Malaria Health Facility Survey

SUMMARY REPORT

July 2008

Quality Health Partners is a bilateral assistance project funded by USAID/Ghana and led by EngenderHealth. JHPIEGO and Abt Associates are implementing partners on the project. Technical assistance is also provided by Initiatives, Inc. and Family Health International.

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ACRONYMS

A/A	Artesunate/Amodiaquine
ANC	Ante Natal Care
CDC	Centers for Disease Control
CHNs	Community Health Nurses
CHPS	Community Health Compound
FANC	Focus Ante Natal Care
GHS	Ghana Health Service
HBMF	Home-based management of fever
IDSR	Integrated Diseases Surveillance Response
IMCI	Integrated Management of Childhood Illness
IPT	Intermittent Preventive Treatment
IPTi	Intermittent Preventive Treatment in Infants
IPTp	Intermittent Preventive Treatment in Pregnancy
ITN	Insecticide Treated Net
Jhpiego	An Affiliate of John Hopkins University
LLIN	Long-Lasting Insecticide Treated Nets
MA	Medical Assistant
MIP	Malaria in Pregnancy
MOH	Ministry of Health
NGO	Non Government Organisation
NHMS	Nationwide Malaria Health Facility Survey
NMCP:	National Malaria Control Programme
OPD	Out Patient Department
PMI	President's Malaria Initiative
QHP:	Quality Health Partners
RDT	Rapid Diagnostic Test
SP	Sulphadoxine Pyrimethamine
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO-AFRO	World Health Organization Africa Regional Office
WHO	World Health Organization

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A total of 36 surveyors collected the data for the survey. They were Justine Alornyo, Felix Doe, Simon Ahiataku, Grace Attimah, Mawuli Gyakobo, William Ansah, Mary Dartey, Emmanuel Ahiable, Mary Sagoe, Imoro Azumah, Beatrice Nyamekye, Harriet Charway, Ernestine Agyei Yobo, Faustina Asamoah, Kwasi Obeng, Kwaku Karikari, Florence Bedzrah, Lina Kyere, Theophilius Quaynor, William Akatsi, Beatrice Omenako, Rose Krah, Ananga Yamyolia, Vida Hervie, Boamah Boateng, Roseline Henry Udoh, Faustina Mwini, Rosina Asara, Patrick Atobrah, Agbanwa Gebiana, Margaret Azure, Sampson Sarsak, Adam Matthew, George Alira, Mery Amadu, Musa Awudu.

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EXECUTIVE SUMMARY

Introduction

The United States Government in December 2006, announced the selection of Ghana as one of the final eight countries in the five-year, $1.2 billion President's Malaria Initiative (PMI) Program to rapidly scale up malaria prevention and treatment interventions in high-burden countries in sub-Saharan Africa. [1] This initiative builds upon and collaborates with ongoing malaria control and eradication efforts of the National Malaria Control Program (NMCP) and its partners, including Roll Back Malaria and the Global Fund, as well as integrated maternal and child health strategies such as IMCI and Focused ANC, which address the problem of malaria in the high risk populations of children under age five and pregnant women. USAID, the WHO, UNICEF, UNFPA and others partner with the Ministry of Health/GHS and NMCP in these efforts.

The Quality Health Partners (QHP) project, managed by EngenderHealth, is one of four bilateral USAID Ghana health projects working to improve the health of Ghanaians, which is the overall goal of the Mission's strategic objective for health. QHP works from the policy level down to the health facility level to improve quality in the area of reproductive and child health. QHP assists nearly 200 facilities in 30 target districts in the seven southern regions of Ghana. To date, QHP has supported many malaria related activities, especially in the areas of Malaria in Pregnancy (MIP) and Case Management of Malaria, and therefore has data from the health facilities in the target area. However, QHP has neither collected data from "control districts" outside its target districts and facilities, nor worked in malaria related activities in the three Northern-belt regions. Since PMI is a nationwide program, there was the need to better understand the national situation with regard to malaria-related services in health care facilities. To inform QHP's PMI activity design and to assist partners, this nationwide health care facility survey was planned for the Year 1 Malaria Operational Plan.

