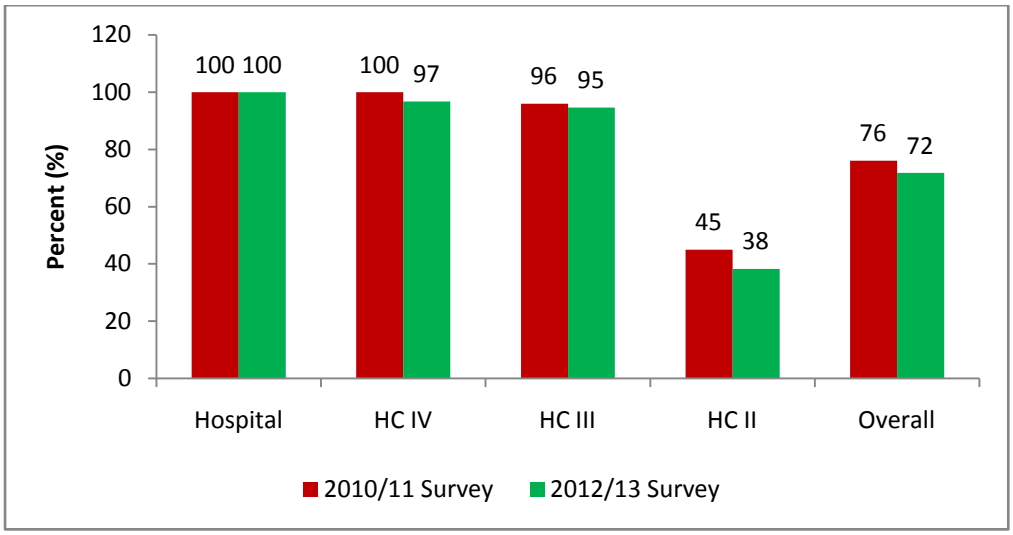


6.9. Laboratory

Improving laboratory services and promoting accurate diagnosis of malaria saves lives and prevents wastage of valuable resources especially ACTs. All HCIVs and hospitals are expected to be running a functional laboratory or designate place for carrying out laboratory tests. HC IIs and IIIs should also be able to test suspected malaria using RDTs before prescribing treatment. Questions pertaining to the laboratory in the HFA survey were asked to the most senior health worker involved in the delivery of lab services. In this section, the HFA survey sought information on whether the laboratory is equipped with key equipment mainly used in the diagnosis of malaria.

The first part of this section was to ascertain whether the facility had a functioning laboratory (designated space to carry out diagnosis by microscopy or RDT). As shown in the graph below, the proportion of all facilities with a functioning laboratory has reduced from 76% to 72%. All hospitals, nearly all HC IVs and HC IIIs have a functioning lab whereas only 38 percent of HC IIs currently have a functional laboratory (Figure 16).

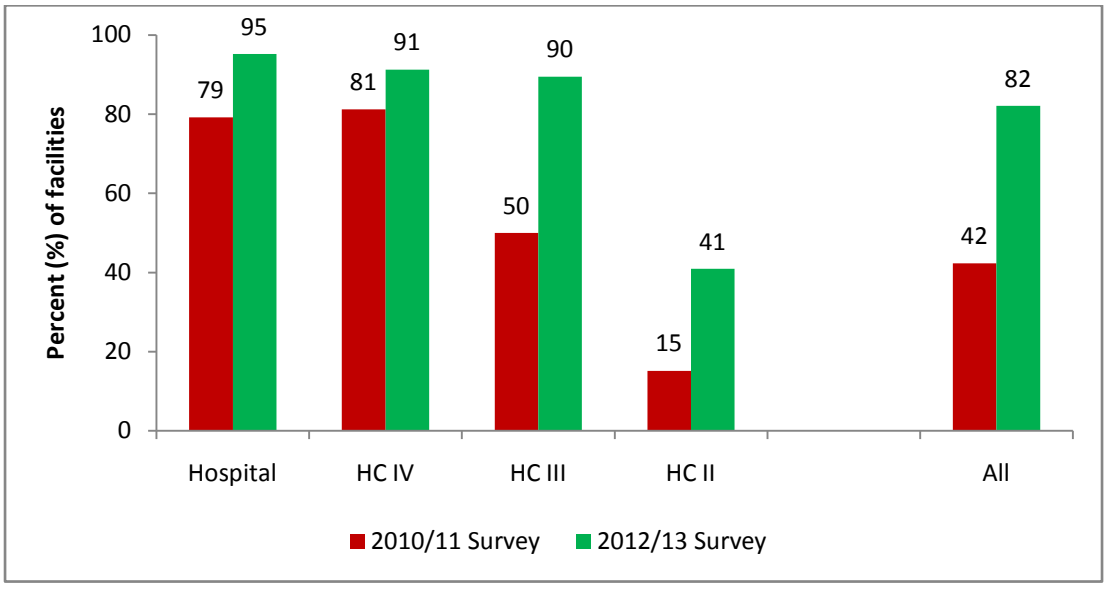
Figure 16: Percent of facilities that have a functioning laboratory



6.9.1 Ownership of Laboratory Equipment

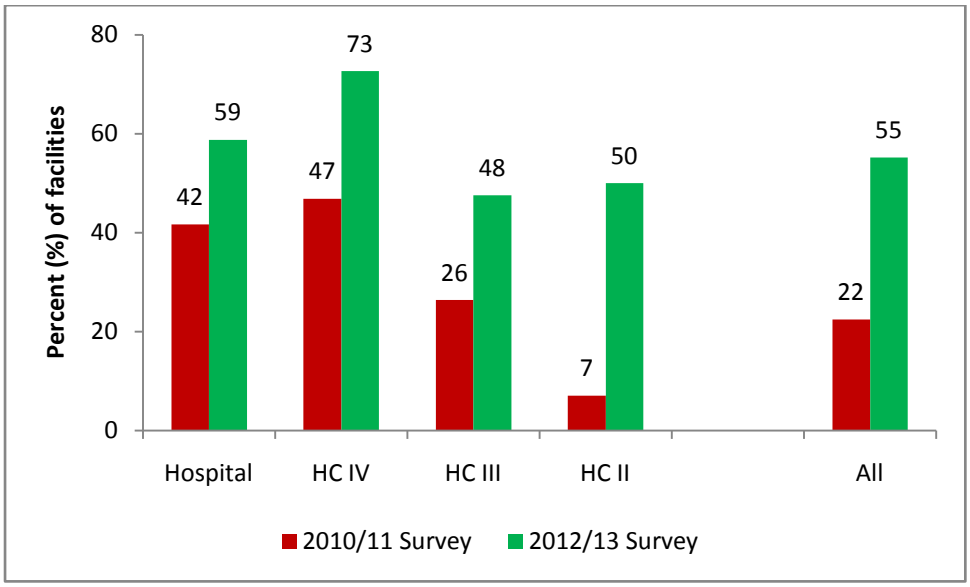
All facilities that had a functional laboratory were asked if they had key laboratory equipment and also such items were checked if they were in working order. As shown below, between 2010/11 and 2012/13, the proportion of facilities that had a working microscope almost doubled from 42% to 82%, (Figure 17).

Figure 17: Percent of facilities that owned a microscope



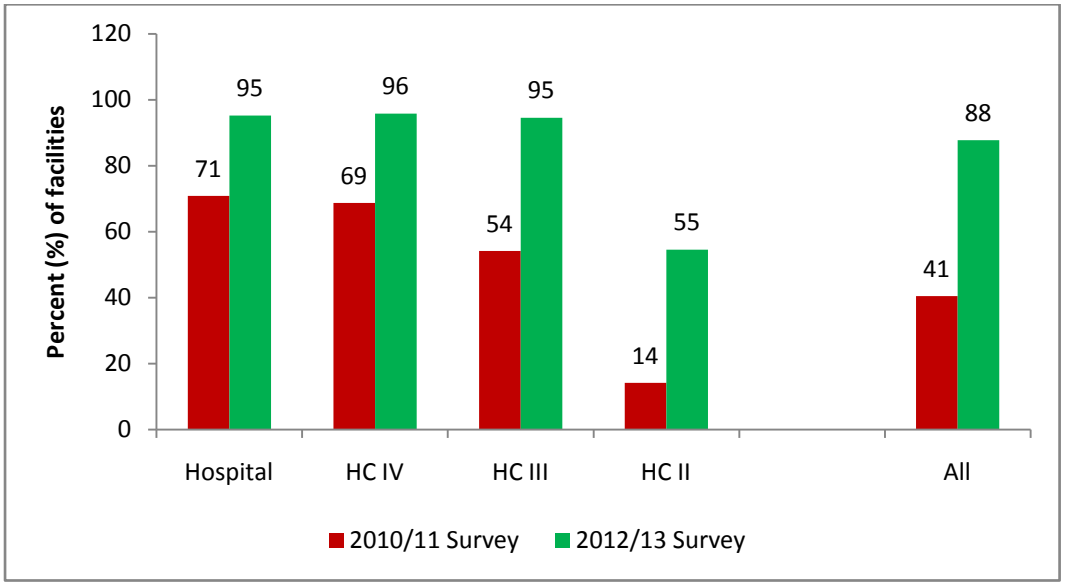
Of all facilities, the proportion of facilities that had a working microscope increased from 22% in 2010/11 to 55% in 2012/13, (Figure 18).

Figure 18: Percent of facilities that owned a working microscope



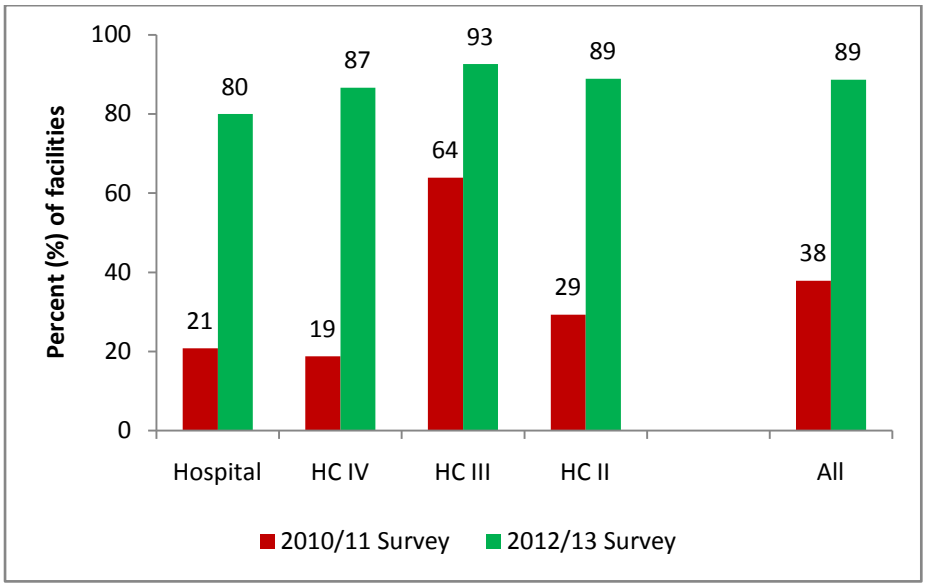
Possession of working slides and cover slips increased from 41% in 2010/11 to 88% in 2012/13 among all facilities, (Figure 19).

Figure 19: Percent of facilities that owned a working slides and coverslips



Possession of working Rapid Diagonistic Test kits (RDTs) increased from 38% in 2010/11 to 89% in 2012/13 among all facilities, (Figure 20).

Figure 20: Percent of facilities that had RDT



6.10. Clinical Audits

The clinical audit approach enables the review of operational, logistical, financial, human resource, management and coordination aspects which may together impact on the effective case management of malaria through either improved or reduced health facility functionality. The approach empowers health workers to identify problems in their context and to find local solutions. In many of the hospitals and health facilities, Clinical Audit Committees have been established to guide and to be accountable for the quarterly clinical audits.