The objectives of the study were to: 1) Describe the availability, functioning and quality of health and malaria treatment services in Ghana by assessing the quality of malaria case management for patients 2) Assess the preparedness (health system support) of health facilities to manage malaria and childhood illness, and 3) Assess the proportion of health workers who are treating malaria appropriately and have knowledge of the current protocols.

Methodology

The study was a cross-sectional survey. A nationally representative sample of facilities was selected for the survey that included all teaching and regional hospitals, and a sample of district hospitals, health centres and public as well as private clinics. A total of 60 facilities were assessed for the survey. Eight data collection tools adapted from those used in QHP facility baseline and mid-term surveys and WHO health facility survey were used. The tools comprised: Malaria Health Facility Audit, Patient Observation Tool, Provider Interview Tool, Re-examination of Patient and Client Exit Interview Tool, Assessment of Cases with Severe Malaria Tool, Laboratory Quality Control Tool, ANC Facility Audit Tool; and ANC Observation and Client Exit Interview Tool.

Data collectors were drawn from the GHS national and regional trainers and supervisors from QHP, WHO Country and Regional Office and the NMCP. A five day training including 2 days field practice was conducted. Data collection was completed in 2 weeks from 21 April – 3 May 2008. Field visits were undertaken by the primary investigators and other supervisors of the survey

during the fieldwork to ensure quality recording. The data were entered using EpiData and analyzed using SPSS. Data were weighted to reflect the probability of every patient having an equal chance of being selected.

Findings

Malaria Case Management

Children under 5 who should have been diagnosed with presumptive malaria during OPD visit on the day of the survey were correctly diagnosed in 80.1% of our observations-based on clinical assessment by the re-examiner. However, there was over diagnoses of presumptive malaria among 40% of patients in the over 5 population. In another vein, 42.2% of the under 5 who should have been presumptively diagnosed with malaria were not diagnosed as such, suggesting that many cases of the under 5's are being missed and not referred for treatment.

Overall, (91.4%) of all facilities are using Artseunate / Amodiaquine in the out patient dispensary. Encouragingly, all hospitals, be it teaching, regional, district or mission, are using Artesunate/Amodiaquine as the first line of drug for treating uncomplicated malaria. The figure drops to 92% of health centres and 82% of clinics doing same. Compared to government and mission facilities, fewer facilities (69.1%) from the private for profit sector are using this new regimen.

About 59% of all providers overall have knowledge of the correct dosage for Artesunate/Amodiaquine with variations from the different types of facilities. About 60% of providers from Government and mission hospitals as compared to 40% from maternity homes and 25% from CHPS zones have correct knowledge of the dosage. Only 1 in 5 of providers with correct knowledge was recorded for the private for profit facilities.

Treatment

Doctors were the least likely to prescribe Artesunate /Amodiaquine for patients diagnosed with uncomplicated malaria. For instance 48% of doctors as against 62% of Medical Assistants and 92% of nurses and midwives prescribed the regimen. However, patients seen by doctors were more likely than their other counterparts to have understood treatment information provided.

Malaria-focused counseling skills among providers were found to be weak. For instance, Only 10.1% of patients under 5 and 2.3% of patients over 5 diagnosed as having malaria were counseled on the management of malaria during consultations. Counseling was generally weak among all categories of staff with the nurses having some urge over Doctors, Medical Assistants and Midwives. None of the doctors observed gave counseling on management of malaria to caretakers of children under 5 seen.

Similarly, very few patients diagnosed as having malaria (10.8% for under 5 and 4.2% above 5) were counseled on ITN use.

Findings also show that less than 20% of patients or caregivers were told what illness their children had.

Also, only between 23%-28% of patients who were diagnosed with malaria were told what signs or symptoms should warrant a return to the facility.

Laboratory Capacity

22 out of the 59 facilities assessed had a lab. A 100 % of hospitals, 20% and 17% of clinics and maternity homes respectively had a lab.

Only 63.6% of facilities that had a lab also had all of the required materials (i.e functioning microscope, slides, giemsa stain, trained lab technician) needed for malaria microscopy.

Overall, less than 20% of patients (60 out of 314 patients) diagnosed with malaria had any laboratory tests ordered. Also, same day results were available for only 24% of patients for whom lab tests were ordered.