This is beginning to bear fruits - key outcomes of the approach have included clinical improvements in severe malaria case management, the establishment of effective triage systems, improvements in record keeping and the abandoning of multiple doses of injectable quinine in 500 mls 5% Dextrose. There is also anecdotal evidence from the health facilities of, a progressive reduction in the number of malaria deaths (still requires more longitudinal HMIS, adjusted for under-reporting able to confirm this).

6.10.1. Training in Clinical Audits

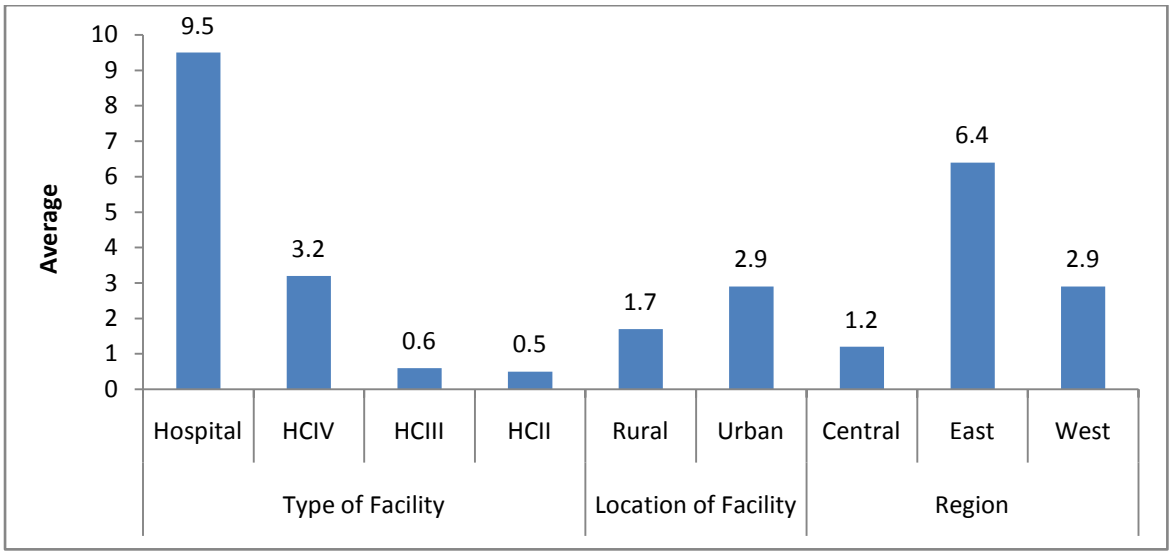
To ascertain the coverage of clinical audits in facilities, the in-charge was asked how many staff in the facility were trained. Overall 32% of facilities, reportedly, had atleast one staff who received training in clinical audit. Noteably, majority of hospitals (80%) and HC IVs (91%) had atleast one staff who received training. Furthermore, urban facilities (49%) were more likely to report atleast one staff who received clinical audit training compared to rural facilities (26%), (Table 30).

Table 30: Facilities who had atleast one staff who received clinical audit training by selected characteristics

	Percent (%)	Number, n
Overall	***32.3***	***235***
Type of Facility		
Hospital	80.0	***25***
HCIV	90.6	***32***
HCIII	19.7	***76***
HCII	11.8	***102***
Location of Facility		
Rural	25.7	***167***
Urban	48.5	***68***
Region		
Central	31.5	***162***
Eastern	36.1	***36***
Mid western	32.4	***37***

Using the responses on number of staff trained per facility, we computed the average number of staff trained in clinical audit by selected characteristics. On average, 9.5 staff were trained from hospitals, 3.2 from HC IVs and below one person in HC IIIs and HC IIs, (Figure 21).

Figure 21: Average number of staff trained in clinical audit by selected facility characteristics



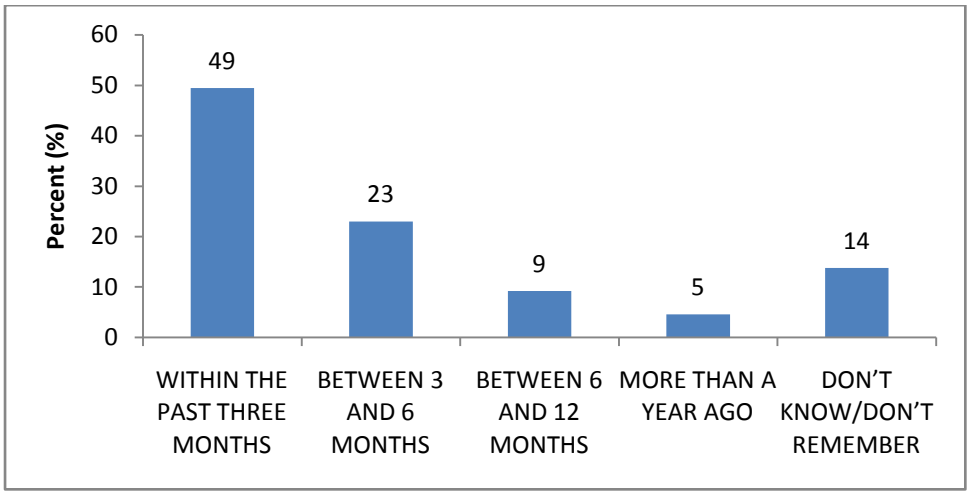
6.10.2. Conducting Clinical Audits

Overall, 40% of facilities reportedly conducted clinical audits for management of severe malaria. Of these, 18% conducted the audit and action plans were seen by the interviewer while 22% conducted the audit but action plans were not seen by the interviewer. Importantly, 78% of hospitals 68% of HC IVs conducted clinical audits, (Table 31).

Table 31: Proportion of facilities that conducted clinical audits by selected characteristics

	Conducted Audit, action plans seen (%)	Conducted Audit, action plans not seen (%)	No	Number, n
Overall	***17.6***	***22.5***	***59.9***	***235***
Type of Facility				
Hospital	47.8	30.4	21.7	***25***
HCIV	41.9	25.8	32.3	***32***
HCIII	10.8	25.7	63.5	***76***
HCII	7.4	17.0	75.5	***102***
Location of Facility				
Rural	16.6	19.1	64.3	***167***
Urban	20.0	30.8	49.2	***68***
Region				
Central	12.2	19.9	67.9	***162***
Eastern	21.9	34.4	43.8	***36***
Mid western	38.2	23.5	38.2	***37***

Figure 22: How far back clinical audit was done



Furthermore, those facilities that did the clinical audits were asked how far back this was done. As seen in Figure 22, 49% had the audit within the three months preceding the survey while 23% had it between 3 and 6 months before the survey.

6.10.3. Clinical Audit Practices

Health facilities that reportedly conducted a clinical audit were assessed whether they have systems and structures in place required for clinical improvements in severe malaria case management, the establishment of effective triage systems and improvements in record keeping.

Overall 55% of facilities had a triaging system and this was observed by the interviewer while 28% reportedly had one that was not observed. Also, 89% of facilities were observed to have a book(register) for recording patients, 88% had a pen for recording patients while only 39% had Coloured pens(or cards) for labelling documents of sorted patients (Table 32).

Table 32: Availability of clinical audit practices

	Yes, observed (%)	Yes, not observed (%)	No	Number, n
In the out-patient department(OPD) is there provision at the point of registration for triage(sorting) of patients into: emergency cases: priority cases: and non-priority cases	54.7	28.4	16.8	**95**
A health worker instructed and assigned the responsibility of recognizing severely ill patients and sorting(triaging them into: emergency cases, priority cases and non priority cases	61.3	23.7	15.1	**93**
A book(register) for recording patients	89.5	6.3	4.2	**95**
A pen for recording patients	88.4	5.3	6.3	**95**
Coloured pens(or cards) for labelling documents of sorted patients	38.7	16.1	45.2	**93**
A table for the health worker	90.4	2.1	7.5	**94**
A bench(or chairs) for patients	95.8	1.1	3.2	**95**
A weighing scale for adults	85.3	3.2	11.6	
A weighting scale for babies	72.0	7.5	20.4	**93**
A wheelchair or trolley for carrying patients	51.1	6.4	42.6	**94**
In the OPD is there a room/area for the resuscitation for the severely ill patients	59.6	40.4	0.0	**94**
Are emergency patients and priority patients being sorted out and given opportunity to see the clinician ahead of other patients	57.6	33.7	8.7	**92**
Are children lined up in a queue separate from that of adults	26.1	9.8	64.1	**92**

6.10.4. Malaria Case Fatality

There is also evidence from the health facilities of, a progressive reduction in the number of malaria deaths between July 2010 to June 2013. This was confirmed using longitudinal HMIS data, unadjusted for under-reporting.

Overtime, the malaria case fatality rate declined significantly from 1.1 deaths per 100 cases in 2010/11 to 0.9 deaths per 100 cases in 2012/13 (P-value<0.001), Table 33.

Table 33: Malaria related case fatality rate in facilities sampled from SMP implementation areas

	July 2010-June 2011			**July 2011- June 2012**			**July 2012-June 2013**			**P-value 2010/11 vs 2012/13**
	Malaria cases admitted in the IPD	IPD death due to malaria	IPD Malaria Fatality rate	Malaria cases admitted in the IPD	IPD death due to malaria	IPD Malaria Fatality rate	Malaria cases admitted in the IPD	IPD death due to malaria	IPD Malaria Fatality rate	
Hospital	32,886	512	1.6	32,223	534	1.7	39,164	518	1.3	0.009
HCIV	9,643	52	0.5	11,564	38	0.3	11,693	59	0.5	0.727
HCIII	9,173	43	0.5	10,115	40	0.4	13,018	46	0.4	0.182
HCII	2,739	6	0.2	5,741	3	0.1	9,675	8	0.1	0.060
Overall	***54,441***	***613***	***1.1***	***59,643***	***615***	***1.0***	***73,550***	***631***	***0.9***	***<0.001***

Data Source: Uganda HMIS

7. CONCLUSION AND RECOMMENDATIONS

Overall, thefindings indicate improvement on most of the SMP indicators between the 2010/11 and 2012/13 Health Facility Assessment Survey.

IR1: Malaria prevention

1. Knowledge that malaria is caused by mosquitos has improved, significantly among all respondents (ANC mothers and caregivers of children under 5 years), from 74% to 94%, p-value: <0.001. Notably, this knowledge has improved significantly across all regions and levels of demographic characteristics except among those with no education.

   Recommendation: While consolidating this success, there is need for MoH, SMP and partners to devise innovative strategies of improving knowledge among those with no education.

2. Ownership of an ITN declined significantly from 64% to 54%, p-value: <0.001. Notably, in the 2012/13 survey, clients from the Eastern (92%) were more likely than their counterparts from the Central (68%) and Mid western (48%) to own a mosquito net of any type. Also in the 2012/13 survey, Secondary and above level clients (60%) were more likely to own an ITN compared to their primary (52%) and non-educated counterparts (42%).
   The higher percentage observed in Eastern region is likely because universal LLIN distribution had already started off in that region by the time of the survey.

   Recommendation: SMP should therefore continue to work with MOH in ensuring effective and equitable distribution of LLIN in order to address these differences during the ongoing universal LLIN distribution.

3. Among pregnant women, knowledge of Sp/Fansidar for IPTp improved significantly between 2010/11 (86%) and 2012/13 (96%), (P-value: <0.001). This indicator was lowest in Eastern region and those without education. Importantly, knowledge of the number of recommended doses of IPTp improved, significantly, from 57% to 73%, P-value: <0.001.

   Recommendation: SMP should strengthen education on IPTp in the Eastern region and aim to reach those with no education

4. Almost all pregnant women pregnant when asked, reportedly took IPTp under DOT by provider guidance.There was however a decline in the proportion that received explanation on how to take SP tablets and on IPTp dosage from the provider.
   Recommendation: Refresher training with a focus on IPC skills and support supervision of health workers should be provided.

IR2: Malaria diagnosis and treatment

5. Sleeping under a mosquito net was the most commonly reported way of preventing malaria followed by clearing bushes around the house .

Recommendation: In addition to reinforcing use of ITNs, other less known ways that are easily accessible (e.g. getting rid of stagnant water should also be emphasized.

6. Overall knowledge of signs of malaria improved significantly between 2010/11 and 2012/13.
   Recommendation: This achievement should be consolidated by accurate and consistent messaging

7. Prompt seeking of treatment for malaria improved, significantly, from 59% to 81% in 2012/13, P-value: <0.001. It is worth noting that care takers with no education and those from Eastern Uganda did not register statistically significant improvements
   This is an interesting finding given that the power of day one campaign (prompt treatment in 24 hrs) focused on the Teso region more than other regions under UHMG before SMP embraced the campaign. It is possible that other interventions such as Test and Treat campaign ongoing in the central region and active Village Health Teams who are equipped with ACTs and in some instances RDTs in the central and mid western region may be contributory factors to this result. but also due to the active VHTs in these two regions. It is also important to note that HFA data my not be representative of the general population.
   Recommendation: Further investigation into this finding may be useful. Otherwise, there is need for intensified targeted intervention among those with no education and the Eastern region.

8. Overall, the proportion of clients knowledgeable that ACTs are used for treatment of Malaria declined, significantly, from 82% to 74%, P-value: 0.022. Moreover clients with no education (70%) were less likely to have this knowledge compared to their counterparts having primary (74%) and secondary or more education
   Recommendation: Campaigns to increase messaging on use and availability of ACTs are highly recommended. Those with no education should be specifically targeted

- Overall, exposure to malaria prevention and treatment messages improves key outcomes for both pregnant women and children under 5 years. For example, exposed women were 86% [OR=1.86 (0.88, 3.91)] more likely to have slept under any mosquito net in the night preceding the survey compared to unexposed counterparts. This result is similar to that observed in the 2010/11 HFA, [OR=1.63 (0.84, 3.15)]. Exposure to messages improves ownership, however owning does not mean compliance.

  Recommendation: Continued targeted messages and education campaigns are important and should therefore be sustained

APPENDICES

Appendix A: Client Exit Interview Questionnaire

Appendix B: Facility Audit Questionnaire

Appendix C: Health Provider Questionnaire

Appendix D: Client Observation Questionnaire

Appendix E: Client Exit Interview Consent Form

Appendix F: Facility Manager Consent Form

Appendix G: Health Provider Consent Form

Appendix H: Client Observation Consent Form

APPENDIX A

THE STOP MALARIA PROJECT

FACILITY ASSESMENT SURVEY

CLIENT Exit Interview Questionnaire

1. Facility Identification

ID NUMBER: _____

301	NAME OF FACILITY		
302	DISTRICT		
303	SUB-COUNTY		
304	FACILITY NUMBER		
305	TYPE OF FACILITY	REGIONAL REFERRAL HOSPITAL 01 GENERAL HOSPITAL 02 OTHER HOSPITAL 03 HEALTH CENTER IV 04 HEALTH CENTER III 05 HEALTH CENTER II 04 OTHER_____ 96 (specify)	
306	OWNERSHIP	GOVERNMENT.....01 PRIVATE NOT FOR PROFIT(PNFP).....02 OTHER _____ 96	

2. Information about Interview

307	**INTERVIEW DATE**			
308	**NAMES OF THE INTERVIEWER**			
309	**CLIENT CODE**			
310. DATE				
311. TEAM LEADER NAME				
312	**RESULT CODES**			
COMPLETED		1		
RESPONDENT NOT AVAILABLE		2		
REFUSED		3		
PARTIALLY COMPLETED		4		
OTHER		5		
313	Sex *[Please interviewer observe]*	Male Female	1 2	

NO.	QUESTIONS	CODING CLASSIFICATION	GO TO
	VERIFY THAT RESPONDENT PROVIDED CONSENT		
314	May I begin the interview?	CLIENT AGREE 1 CLIENT REFUSES 2 →	**STOP**
315	RECORD THE TIME THE INTERVIEW STARTED	☐☐ ☐☐	
	In what month and year were you born? **IF RESPONDENT IS NOT SURE, PROBE TO DETERMINE HER YEAR OF BIRTH**	MONTH ☐☐ DON'T KNOW MONTH .....98 YEAR 19 ☐☐	
	How old are you now?	AGE ☐☐ DON'T KNOW AGE 98	

	Have you ever attended school?	Yes .....1 No 2	1,→**Q**320
	What is the highest level of school you attended: primary, secondary, or post – secondary?	NONE.....1 SOME PRIMARY .....2 COMPLETED PRIMARY.....3 O Level.....4 A LEVEL .....5 UNIVERSITY/TERTIARY 6	
320	Have you ever participated in a literacy program or any other program that involves learning to read or write, (not including primary school)?	NO .....0 YES 1	0
321	Do you read a newspaper or magazine almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERYDAY .....1 ATLEAST ONCE A WEEK .....2 LESS THAN ONCE A WEEK .....3 NOT AT ALL .....4 CANNOT READ 8	
322	Do you listen to the radio almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERYDAY .....1 ATLEAST ONCE A WEEK .....2 LESS THAN ONCE A WEEK .....3 NOT AT ALL 4	
323	Do you watch television almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERYDAY .....1 ATLEAST ONCE A WEEK .....2 LESS THAN ONCE A WEEK .....3 NOT AT ALL 4	
324	As you know, some women/ men take up jobs for which they are paid in cash or kind. Others sell things, have a small business or work on the family farm or in the family business. In the last seven days, have you done	Yes .....1 No 2	1,→**Q327**

	any of these things or any other work?		
325	Although you did not work in the last seven days, do you have any job or business from which you were absent for leave, illness, vacation, maternity leave or any other such reason?	Yes .....1 No 2	1,→**Q327**
326	Have you done any work in the last 12 months?	Yes .....1 No 2	2,→**Q328**
327	What is your occupation, that is, what kind of work do you mainly do? INTERVIEWER PROBE TO OBTAIN DETAILED INFORMATION ON THE KIND OF WORK RESPONDENT DOES	Subsistence Farmer (produces mainly for own consumption).....1 Commercial Farmer (produces mainly for sale).....2 Fisherman.....3 Labourer.....4 Domestic Worker / Maid / Char / House help.....5 Petty Trader / Hawker / Vendor/Boda boda.....6 Owns Business with 3 or more employees.....7 Professional Worker (lawyer, accountant, nurse, engineer, teacher, administrator, etc. .....8 Armed Services/ Police / Security Personnel.....9 Artisan (skilled carpenter, builder, mechanic, etc).....10 Politician.....11 Broker.....12 Student.....13 Other_____97 (SPECIFY) Don't Know .....98 _____	
328	What is your tribe?	BAGANDA .....1 BANYANKORE .....2 ITESO .....3 BANGUNGU .....4 BANYARWANDA .....5 LUGBARA/MADI .....6 BASOGA .....7 LANGI .....8 BAKIGA .....9 KARIMOJONG .....10 ACHOLI .....11 BAGISU/SABINY .....12 ALUR .....13 JOPADHOLA .....14 BANYORO .....15 BATORO .....16 OTHER _____97 (SPECIFY)	
329	Do you have children?	YES .....1 NO 2	2,→**Q331**
330	When did you give birth to your youngest child?	Month…….. ☐☐ Don't know month …….96 YEAR…… ☐☐☐☐ Don't know year…97	
331	Were you or the person you brought for care today visiting the clinic for malaria related illness?	Yes .....1 No.....2 →	STOP
332			

	Did you or the person you brought for care today have blood taken from his/her finger or heel for testing?	Yes.....1 No.....2	
333	Were you or the person you bought for care today found to have malaria?	Yes.....1 No.....2	2,→**Q3**37
334	Did you or the person you brought for care today receive treatment for malaria?	Yes.....1 No 2	2,→**Q337**
335	What drugs were you or the person you brought for care given today? Any other drugs? RECORD ALL MENTIONED	**ANTI-MALARIAL DRUGS** Coartem.....1 Oral Quinine.....2 Injectable quinine .....3 Atersunate.....4 Other _____..... (SPECIFY) **ANTIBIOTIC DRUGS** Pill/Syrup .....5 Injection .....6 **OTHER DRUGS** Panadol .....7 Aspirin ....8 Ibuprofen .....9 OTHER _____ (SPECIFY) Don't know 98	
336	Did a provider explain to you or the person you brought for care HOW TO TAKE THE ANTI-MALARIAL TABLETS?	YES .....1 No.....2	All,→**Q337**
337	Have you ever been to this clinic before for malaria treatment?	YES 1 NO 2	All,→**Q338**
338	Record who the patient was	Respondent .....1 Respondent's child .....2 Respondent's relative who is a child .....3 Respondent's other relative .....4 Other .....5 (SPECIFY)	1,4,5→ Q353
339	How old is the child you bought for malaria related treatment today? IF CHILD IS LESS THAN ONE YEAR OLD, INDICATE AGE IN MONTHS.	CHILD'S AGE YEAR..... MONTHS.....	
340	Did the provider inquire WHETHER CHILD IS able or unable to drink or breastfeed at all?	YES .....1 NO 2	
341	Did the provider give you advice on how to feed the child you brought to care during this malaria episode?	YES .....1 NO 2	
342	Did the provider inquire or did you mention whether the child you bought to care today had the following symptoms?	NO YES Cough 0 1 Diarrhoea 0 1	

	TICK ALL MENTIONED	Fever or body hotness 0 1 Vomiting 0 1 Convulsions with this sickness 0 1	
343	Did the provider take the temperature of the child you brought for care today with a thermometer?	YES .....1 NO 2	
344	Did the provider weigh the child?	YES .....1 NO 2	
345	Did the provider ask you for the child's age or did you provide this information?	YES .....1 NO 2	
346	Did the provider describe the signs in the child that will require you to bring the child back to the facility?	YES .....1 NO 2	
347	Was the child you brought for care today referred to another facility or did the provider tell you to take the child somewhere else?	YES .....1 NO 2	2,→**Q349**
348	Did the provider do any of the following before referring the child?	NO YES Provided with drugs 0 1 Given something to drink 0 1	
349	How long after the fever started did you bring the child for treatment at this facility?	THE SAME DAY.....1 ONE DAY AFTER FEVER STARTED ..... 2 TWO DAYS AFTER FEVER STARTED ..... 3 THREE OR MORE DAYS AFTER ..... 4 DON'T KNOW / NOT SURE 97	
350	Did you provide any remedies/medications to the child at home before you bought him/her for treatment?	YES .....1 NO 2	2,→**Q353**
351	What medications/drugs did you give the child before you bought him/her this facility today?	Oral Quinine.....1 Atersunate.....2 Coartem .....3 Other _____ (SPECIFY) **ANTIBIOTIC DRUGS** Pill/Syrup .....4 **OTHER DRUGS** Panadol .....5 Aspirin ....6 Ibuprofen .....7 OTHER _____ (SPECIFY) Don't know.....97	
352	How soon after the fever began did you give the child these drugs?	THE SAME DAY.....1 ONE DAY AFTER FEVER STARTED .....2 TWO DAYS AFTER FEVER STARTED .....3 THREE OR MORE DAYS AFTER .....4 DON'T KNOW / NOT SURE 97	All,→**Q353**
353	Do you own a mosquito net?	YES .....1 NO 2	2,→**Q356**
354	Is it an ITN, that is a net that has been treated with a chemical to protect you from mosquito bites?	YES .....1 NO .....2 DON'T KNOW 98	
355	Where did you get the mosquito net?	HOUSEHOLD DISTRIBUTION.....1 ANC CLINIC .....2 PURCHASED FROM MARKET ....3 OTHER _____97 (SPECIFY) DON'T KNOW 98	

356	Did you sleep under a mosquito last night?	YES .....1 NO 2	2,→**Q358**
357	Was the net you slept under last night treated with a chemical?	YES .....1 NO .....2 DON'T KNOW 3	
358	INTERVIEWER CHECK Q327	Respondent .....1 Respondent's child .....2 Respondent's relative who is a child .....3 Respondent's other relative .....4 Other 5	1,4,5Q361
359	Did the child you brought for care sleep under a net last night?	YES .....1 NO 2	2,→**Q361**
360	Was the net the child slept under last night treated with a chemical?	YES .....1 NO .....2 DON'T KNOW.....98	All,→**Q361**
361	During this or previous visit did a provider offer you an ITN free of charge or offer to sell you one? IF THERE IS AN INDICATION THAT THE CLIENT WILL PICK UP OR BUY THE ITN ELSEWHERE WITHIN THE FACILITY, THAT COUNTS AS PROVIDER GIVING OR CLIENT PURCHASING FROM PROVIDER	YES, OFFERED FREE THIS VISIT .....1 YES, OFFERED FREE PREVIOUS VISIT.....2 YES, OFFERED TO SELL ME ONE THIS VISIT .....3 YES, OFFERED TO SELL ME ONE THE PREVIOUS VISIT..... 4 NO, NOT OFFERED 5	
362	What is the best medicine to treat a child who is sick with malaria?	FANSIDAR .....1 CHLOROQUINE .....2 METAKELFIN .....3 MEFLOQUINE .....4 ARTEMETHER/LUMEFANTRINE .....5 QUININE .....6 COARTEM .....7 HERBAL REMEDIES .....9 DON'T KNOW/NOT SURE.....96 OTHER _____97 (SPECIFY)	
363	How soon after the on-set of malaria should somebody suspected of having malaria be taken for treatment?	THE SAME DAY.....1 ONE DAY AFTER FEVER STARTED ..... 2 TWO DAYS AFTER FEVER STARTED ..... 3 THREE OR MORE DAYS AFTER ..... 4 WHEN THE FEVER IS TOO HIGH/TOO HOT.....5 DON'T KNOW / NOT SURE .....96 OTHER _____97 (SPECIFY)	
364	In your opinion, what are the things you can do to protect yourself or your family from malaria? DO NOT READ THE ANSWERS. RECORD ALL MENTIONED	USE MOSQUITO NETS .....1 USE INSECT REPELLENT.....2 USE AEROSOL INSECT KILLER .....3 USE ANTI-MOSQUITO COILS ..... 4 CLEARING BUSHES AROUND THE HOUSE. .....5 BURN COW DUNG TO KEEP MOSQUITOES AWAY .....6 SPRAY THE HOUSE PERIODICALLY .....7 USE MOSQUITO SCREENS IN THE HOUSE ..... 8 GET RID OF STAGNANT WATER AROUND THE HOUSE.....9 DON'T KNOW / NOT SURE .....10 NOTHING CAN BE DONE .....11 OTHER _____97 (SPECIFY)	
365	In your opinion how does somebody get malaria? DO NOT READ THE ANSWERS. RECORD ALL MENTIONED	MOSQUITO BITES .....1 DRINKING WATER THAT HAS MOSQUITO EGGS / LARVAE .....2 DRINKING UNCLEAN WATER .....3 EATING MANGOES .....4 EATING MAIZE .....5 EATING MIXED FOOD DURING HARVEST .....6 BATHING IN COLD WATER. .....7 DON'T KNOW / NOT SURE 96	

		OTHER _____97 (SPECIFY)	
366	Do you think pregnant women should be given anti-malarial tablets to prevent them from getting malaria?	YES .....1 NO .....2 DON'T KNOW.....96	
367	What dugs/medications should pregnant women be given to prevent them from getting malaria during pregnancy?	FANSIDAR .....1 CHLOROQUINE .....2 METAKELFIN .....3 MEFLOQUINE .....4 ARTEMETHER/LUMEFANTRINE .....5 QUININE .....6 COARTEM .....7 HERBAL REMEDIES .....9 DON'T KNOW/NOT SURE.....96 OTHER _____97	
368	How many doses of anti-malarial tablets should a pregnant woman take during a pregnancy to prevent her from getting malaria?	ONE .....1 TWO .....2 MORE THAN TWO .....3 DON'T KNOW/ NOT SURE.....96	
369	What are the signs that show a person may have malaria?	CONVULSIONS / FITS .....1 FEVER/HIGH TEMPEARTURE .....2 TOO WEAK TO SIT UP.....3 SEVERE VOMITING .....4 SEVERE DIARRHEA ..... 5 SICK WITH FEVER FOR TWO OR MORE DAYS .....6 NOT BEING ABLE TO EAT OR DRINK .....7 DON'T KNOW/NOT SURE.....96 OTHER _____97 (SPECIFY)	
370	Have you had of any malaria prevention and treatment messages?	YES .....1 NO .....2 DONT REMEMBER 3	
371	If yes, from whom did you hear the messages?	HEALTH PROVIDER(NURSE,DOCTOR ETC) .....1 HEALTH ASSISTANT/COMMUNITY HEALTH WORKER .....2 RADIO.....3 COMMUNITY LEADER .....4 FAMILY OR FRIENDS.....5 SCHOOL CHILDREN .....6 RELIGIOUS LEADER .....7 OTHER _____97 (SPECIFY)	
		ANC CLIENT, CONTINUE. **IF NOT ANC CLIENT, GO TO Q.385**	

	EXIT INTEVIEW FOR ANC CLIENTS ONLY		
372	Did you visit the antenatal clinic today?	YES .....1 NO.....2	IF NO, STOP INTERVIEW
373	Is This your first pregnancy?	YES .....1 NO.....2	

374	Is this your first antenatal visit at this facility for this pregnancy?	YES .....1 NO.....2	
375	How many weeks pregnant do you think you are? IF RESPONSE IS IN MONTHS, CALCULATE WEEKS, USING 4 WEEKS PER MONTH	WEEKS..... ☐☐	
376	When did you attend your first antenatal visit for this pregnancy?	WITHIN THE FIRST THREE MONTHS OF PREGNANCY.....1 BETWEEN THE FOURTH AND SIXTH MONTH .....2 BETWEEN THE 6TH AND 9TH MONTH .....3 DONT KNOW/DON'T REMEMBER 4	
377	During this or previous visits, has a provider given or prescribed any anti-malarial tablets to protect you from malaria? SHOW THE CLIENT TABLETS OF FANSIDAR	YES, THIS VISIT.....1 YES, PREVIOUS VISIT.....2 YES, BOTH PREVIOUS VISIT AND THIS VISIT.....3 NO.....4 DON'T KNOW.....98	
378	How many times during this pregnancy have you swallowed the tablets given you to prevent malaria?	ONE TIME .....1 TWO TIMES .....2 MORE THAN TWO TIMES .....3 DONT KNOW/DONT REMEMBER 4	
379	Did the provider ask you to take the tablets infront of him or her?	YES, ...1 NO, ...2	
380	Did you take them?	YES,.....1 NO,.....2	1,→**Q383**
381	If not, why?	I WAS HUNGRY .....1 DONOT LIKE THE SIDE EFFECTS .....2 OTHER _____97 (SPECIFY)	
382	Did a provider explain to you how to take the tablets given you to prevent malaria?	YES THIS VISIT.....1 YES, PREVIOUS VISIT.....2 NO.....3 DON'T KNOW 4	
383	Did the provider explain to you the number of doses of anti-malarial drugs you need during this pregnancy?	YES .....1 NO 2	
384	Did the provider explain why you need to use an insecticide treated net during pregnancy?	YES .....1 NO.....2	

Information About Client's Satisfaction

NO	QUESTIONS	CODING CLASSIFICATION	GO TO
	Now I am going to ask you questions about the services you received today. I would like to have your honest opinion about the things that we will talk about. This information will help improve malaria prevention and treatment services.		
385	How long did you wait between the time you arrived at this facility and time you were able to see a provider for the consultation?	HOURS: \ ☐☐ MINUTES:..... ☐☐ SAW PROVIDER IMMEDIATELY 000 DON'T KNOW 998	
386	**Now I am going to ask about some common problems clients have at health facilities. As I mention each one, please tell me whether any of these were problems for you today, and if so, whether they were large or small problems for you.**		

			LARGE	SMALL	NO PROB-LEM	DK
01	Time you waited	WAIT	1	2	3	8
02	Ability to discuss problems or concerns about your health with the provider	DISCUSS PROBLEMS	1	2	3	8
03	Amount of explanation you received about the medications you were given or prescribed	EXPLAIN PROB. OR TREATMENT	1	2	3	8
04	Quality of the examination and treatment	QUALITY	1	2	3	8
05	Privacy from having others see the examination	VISUAL PRIVACY	1	2	3	8
06	Privacy from having others hear your consultation discussion	AUDITORY PRIVACY	1	2	3	8
07	Availability of malaria medicines at this facility	MEDICINES	1	2	3	8
08	The hours of service at this facility	HOURS OF SERVICE	1	2	3	8
09	The number of days services are available to you	DAYS OF SERVICE	1	2	3	8
10	The cleanliness of the facility	CLEAN	1	2	3	8
11	How the staff treated you	HOW TREATED	1	2	3	8
12	Cost for services or treatment	COST	1	2	3	8
13	Any problem you had today that I did not mention	_____ (SPECIFY)	1	2	3	8

387	Were you charged or did you pay anything for any services provided today?	YES 1 NO 2	2,→**Q389**
388	What is the total amount you paid for all services or treatments you received at this facility today?	1) TOTAL AMOUNT ☐☐☐☐☐☐ PAID NO MONEY 000000 DON'T KNOW 999998 2) LAB ☐☐☐☐☐☐	

		3) MEDICINE ☐☐☐☐☐☐ 4) CONSULTATION ☐☐☐☐☐☐ 5) OTHERS ☐☐☐☐☐☐	
389	Is this the closest health facility to your home?	YES 1 NO 2 DON'T KNOW 8	1,→**Q391**
390	What was the main reason you did not go to the nearest facility?	INCONVENIENT OPERATING HOURS 01 BAD REPUTATION 02 DON'T LIKE PERSONNEL 03 NO MEDICINE 04 PREFERS TO REMAIN ANONYMOUS 05 IT IS MORE EXPENSIVE 06 REFERRAL 07 OTHERS _____ 96 (SPECIFY) DON'T KNOW 98	
391	Have you ever visited this facility before (either as a patient or visiting or accompanying a patient)?	YES 1 NO 2	

THANK YOU FOR YOUR RESPONSE!!!!

APPENDIX B: FACILITY AUDIT QUESTIONNAIRE

THE STOP MALARIA PROJECT

Facility Audit Questionnaire

1. Facility Identification

001 **NAME OF FACILITY** _____

002 **DISTRICT** _____

003 **SUB-COUNTY** _____

004 **FACILITY NUMBER** _____

005 **TYPE OF FACILITY**

REGIONAL REFERRAL HOSPITAL 01

GENERAL HOSPITAL 02

OTHER HOSPITAL 03

HEALTH CENTER IV 04

HEALTH CENTER III 05

HEALTH CENTER II 06

OTHER _____ 96

(SPECIFY)

006 **LOCATION OF FACILITY**

RURAL 01

URBAN 02

007 OPENING TIME ☐☐ ☐☐ LOSING TIME: : ☐☐ ☐☐

009 STAFFING LEVEL

Please tell me the number of staff providing malaria elated services in this facility by Cadre. Also, let me know how many individuals in each cadre are full time/part time and how many are paid and volunteering.

INTERVIEWER, WRITE THE CORRECT NUMBER IN EACH COLUMN.

Cadre	Number of Staff in cadre	Full time	Part time	Paid	Volunteer
Medical officer					
Clinical officer					
Comprehensive Nurse					
Enrolled Nurse					
Enrolled Midwife					
Registered Nurse					
Registered Midwife					
Nursing Aide					
Lab technologist					
Lab technician					
Lab Assistant					
Microscopist					
Health Educator/ Assistant					

2. Information about Interview

010 INTERVIEW DATE

011 NAMES OF THE INTERVIEWER

012 INTERVIEWER VISITS

DATE

TEAM LEADER

013 RESULT CODES

COMPLETED	1
RESPONDENT NOT AVAILABLE	2
REFUSED	3
PARTIALLY COMPLETED	4
OTHER	6

3. Number of observations, exits & service provider questionnaires completed at this facility

1	**SERVICE PROVIDER INTERVIEWS**	☐☐
2	**MALARIA IN ANC & OPD OBSERVATION**	☐☐
		☐☐

3	EXIT INTERVIEWS (PREGNANT WOMEN & CARETAKERS OF UNDER FIVES . . . . .

SECTION 1: INFORMATION ON PERSON PARTICIPATING IN FACILITY AUDIT

NO.	QUESTIONS	CODING CLASSIFICATION	GO TO
115	May I begin the interview now?	YES . . . . . 1 NO 2	→ END
016	Sex of the respondent CIRCLE ONLY THAT APPLIES	Male. . . . . 1 Female. 2	
017	How many years have you been working in this facility? IF LESS THAN ONE YEAR, INDICATE HOW MANY MONTHS	YEARS ☐☐ MONTHS ☐☐	
018	What is your qualification (doctor, clinical officer, registered nurse etc)? CIRCLE ONLY THAT APPLIES	Medical officer .....1 Clinical officer .....2 Comprehensive Nurse .....3 Enrolled Nurse .....4 Enrolled Midwife .....5 Registered Nurse .....6 Registered Midwife .....7 Nursing Aide .....8 Family planning counsellor .....9 Others _____96	

		(specify)	

INFORMATION ON SERVICES

	HEALTH FACILITY OPERATIONS		
019	How many days each week is the facility open for outpatient curative services?	NUMBER OF DAYS ☐☐ DON'T KNOW 8	
020	Does a trained health provider (a doctor, nurse, clinical officer) live on the facility premises?	YES .....1 NO.....2	
021	Is there a trained health provider assigned to and present at the facility at all times (24 hours a day) for emergencies. IF YES, ASK: Is there a duty schedule for 24 hour staff coverage? IF YES, ASK TO SEE THIS	YES, DUTY SCHEDULE OBSERVED .....1 YES, NO DUTY SCHEDULE SEEN.....2 NO 24-HOUR ONSITE STAFF.....3	1,2,→**Q23**
022	Is there a trained health provider available away from the facility but officially on call, at all times, (24 hours a day) for emergencies IF YES, ASK: Is there a duty schedule for 24 hour staff coverage? IF YES, ASK TO SEE THIS	YES, DUTY SCHEDULE OBSERVED .....1 YES, NO DUTY SCHEDULE SEEN .....2 NO 24-HOUR ONCALL STAFF.....3	
023	Do you have an estimate on the size of the catchment population that this facility serves, that is, the target, or total population living in the area served by this facility?	CATCHMENT POPULATION ☐☐☐☐☐☐ NO CATCHMENT AREA.....99999995	

		DON'T KNOW SIZE OF CATCHMENT POPULATION ……99999998	
024	Does this facility routinely provide Admissions?	YES ……1 N0……..2	
025	INDICATE HOW MANY BEDS THIS FACILITY HAS FOR ADMISSIONS	NUMBER OF BEDS ☐☐☐☐	
026	Does this facility have routine meetings for reviewing managerial and administrative matters?	YES ……1 NO……..2 DON'T KNOW ……..8	2,3→**Q31**
027	How often do meetings to discuss the facility managerial and administrative matters take place?	MONTHLY OR MORE OFTEN ……1 EVERY 2-3 MONTHS ……2 EVERY 4-6 MONTHS ……3 LESS THAN EVERY 6 MONTHS……..4	
028	Is an official record of management meetings maintained?	YES, RECORD OBSERVED ……1	

	IF YES, ASK TO SEE SOME RECORD(MINUTES OR NOTES) FROM THE MOST RECENT MEETING	YES, REPORTED, NOT SEEN .....2 NO RECORD MAINTAINED 3	
029	Are there routine meetings about facility activities or management issues that include both facility staff and community members?	YES .....1 NO.....2 DON'T KNOW 8	2, 8, **→Q31**
030	How often are routine meetings held with both facility staff and community members?	MONTHLY OR MORE OFTEN .....1 EVERY 2-3 MONTHS .....2 EVERY 4-6 MONTHS .....3 LESS THAN EVERY 6 MONTHS 4	
031	Does this facility have any system for determining clients' opinions about the health facility or its services? IF YES, CIRCLE ALL METHODS THAT ARE USED FOR ELICITNG CLIENTS' OPINIONS. PROBE FOR ALL METHODS USED.	SUGGESTION BOX.....1 CLIENT SURVEY FORM.....2 CLIENT INTERVIEW.....3 OFFICIAL MEETING WITH COMMUNITY LEADERS.....4 INFORMAL DISCUSSIONS WITH CLIENT OR COMMUNITY .....5 OTHER _____6 (SPECIFY) NO CLIENT FEEDBACK.....7 DON'T KNOW.....8	7,8,**→Q34**
032	Is there a procedure for reviewing or reporting clients' opinions? IF YES, ASK TO SEE A REPORT OR FORM ON WHICH DATA ARE COMPILED OR DISCUSSION IS REPORTED	YES, REPORT SEEN .....1 YES, REPORT NOT SEEN .....2 NO 3	
033	In the past 3 months, have any changes been made in the facility operations as a result of client opinion? IF YES, INDICATE THE CHANGE(S) RELATED TO ANY OF THE LISTED TOPICS	YES, CHANGES IN SERVICES OR TIMES OFFERED OR WAY SERVICES ARE PROVIDED .....1 YES, CHANGE FOR CLIENT SATISFICATION .....2 OTHER _____ (SPECIFY)	

		NO ……..3 DON'T KNOW ……8	
034	Does this facility routinely carry out quality assurance activities? By this I mean some formal review system or comparison of work or systems to a standard?	YES ……..1 NO……..2 DON'T KNOW ……8	2,8→**Q36**
035	Is this system implemented throughout the facility or only in specific department?	THROUGHOUT FACILITY ……..1 ONLY SPECIFIC SERVICES ……..2	
036	How many staff have been trained in clinical audit (APPLICABLE TO ONLY HCIVS AND HOSPITALS? INSET "00" IN BOX IF NO STAFF HAS BEEN TRAINED	NUMBER OF STAFF TRAINED ☐☐	
037	Has the facility ever conducted a clinical audit? IF YES, CHECK FOR ACTION PLANS	YES, ACTION PLANS SEEN ……1 YES, ACTION PLANS NOT SEEN……2 NO……3	3,→**Q39**
038	When did the facility conduct the last clinical audit?	WITHIN THE PAST THREE MONTHS……..1 BETWEEN 3 AND 6 MONTHS ……..2 BETWEEN 6 AND 12 MONTHS ……3 MORE THAN A YEAR AGO ……4 DON'T KNOW/DON'T REMEMBER ……..5	
039	Now, I would like to ask you a few questions about external supervision this facility may have received. When was the last time a supervisor from **OUTSIDE** this facility came for a supervisory visit?	WITHIN THE LAST 3 MONTHS……..1 MORE THAN 3 MONTHS AGO……..2 NEVER SUPERVISED FROM OUTSIDE FACILITY……..3	3,→**Q41**

040	The most recent time during the past 3 months that a supervisor from outside the facility visited, did he or she do any of the following?:		YES	NO	DK	
A		CHECKED	1	2	8	

	Check some registers or books?	REGISTERS.....	
B	Discuss Problems?.....	DISCUSSED 1 2 8 PROBLEMS.....	
C	Discuss policy/administrative issues?....	DISCUSSED POLICY... 1 2 8	
D	Discuss technical protocols, practices, or service delivery technical issues?....	DISCUSSED 1 2 8 TECHNICAL ISSUES	
E	Hold an official staff meeting?.	HELD STAFF 1 2 8 MEETING	
F	Observe individual staff providing services?	OBSERVE SERVICE 1 2 8 PROVISION	
G	Check equipment/infrastructure/supplies	CHECK EQUIPMENT 1 2 8	
H	Check cleanliness of facility	CHECK CLEANLINESS 1 2 8	
I	Bring supplies	BRING SUPPLIES 1 2 8	
J	Do anything else	OTHER _____ 1 2 8 (SPECIFY)	
041	Does this facility have a generator for electricity? This may be a back-up or stand-by-generator	YES, OBSERVED.....1 YES, REPORTED, NOT SEEN.....2 NO.....3 DON'T KNOW 4	
042	Does this facility ever obtain electricity from a source other than a generator?	YES, CENTRAL SUPPLY .....1 YES, SOLAR OR OTHER SOURCE .....2 YES, BOTH CENTRAL SUPPLY AND SOLAR .....3 NO.....4	4,→**Q44**
043	Is the electricity(not including any backup generator) always available	ALWAYS AVAILABLE.....1	

	during times when the facility is providing services or is it sometimes interrupted?	SOMETIMES INTERRUPTED……..2 OFTEN INTERRUPTED……..3	
044	What is the most commonly used source of water for hand washing for the facility at this time?	PIPED INTO FACILITY ……..1 PIPED ONTO FACILITY GROUNDS ……..2 PUBLIC TAP/STANDPIPE ……..3 TUBEWELL/BOREHOLE ……..4 PROTECTED DUG WELL ……..5 UNPROTECTED DUG WELL ……..6 PROTECTED SPRING ……..7 UNPROTECTED SPRING ……..8 RAINWATER ……..9 BOTTLED WATER ……..10 CART W/SMALL TANK/DRUM ……..11 TANKER TRUCK ……..12 SURFACE WATER ……..13 (RIVER/DAM/LAKE/POND) OTHER _____96 (SPECIFY) DON'T KNOW ……..98 NO WATER SOURCE ……..00	
045	Does the availability of water from this source vary by season?	YES……..1 NO……..2	
046	Does this facility have a working phone or shortwave radio to call outside, that is available at all times client services are offered?	YES, LANDLINE ……..1 YES, CELL PHONE……..2	

	CLARIFY THAT IF 24 HOUR SERVICES AE OFFERED, THIS REFERS TO 24-HOUR AVAILABILITY	YES, PAY PHONE OR PERSONAL CELL PHONE ONLY .....3 YES, RADIO .....4 NO 5	
	CASE MANAGEMENT		
047	Is the combination therapy (Coatem) being used to treat sick children at this facility?	YES……1 NO……2 DON'T KNOW 3	
048	Does the facility have any staff trained in Malaria case management in the last 2 years? PROVIDE THE NUMBERS TRAINED TO THE LEFT. PUT 00 IF NOBODY IS TRAINED	Uncomplicated malaria ☐☐ Severe Malaria ☐☐	
049	Is malaria treatment based on lab diagnosis? ***(Check Out/inpatient forms)***	YES ……1 NO ……2	
050	Please tell me the most common means of transport used by patients who are referred from other facilities to this facility for emergency services	AMBULANCE……1 PRIVATE CAR/BUS……2 MOTORCYCLE(PVT OR PUBLIC) ……..3 BICYCLE ……4 PEOPLE CARRY/PUSH O PULL PATIENT ……5 ANIMALS CARRY/PULL PATIENTS……6 NEVER RECEIVE REFERALS ……7 DON'T KNOW ……96	

051	Does this facility have a functional ambulance or other vehicle for emergency transportation for clients? Accept reported response	YES……1 NO……2 DON'T KNOW ……8	2,8→**Q53**
052	Is fuel available today? ACCEPT REPORTED RESPONSE FROM KNOWLEADGEBALE RESPONDENT	YES……1 NO……2 DON'T KNOW ……8	

053

MATERIALS

REFERENCES/ PROTOCOLS

Record if the facility have the following materials, references and protocols

	Available Observed	Available Not Observed	Not Available
a) Management of uncomplicated malaria, 3rd edition, 2005	1	2	8
b) Flow chart on malaria in pregnancy, 2nd edition, December 2005	1	2	8
c) Flow chat on management of malaria, December 2005	1	2	8
d) Malaria treatment policy brochure, 2nd edition, December 2005	1	2	8
e) Malaria treatment policy chart , 2nd edition, December 2005	1	2	8
Diagnosis and management of severe malaria (poster printed by MoH with Malaria Consortium, reprinted by SMP)	1	2	8

	PROVISION OF IPT/ANC SERVICES		
054	Does this facility provide ANC services?	YES ……..1 NO ……..2	2,→**Q74**
055	How often are ANC services provided	DAILY ……1 OTHER _____2 (SPECIFY)	
056	Do you provide Antenatal documents to mothers during ANC visits? (Including Antenatal card , Maternal passport or Exercise books)	YES ……..1 NO ……..2	
057	Do you routinely provide folic acid and iron to pregnant women?	YES FOLIC ACID ……1 YES, IRON ……2 NO, FOLIC ACID……3 NO, IRON ……4	
058	Do you provide de-worming tabs to pregnant women?	YES ……..1 NO ……2	
059	Does the health facility offer IPTp? (***Check register or observe the mother taking SP***)	YES ……..1 NO ……2	1 →**Q61**
1060	Why doesnot the facility offer IPTp	LACK OF SP ……1 LACK OF CUPS ……2 LACK OF WATER……3	

		LACK OF WATER PURIFICATION TABS….4 LACK OTHER SUPPLIES ……..5 OTHER_____97 (SPECIFY)	
061	Does the health facility administer IPTp under DOTs?	YES, OBSERVED ……1 YES, NOT OBSERVED ……2 NO……..3	1,2,→**Q63**
062	Why doesnot the facility administer IPTp under DOTS?	NO WATER ……1 NO CUPS, OTHER SUPPLIES…….2 STAFF NOT TRAINED ……3 OTHER _____97 (SPECIFY)	
063	How many health workers in this facility have been trained to offer IPTp under DOTs? IF NO STAFF TRAINED, RECORD "00"	NUMBER OF HEALTH WOKERS ☐☐	
064	Is there safe water ready for use within the ANC area for mothers to take IPT?	YES, OBSERVED ……1 YES, NOT OBSEVED ……2 NO……..3	
065	Does this facility have the following IPTp Commodities	YES NO CUPS 1 0 WATER 1 0 PURIFICATION TABS JERRYCANS 1 0	
066	PROVIDE NUMBERS IN STOCK FOR EACH OF THE FOLLOWING ITEMS	☐☐☐☐ CUPS	

		WATER PURIFICATION TABLETS ☐☐☐☐☐☐☐☐ JERRYCANS ☐☐☐☐	
067	Are the Cups adequate for IPTp DOTs during ANC days? ***(Count the cups and compare with average ANC daily attendance)*** Adequate number of cups is equal to the ANC attendance	YES ……1 NO ……2	
068	Are mothers actually using the cups	YES ……1 NO ……2	
069	Is IPTp recorded correctly in: register should be having 1 for IPTp1 in the IPTp Column 2 for IPTp2 in the IPTp Column C for completed in the IPTp Column ***(If the mothers are present check a few cards to confirm whether the cards are filled in correctly)***	YES NO ANC Register 1 0 ANC Card *1* *0*	
070	Do you currently have SP in the ANC clinic	YES ……..1 NO ……..2	

071	What challenges do you experience during administration of IPTp to mothers?	LACK OF SP ……..1 LACK OF WATER ……..2 LACK OF CUPS ……..3 LACK OF JERYCANS ……..4 LACK OF WATER PURIFICATION TABS ……5 LACK OF OTHER SUPPLIES……6 RESISTANCE FROM MOTHERS…7 LACK OF TRAINING ……..8 OTHER _____97 (SPECIFY)	
072	Do you dispense LLIN through the ANC?	YES FREE ……1 YES SUBSIDIZED COST……2 YES FULL COST ……3 NO ……4	
073	Are Health Education talks about malaria given during ANC services?	YES……..1 NO ……..2	
074	Do the following HMIS registers exist and up-to-date? The registers should be properly filled & completed. All appropriate columns should be filled in – diagnosis and treatment (dosage ,times/days. If there are counter books used as registers other than the pre-printed MOH registers information recorded	AVAIL , AVAIL, NOT AVAIL UP to date NOT UPTO OPD register 1 2 3 Inpatient register 1 2 3 Laboratory register 1 2 3 Stores register 1 2 3	

	should be like the pre-printed	ANC register … 1 2 3 1-Available, up to date 2-Available, not up to date 3-Not available	

	LABORATORY		
	FIND THE MOST SENIOR HEALTH WORKER INVOLVED IN THE DELIVERY OF LAB SERVICES. IF DIFFERENT FROM INDIVIDUAL(S) RESPONDING TO THE PREVIOUS SECTIONS, READ THE CONSENT FORM TO THEM.		
075	Does the facility have a lab? CHECK IF THE FACILITY HAVE A DESIGNATED SPACE AT LEAST CARRYING OUT MALARIA MICROSCOPY/RDTS	YES, FUNCTIONAL……..1 YES, NOT FUNCTIONAL……2 NO……..3	2,3,→**Q96**

076. Do you have the following items available?	(a) Is item present?			079 (b) If item/s available, are they in working order?		
	AVAILABLE OBSERVED	AVAILABLE NOT OBSERVED	NOT AVAILABLE	YES	NO	Nd
ITEMS REQUIRED FOR LABORATORY EXAMINATION	1	2	8	1	2	8
Electric Binocular Microscope	1	2	8	1	2	8
Hematocrit Centrifuge	1	2	8	1	2	8
Slides and coverslips	1	2	8	1	2	8
Rapid diagnostic test (rdt) for Malaria	1	2	8			
Giemsa stain	1	2	8			
Glucometer	1	2	8			

077	Does the laboratory have a waste bin for used syringes and other materials?	YES……1 NO……2	

078	Is there trash and used supplies anywhere on the laboratory floor	YES……1 NO……2	
079	Does the facility have testing protocol available in the lab	AVAILABLE OBSERVED……1 AVAILABLE, NOT OBSERVED ……..2 NOT AVAILABLE ……3	
080	Is there a skilled human resource available to carry out malaria tests?		
		LAB TECHNOLOGIST — YES: 1 — NO: 0	
		LAB TECHNICIAN — YES: 1 — NO: 0	
		LAB ASSISTANT — YES: 1 — NO: 0	
		MICROSCOPIST — YES: 1 — NO: 0	
081	Is there a lab personnel available at all times? ***Review the current duty roster of the lab personnel*)**	YES ……1 NO……2	
082	What techniques do you use to diagnose malaria in this laboratory?	Microscopy ……1 Rapid Diagnostic Tests (RDTs) 2	
083	What type of microscope(s) is used in the laboratory unit?	MONOCULAR ……1 BINOCULAR ……2 OTHER _____97 (SPECIFY)	

084	Does the facility have dysfunctional microscopes?	YES .....1 NO.....2	2,→ **Q87**
085	How long have the microscopes been not functional?	LESS THAN A MONTH .....1 ONE TO THREE MONTHS .....2 THREE TO SIX MONTHS .....3 SIX TO TWELVE MONTHS.....4 MORE THAN 12 MONTHS .....5 DON'T KNOW/DON'T REMEMBER 6	
086	Does the facility have repair plans for the equipment?	YES.....1 NO.....2	
087	Is there a microscope maintenance Log?	YES.....1 NO.....2	
088	How many lab technicians / assistants currently available have been trained in Microscopy/ RDT?	Number of Technicians ☐☐ Number of Assistants: ☐☐ ☐☐ Microscopist	
089	Who prepares the stain used at this facility laboratory?	COMMERCIALLY PREPARED .....1 REGIONAL HOSPITAL LABORATORY.....2 OTHER _____97	

		(SPECIFY)	
090	Is there a system for quality assurance of the stains?	YES……1 NO……2	
091	Is there an established system for quality assurance of slides read?	YES……1 NO……2	
092	Does lab staff label the specimen (slide) with the Lab identification number in the lab register?	YES……1 NO……2	
093	Is the lab data correctly filled in? All columns properly filled as per HMIS guidelines	YES……1 NO……2	
094	All columns properly filled as per HMIS guidelines	AVAILABLE ,UP TO DATE……1 AVAILABLE, NOT UPTO DATE……2 NOT AVAILABLE ……3	
	Note down column not filled		
095	Did the facility experience any stock out of lab supplies in the last three months?	YES……1 NO……2	

	DRUG VERIFICATION		
096	Are there updated stock cards at the facility store?	**YES……1** **NO……2**	
	097. CHECK TO SEE IF EACH OF THESE MEDICATIONS IS	**101. THEN CHECK TO SEE IF THEY HAVE HAD A STOCKOUT OF THIS**	

	DRUG VERIFICATION						
	AVAILABLE IN THE FACILITY TODAY.				**MEDICATION IN THE LAST 3 MONTHS**		
	Drug	Observed	Not Available	ND	Stock-out	No-Stock Out	**ND**
	Artemether/Lumefantrine <5						
	SP(Fasidar)						
	IV Quinine						
	Oral Quinine						
	Artesunate(Rectal)						
	5% Dextrose						
	Artemether(Injectable)						

099	What is done when the Health Facility experiences stock-outs of different medicines and supplies	PROVIDES PRESCIPTION ……1 OTHER _____97 (SPECIFY)

	BEHAVIOUR CHANGE COMMUNICATION		
100	Is there a Health Assistant/ Health Educator attached to this facility? APPLICABLE FOR HEALTH CENTER III, CIRCLE "NO" IF NOT APPLICABLE.	YES……1 NO……..2	

101	Are there any community awareness activities in this catchment area in the following malaria services?	YES NO USE OF LLINS 1 0 SANITATION 1 0 IPTP 1 0 MALARIA TREATMENT 1 0 TREATMENT SEEKING BEHAVIOR FOR SEVERE MALARIA CASES 1 0	
102	Who is conducting the community awareness activities in the catchment area?	HEALTH ASSISTANT ……1 COMMUNITY HEALTH WORKER……..2 MID WIFE……..3 HEALTH EDUCATOR……4 OTHER (Specify)_____5	
103	Are Health Education talks about malaria given to clients? ***(Check for Health Education Work Plans)***	YES……1 NO……2	
104	Does the facility (Health Assistant/ Health Educators) have Behavior Change Communications materials to support community awareness activities?	YES……1 NO……..2	
105	Do Health Assistants use appropriate teaching aides during the health education talks at the facility & community? Yes or No **(*Observe a teaching session to confirm).*** Health Assistants use one of the following materials	YES, OBSERVED DURING SESSION……..1 YES, NOT OBSERVED……..2 NO ……3	

	during client counseling /education sessions posters leaflets and flipcharts/ grain sacks etc		
106	Does the facility use data to plan for community awareness activities?	YES……1 NO……..2	
107	Are there Health Education reports for activities conducted in the last quarter?	YES, OBSERVED DURING SESSION……1 YES, NOT OBSERVED……2 NO ……3	3,→ **Q109**
108	Are the Health. Education reports submitted to the Facility In-charge/DHE/DHI?	YES……1 NO……..2	

	HMIS		
109	Does the facility have a Records Assistant or someone for data entry?	YES……1 NO……2	2,→ **Q111**
110	Is the Records Assistant at this facility trained in HMIS records?	YES……1 NO……2	
111	Is there a computer for data management at the Health Facility?	YES……1 NO……2	
112	Does the facility have an HMIS data base?	YES, ELECTRONIC……1 YES, MANUAL……2 NO……3	
113	Is the HMIS database up to date?	YES……1	

		NO……..2	
114	Is there evidence of data analysis and utilization? (Check for Malaria graph)	MALARIA GRAPH OBSERVED……1 OTHER EVIDENCE _____97 (SPECIFY) NO ……..3	

THANK YOU FOR YOUR RESPONSE!!!!

APPENDIX C: HEALTH PROVIDER QUESTIONNAIRE

THE STOP MALARIA PROJECT

FACILITY ASSESMENT SURVEY

Health Service Provider Questionnaire

Facility Identification

101	NAME OF FACILITY		
102	DISTRICT		
103	SUB-COUNTY		
104	FACILITY NUMBER		
105	TYPE OF FACILITY	REGIONAL REFERRAL HOSPITAL 01 GENERAL HOSPITAL 02 OTHER HOSPITAL 03 HEALTH CENTER IV 04 HEALTH CENTER III 05 HEALTH CENTER II 06 OTHER_____ 96 (specify)	
106	OWNERSHIP	GOVERNMENT.....01 PRIVATE NOT FOR PROFIT(PNFP).....02 OTHER _____ 96	

SERVICE PROVIDER INFORMATION

107	Service Providor Code		

108	Sex of service provider	Male 1 Female 2	

EXPERIENCE AND TRAINING

109	I would like to ask you some questions about your educational background. How many years of primary and secondary education did you complete in total?	☐☐ YEARS	
110	What is your current technical (or medical) qualification?	SPECIALIST 1 MEDICAL DOCTOR 2 CLINICAL OFFICER 3 REGISTERED MIDWIFE 4 ENROLLED MIDWIFE 5 REGISTERED NURSE6 ENROLLED NURSE 7 NURSING ASSISTANT 8 NURSING AIDE 9 COUNSELOR 10 OTHER _____11 (specify)	
111	What year did you graduate (or complete) with this qualification?	☐☐☐☐ YEAR	

112	How long have you been in service?	< 1 year .....1 1-3 years .....2 4-5 years .....3 6-10 years .....4 Above 10 years .....5 DON'T KNOW/DONT REMEMBER 6	
113	In what year did you start working in this facility? IF YEAR IS NOT KNOWN, PROBE AND MAKE THE BEST ESTIMATE	YEAR ☐☐☐☐	
114	How long have you been providing malaria related care and treatment? IF LESS THAN 1 YEAR, WRITE 00 IN THE BOXED CELLS FOR YEARS AND INDICATE THE NUMBER OF MONTHS	YEARS ☐☐ MONTHS ☐☐	

SERVICES PROVIDED

Now I would like to ask you about services you personally provide. For each service I mention, tell me if you personally provide the service at this facility and then I want to know if you have received any pre or in-service training related to the topic within the past 3 years, even if you don't currently provide the service. Do you provide [READ TOPIC FROM BELOW]. For each topic, then ask, During the past three years have you received any pre-service or in service training on [read topic] IF YES, ASK: Was this during the past 1 year.

115	**READ EACH SERVICE AND CIRCLE APPROPRIATELY**	PERFORMS SERVICE?		RECEIVED IN-SERVICE TRAINING IN LAST 1 YEARS ?		RECEIVED IN-SERVICE TRAINING IN LAST 2-3 YEARS ?	
		YES	**NO**	**YES**	**NO**	**YES**	**NO**
01	Diagnosis and/or treatment of malaria?	1	2	1	2	1	2
02	Specifically diagnosing and treating malaria in children?	1	2	1	2	1	2

03	Pre-referral treatment of severe malaria among children	1 2	1 2	1 2
04	Intermittent Preventive Treatment (IPT) of malaria for pregnant women?	1 2	1 2	1 2
05	Providing IPTp using DOTs	1 2	1 2	1 2
06	Case management of severe malaria	1 2	1 2	1 2
07	Advice on use of ITN's	1 2	1 2	1 2

	SUPERVISION		
116	Now, I want to ask a few more questions about your work in this facility. In a day, how many hours do you work in this facility? How many days do you work in this facility *To be computed by Research Assistants*. COMPUTE THE AVERAGE HOURS PER WEEK BASED ON THE RESPONSES GIVEN i.e. AVERAGE HOURS PER WEEK =AVERAGE HOURS WORKED PER DAY x No. OF DAYS WORKED IN A WEEK.	Average Hours worked in a day ☐☐ Number of days worked in a week ☐☐ ☐☐ AVERAGE HOURS PER WEEK WORKING IN THIS FACILITY	
117	I want to know if you can estimate how much of your time each week is spent providing services related to Malaria.	AVERAGE WEEKLY PERCENTAGE OF WORK ☐☐ %	

		TIME DON'T KNOW/NOT CERTAIN ……998	
118	Now, I would like to ask you some questions about supervision you have personally received. This supervision may have been from a supervisor either in this facility, or from outside the facility. Do you receive technical support and supervision in your work? IF YES, ASK, When was the most recent time?	YES, IN THE PAST 3 MONTHS……1 YES, IN THE PAST 4-6 MONTHS ……..2 YES, IN THE PAST 7-12 MONTHS ……..3 YES, MORE THAN 12 MONTHS AGO ……4 NO……..5	5, → Q121
119	How many times in the past six months has your work been supervised?	NUMBER OF TIMES ☐☐	
120	The last time you were personally supervised, did your supervisor do any of the following?	YES NO DK	
01	Deliver supplies	DELIVERED SUPPLIES 1 2 8	
02	Check your records or reports	CHECKED RECORD 1 2 8	
03	Observe your work	OBSERVED 1 2 8	
04	Provide any feedback(either positive or negative) on your performance	FEEDBACK 1 2 8	
05	Give you verbal feedback that you were doing your work well	VERABAL PRAISE 1 2 8	
06	Provide any written comment that you were doing your work well	WRITTEN PRAISE 1 2 8	
07	Provide updates on administrative or technical issues related to your work	UPDATES 1 2 8	

08	Discus problems you have encountered	DISCUSS 1 2 8	

	PRESCRIBING PRACTICES ***DO NOT READ RESPONSES TO THE RESPONDENT***	
121	What signs show that a child suffering from malaria is in danger? DONOT READ. CHECK ALL THAT IS MENTIONED.	INABILITY TO EAT/DRINK .....1 VOMITING EVERYTHING.....2 FEBRILE CONVULSIONS .....3 LETHARGIC……4 OTHER_____ 97 (SPECIFY)
122	What is included in the pre-referral treatment of malaria among children CHECK ALL RESPONSES MENTIONED	MANAGEMENT OF CONVILSIONS .....1 MANAGEMENT OF HIGH TEMPERATUES .....2 MANAGEMENT OF DEHYDRATION .....3 MANAGEMENT OF HYPOGLYSEMIA

		(Low blood sugar) .....4 QUININE.....5 OTHER _____97 (SPECIFY)
123	How many doses of sulphadoxine-pyrimethamine(SP) are recommended during pregnancy?	ONE .....1 TWO.....2 THREE .....3 FOUR .....4 MORE THAN FOUR 5
124	When should mothers take the first dose of sulphadoxine-pyrimethamine(SP) during pregnancy?	Below 16 weeks of pregnancy .....1 At 16 weeks of pregnancy.....2 After 16 weeks of pregnancy 3
125	When should mothers take the second dose of (sulphadoxine-pyrimethamine) SP during pregnancy?	
126	What medications do you usually give children below 5 years of age who are diagnosed with malaria?	Coatem .....1 Fansidar .....2 Quinine .....3 Artesunate.....4 Other _____97 (SPECIFY)
127	***What medications do you usually give pregnant women who are diagnosed with malaria in the following category?***	
127a	Pregnancy below 16 weeks	Coatem .....1 Fansidar .....2 Quinine .....3 Artesunate.....4 Other _____97 (SPECIFY)
127b	Pregnancy between 16 and 20 Weeks	Coatem 1

		Fansidar .....2 Quinine .....3 Artesunate.....4 Other _____97 (SPECIFY)
127c	Pregnancy above 20 weeks	Coatem .....1 Fansidar .....2 Quinine .....3 Artesunate.....4 Other _____97 (SPECIFY)
128	What medications do you give other adults (non pregnant women, men and children 5 and above years) who are diagnosed with simple malaria?	Coatem .....1 Fansidar .....2 Quinine .....3 Artesunate.....4 Other _____97 (SPECIFY)
129	What medications do you usually give to treat patients with severe malaria	Coatem .....1 Fansidar .....2 Oral Quinine .....3 Parenteral quinine .....4 Artesunate.....5 Other _____97 (SPECIFY)
130	Has this facility experienced a stock out of the following drugs in the past 3 months? READ OUT THE DRUG NAMES	NO YES N/A SP 0 1 2 Artemether/Lumefantrine 0 1 2

	FOR DRUGS THAT THE FACILITY NO LONGER STOCKS, CIRCLE "N/A".	Oral Quinine	0	1	2
		IV Quinine	0	1	2
		Artesunate(Rectal)	0	1	2

THANK YOU FOR YOUR RESPONSE!!!!

APPENDIX D: CLIENT PROVIDER OBSEVATION CHECKLIST

THE STOP MALARIA PROJECT

FACILITY ASSEMENT SURVEY

Client – Provider Observation tool

(For use with ANC and Child Consultations)

1. Facility Identification

ID NUMBER: _____

2. OBSERVATION CODE: _____

3. . Mystery Client: ☐YES ☐NO

201	NAME OF FACILITY		
202	DISTRICT		
203	SUB-COUNTY		
204	FACILITY NUMBER		
205	TYPE OF FACILITY	REGIONAL REFERRAL HOSPITAL 01 GENERAL HOSPITAL 02 OTHER HOSPITAL.....03 HEALTH CENTER IV 04 HEALTH CENTER III 05 HEALTH CENTER II 04 OTHER_____96	

206	OWNERSHIP	GOVERNMENT.....01 PRIVATE NOT FOR PROFIT(PNFP).....02 OTHER _____ 96	

2. Provider Information

207	**PROVIDER CATEGORY** SPECIALIST 01 MEDICAL DOCTOR 02 CLINICAL OFFICER 03 REGISTERED MIDWIFE 04 ENROLLED MIDWIFE 05 REGISTERED NURSE06	ENROLLED NURSE 07 NURSING ASSISTANT 08 NURSING AIDE 09 OTHER _____ 11 (Specify)	PROVIDER CATEGORY ☐☐
207B	Sex of provider (**1**=Male; **2**=Female)		SEX OF PROVIDER ☐
207C	PROVIDER CODE. ASSIGN 01 FOR THE FIST PROVIDER SELECTED AND 02 FOR THE SECOND SELECTED AT THIS FACILITY USE SAME NUMBER FOR STAFF INTERVIEW AND OBSERVATION		PROVIDER CODE ☐ ☐☐☐☐

3. Information about Observation

208	OBSERVATION DATE	
209	NAMES OF THE OBSERVER	
210	OBSERVER CODE	
211	CLIENT CODE	
212	TEAM LEADER	

BEFORE OBSERVING THE CONSULTATION, MAKE SURE CONSENT FOR THE OBSERVATION IS OBTAINED FROM BOTH THE SERVICE PROVIDER AND THE CLIENT.			
213	RECORD WHETHER PERMISSION WAS RECEIVED FROM THE PROVIDER.	YES 1 NO 2 →	STOP
214	RECORD WHETHER PERMISSION WAS RECEIVED FROM THE CLIENT OR THEIR CARE PROVIDER	YES 1 NO 2 → USED MYSTERY CLIENT 3	STOP
215	RECORD THE TIME THE OBSERVATION STARTED	☐☐ ☐☐	

216	**CLIENT STATUS (OBSERVER TO COMPLETE)**	**YES**	**NO**	**DK**	**NA**	
01	INDICATE WHETHER THE CLIENT HAS HAD ANY PREVIOUS CONTACT WITH A PROVIDER AT THIS FACILITY.	1	2	8		

	OBSERVATION OF ANC CLIENTS				
02	RECORD WHETHER THIS IS CLIENT'S FIRST VISIT FOR ANTENAATAL CARE AT THIS FACILITY FOR THIS PREGNANCY	1	2	8	
	RECORD WHETHER THIS IS THE CLIENT'S FIRST PREGNANCY	1	2	8	
217	CLIENT'S PERSONAL INFORMATION AND	YES	NO	DK	

	REPRODUCTIVE HISTORY. INDICATE BELOW WHETHER THE PROVIDER ASKED ABOUT OR THE CLIENT VOLUNTEERED INFORMATION ON THE FOLLOWING ITEMS:				
01	Age of client	1	2	8	
02	Medications the client is taking	1	2	8	
03	Date client's last menstrual period began	1	2	8	
04	Number of prior pregnancies client has had	1	2	8	
05	Number of living children	1	2	8	
06	Last delivery date or age of youngest child	1	2	8	
07	History of complications with pregnancy	1	2	8	
08	Ask the client about alcohol	1	2	8	
218	RECORD WHETHER THE PROVIDER PERFORMED ANY OF THE FOLLOWING PHYSICAL EXAMINATIONS OR ASKED ANY OF THE FOLLOWING HEALTH QUESTIONS.	YES	NO	DK	
01	Take the client's blood pressure	1	2	8	
02	Weigh the client	1	2	8	
03	Ask the client about smoking	1	2	8	
04	Ask the client about chronic illnesses (heart disease, diabetes, hypertension, liver or jaundice problem, breast cancer)	1	2	8	
05	Look at the client's health card(either before beginning the consultation or while collecting information or examining the client)	1	2	8	
219	RECORD WHETHER THE PROVIDER TOOK ANY OF THE FOLLOWING STEPS TO ASSURE THE CLIENT OF PRIVACY	**YES**	**NO**	**DK**	
01	Ensure visual privacy	1	2	8	
02	Ensure auditory privacy	1	2	8	

03	Assure the client orally of confidentiality	1 2 8	
220	RECORD WHETHER THE PROVIDER GAVE THE CLIENT ANY OF THE FOLLOWING TREATMENTS OR COUNSELLING	YES NO DK	
01	**Prescribe IPT-1 or IPT-2**	1 2 8	
02	**Give IPT-1 or IPT-2**	1 2 8	
03	Explain the purpose of taking SP during pregnancy	1 2 8	
04	Explain how to take SP	1 2 8	
05	Explain possible side effects of the malarial tablets(These include; Nausea, Vomiting, Headache, Skin reaction)	1 2 8	
	DIRECT OBSERVATION	1 2 8	
06	**Dose of IPT-1 or IPT-2 is ingested in presence of provider**	1 2 8	
07	Importance of a second dose of IPT explained	1 2 8	
08	Importance of using ITN is explained explicitly	1 2 8	
09	Client given ITN free of charge	1 2 8	
10	Client purchased ITN from provider	1 2 8	
221	RECORD WHETHER THE PROVIDER USED ANY VISUAL AIDS FOR HEALTH EDUCATION OR COUNSELLING DURING THE CONSULTATION	1 2 8	
222	RECORD WHETHER THE PROVIDER WROTE ON THE CLIENT'S HEALTH CARD	1 2 8	
223	PROVIDER ASKS THE CLIENT HOW MANY WEEKS THE PREGNANCY IS.	YES.....1 NO.....2 DON'T KNOW .....98 WEEK OF PREGNANCY ☐☐	

224	RECORD THE OUTCOME OF THE CONSULTATION	CLIENT SENT HOME .....1 CLIENT REFERRED(TO LABORATORY OR OTHER PROVIDER) AT SAME FACILITY .....2 CLIENT ADMITTED TO SAME FACILITY .....3 CLIENT REFERRED TO OTHER FACILITY .....4 DON'T KNOW 8	
225	RECORD THE TIME THE OBSERVATION ENDED	☐☐ ☐☐	
	Observer's comments:		

	OBSERVATION OF CHILDREN SUSPECTED OF HAVING MALARIA				
		YES	NO	DK	
226	RECORD WHETHER THE PROVIDER ASKED ABOUT OR WHETHER THE CARETAKER MENTIONED THAT THE CHILD HAD ANY OF THE FOLLOWING MAJOR SYMPTOMS	1	2	8	
01	Cough or difficult breathing(e.g fast breathing)	1	2	8	
02	Diarrhea	1	2	8	
03	Fever or body hotness	1	2	8	
04	Ear pain or discharge	1	2	8	
227	RECORD WHETHER THE PROVIDER ASKED ABOUT OR WHETHER THE CARETAKER MENTIONED ANY OF THE FOLLOWING	YES	NO	DK	
01	Whether the child is able or unable to drink or breastfeed at all				
02	Whether the child vomits everything	1	2	8	

03	Whether the child had had convulsions with this sickness	1	2	8	
04	Whether the child was given any medication at home	1	2	8	
228	RECORD WHETHER THE PROVIDER PERFOMED ANY OF THE FOLLOWING PHYSICAL EXAMINATIONS	YES	NO	DK	
01	Take the child's temperature by thermometer	1	2	8	
02	Feel the child for fever or body hotness	1	2	8	
03	Count respiration(breaths) using timer	1	2	8	
04	Ausculate child (listen to chest with stethoscope)	1	2	8	
05	Look in child's ear	1	2	8	
06	Open the mouth	1	2	8	
07	Child sent to the laboratory for a test	1	2	8	
229	RECORD WHETHER A PROVIDER ASKED ABOUT OR PERFORMED OTHER ASSESSMENTS OF THE CHILD'S HEALTH BY DOING ANY OF THE FOLLOWING	YES	NO	DK	
01	Offer the child something to drink or ask the mother to put the child to the breast(IF CHILD DRINKS OR FEEDS AT BREAST DURING VISIT, THIS COUNTS AS YES)	1	2	8	
02	Ask about normal feeding practices when the child is not ill	1	2	8	
03	Ask about normal breast feeding practices when the child is not ill	1	2	8	
04	Look at the child's health card/book either before beginning the consultation, or while collecting information from the caretaker, or when examining this child	1	2	8	
230	THIS QUESTION REFERS TO ANTI – MALARIALS THE CARETAKER WILL GIVE TO THE CHILD AT HOME	YES	NO	DK	
01	Give a written prescription during consultation	1	2	8	
02	Provide oral medication during consultation	1	2	8	
	DID THE PROVIDER EXPLAIN:	1	2	8	
03	How much of the medicine to take each time(dose)	1	2	8	
04	How many times each day the medicine should be taken(frequency)	1	2	8	
05	How many days the medicine should be taken(duration)	1	2	8	

06	Ask the caretaker to repeat the instructions for the medications	1	2	8	
07	Give the first dose of the oral treatment	1	2	8	
231	RECORD WHETHER THE CHILD WAS REFERED TO ANOTHER PROVIDER OR FOR A LABORATORY TEST	YES	NO	DK	
01	WAS CHILD REFERED TO ANOTHER PROVIDER	1	2	8	
02	DID THE PROVIDER EXPLAIN THE REASON FOR THE REFERAL	1	2	8	
03	WAS A REFERAL SLIP GIVEN	1	2	8	
04	DID THE PROVIDER EXPLAIN WHERE/WHOM TO GO TO	1	2	8	
232	RECORD WHETHER A PROVIDER USED ANY VISUAL AIDS WHEN PROVIDING INDIVIDUAL HEALTH EDUCATION OR COUNSELING TO THE CARETAKER ABOUT THE CHILD	1	2	8	
233	RECORD WHETHE THE PROVIDER REFERRED TO THE CHILD'S HEALTH CARD/BOOK BEFORE OR DURING CONSULTATION	1	2	8	
234	RECORD WEHTHER THE PROVIDER WROTE ON THE CHILD'S HEALTH CARD	1	2	8	
235	RECORD THE OUTCOME OF THE CONSULTATION	CHILD SENT HOME .....1 CHILD TRANSFERED TO PROVIDER AT SAME FACILITY .....2 CHILD ADMITTED TO SAME FACILITY .....3 .....4 CHILD REFERED TO OTHER FACILITY 5			
236	RECORD THE TIME THE OBSERVATION ENDED	☐☐ ☐☐			
	Observer's comments:				

DIAGNOSIS AND TREATMENT OF CHILDHOOD MALARIA	

237	ASK THE PROVIDER TO TELL YOU THE DIAGNOSIS. EXPLAIN THAT FOR ANY DIAGNOSIS OR SYMPTOM, YOU WANT TO KNOW IF THE PROBLEM WAS SEVERE, MODERATE, OR MINOR. THEN ASK ABOUT THE TREATMENT PRESCRIBED OR PROVIDED. PROMPT IF NECESSARY	PROBLEM SEVERE.....1 PROBLEM MODERATE .....2 PROBLEM MINOR 3			
01	Malaria(DIAGNOSED BY SYMPTOMS)	1	2	8	
02	Malaria(DIAGNOSED BY MICROSCOPY IN LAB)	1	2	8	
03	Malaria(DIAGNOSED BY RDT AT SITE)	1	2	8	
238	**TREATMENT OF MALARIA: How was this malaria episode treated**				
		YES	NO	DK	
01	INJECTABLE QUININE OR ARTEMETHER	1	2	8	
02	ORAL COARTEM (ARTEMETHER + LUMEFANTRINE)	1	2	8	
03	ORAL ARTESUNATE	1	2	8	
04	IV QUININE	1	2	8	
14	OTHER (SPECIFY)	1	2	8	

THANK YOU

Appendix E: Exit Client Consent Form

JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH

ORAL CONSENT SCRIPT

To be used to solicit consent for the client interview for clients not participating in the observations

Study Title: Stop Malaria Facility Assessment

Principal Investigator: Maria Elena Figueroa, PhD

Co- Investigator: Esther Kaggwa, PhD

IRB No.: 3733

PI Version Date: V2/ July 12, 2011

Good morning/afternoon. My name is _____.

Thank you for taking the time to talk with me. I am from the Stop Malaria Project. We are conducting a study to assess the quality, availability and accessibility of malaria services in facilities supported by the project.

PURPOSE

You are invited to take part in an interview for a research study. As a part of this research, we will assess the level of satisfaction you have with the services you receive at this facility. Results from this study will help improve malaria diagnosis and treatment for people in Uganda.

ELIGIBILITY SCREENING

Were you attending the ANC clinic today? Yes/No

Did you bring to this facility a child under five years for care and treatment? Yes/No

How old are you? _____

If less than 18 years of age, please ask the following

Do you have children? Yes/ No

Are you married? Yes/No

Person obtaining consent ensures that potential respondent is aged 18 years and over or is a minor who is either married or has children. Person obtaining consent also ensures that respondent was attending the ANC clinic or had brought a child under 5 years for malaria care and treatment.

PROCEDURES

You are being asked to take part in this study by chance, much like picking an orange out of a basket without looking. You were randomly selected from clients waiting to receive ANC or had a child under five years who was waiting to receive malaria related treatment today. If you agree to take part, you will be interviewed at the end of your clinic visit by a research assistant. During this interview, you will be asked questions about your knowledge, practices and attitudes on malaria, your experiences during the consultation with the health provider and your views on the quality of services at this facility. This interview will not last more than one hour. We will interview you in a private place. To further protect your privacy, your name will not appear on any study materials. The answers we collect from you also will not be shown to anyone outside of this study team.

RISKS/DISCOMFORTS

The interview will include questions on your knowledge of malaria, so you may feel uncomfortable answering some of these questions. You can skip any question you wish and can also stop the interview at any time. You also should know that the answers you give will not be shared with your service provider or anyone else outside of the study team. But, there is a small risk that someone could learn about your answers. We will do everything we can to make sure that this does not happen.

BENEFITS

There is no direct benefit to you as an individual by participating in this study. However, the information we collect will help develop better malaria diagnosis and treatment for people in Uganda.

VOLUNTARY PARTICIPATION

You do not have to agree to be in this study and you may change your mind any time. Participation in this study is voluntary; refusal to participate will involve no penalty.

If you have any questions or complaints about this study, you can call the Dr. Esther Kaggwa at 0414-237222 or Bright Asiimwe at 0312600604. They will answer any questions or address any concerns you may have.

If you have any questions about your rights as a study participant, or if you think you have not been treated fairly, you may call the National Council for Science and Technology, telephone 0414 250 499

Do you have any questions about the study?

PERMISSION TO PROCEED

Do I have permission to interview you at the end of your visit? Yes / No

"I have read the consent form completely before the study participant, and the study participant voluntarily agreed to participate in the study."

_____ _____ _____

Print name of Person Obtaining Signature of Person Obtaining Consent Date

Consent

Give one copy to the participant and keep one copy in study records

APPENDIX F: FACILITY MANAGER/LABORATORY WORKER CONSENT FORM