Assessment of Severe Malaria

Few patients (21% out of 32 cases) diagnosed as having severe malaria had a laboratory diagnosis to confirm malaria at admission. Compared to other facilities, regional hospitals were the most likely to have had laboratory confirmation of suspected severe malaria at admission.

Generally, patient records noted at least three signs of severe malaria or parasitemia in slightly more than half of the cases reviewed (50.5%).

On a positive note – patients who are being admitted for malaria generally get into care within one to three hours of arriving at the facility, suggesting the urgency of the cases is well understood

Preparedness of Health Facilities to Manage Malaria and Childhood Illnesses

About 23% of facilities had stock-out of co-packaged A/A on the day of the assessment. The privately run facilities were much less likely to have co-packaged A/A (50%).

Over 73% of facilities had copies of the standard treatment guidelines (2004).
Also encouragingly over 76% of facilities had copies of the malaria treatment chart.

Effective tracking of malaria cases was a challenge due to poor filing systems for key data. Centralized data management systems where only one person in a facility controls data was also a limitation since in the absence of that person data cannot be accessed.

Encouragingly, about 70% of providers had benefited from a refresher training on malaria in the past three years. Fewer private sector facility providers (50%) also benefited refresher training in malaria within the same time frame. Not many providers (34.0%) however had had a refresher or training in IMCI in the last three years.

Malaria in Pregnancy

Encouragingly most facilities, including private sector facilities (94.1%), are providing SP for IPT.

Access to IPT2 and IPT3 remained a challenge in most facilities. Approximately, 62.0% of pregnant women received IPT1 in facilities during the past six months, whereas 38.1% received IPT2 and 36.6% received IPT3.

Overall, 27% of facilities experienced a stock out of SP in the past six months preceding the survey. Government facilities were the least likely to have stock-outs of SP (21%) as against 50% in mission hospitals and 50% private for profit facilities.

Recommendations

Malaria Case Management

1. Whereas there was over diagnoses of presumptive malaria among 40% of patients in the over 5 population, approximately 42.2% of the under 5 who should have been presumptively diagnosed with malaria were not diagnosed as such. As much as practicable, it is recommended that **prescribers should order lab tests for all malaria suspected cases in patients over 5 years to ensure that patients with other diseases are not erroneously diagnosed and treated for malaria and secondly that malaria cases do not go undetected and hence untreated.**

2. Since less than 21% of cases diagnosed as having severe malaria had a laboratory diagnosis to confirm malaria at admission, it is recommended that **laboratory confirmation of severe malaria for both under 5 and adults be instituted and where microscopy is not feasible, RDT's use be employed.**

3. Overall, 67% of patients diagnosed with uncomplicated malaria were treated with Artesunate Amodiaquine. Physicians are the category of providers found to be least compliant with use of AS/AQ with only 48% of those observed prescribing A/A for patients diagnosed with uncomplicated malaria. **NMCP in collaboration with its stakeholders should develop and disseminate key messages targeting both providers, particularly physicians, and patients to provide education and support advocacy towards increasing provider and client compliance in the use of the combination therapy.**

4. Although more than 90% of nurses and midwives treating uncomplicated malaria among patients prescribed Artesunate /Amodiaquine, fewer of the patients (37% and 51% of patients seen by nurses and midwives respectively) understood treatment information provided. **Training programs and facilitative supervision activities would be useful in the various health facilities to help providers impart information to different categories of patients. Also, Malaria Job Aid and Treatment Chart (for wall) should be updated as needed, printed and widely disseminated, with appropriate orientation of providers**.

5. Correct knowledge of dosage of A/A was low among providers from maternity homes, CHPS zones and private for profit facilities. (See also # 4 above).

6. Fewer private for profit facilities (69%), compared to an overall figure of 92% of all facilities are prescribing Artesunate/Amodiaquine for the treatment of uncomplicated malaria. **NMCP should collaborate with the Association of private medical practitioners to**

advocate and to strengthen capacity especially of private for profit facilities in treatment of uncomplicated malaria with the current treatment regimen by including them in training activities, continuing education and reporting.

7. **Intensify public-private sector collaboration in malaria management generally. Advocate for intensive monitoring and facilitative supervision of private sector malaria control activities to ensure quality accurate diagnosis and treatment of cases.**

Laboratory Capacity

7. Only 63.6% of facilities with lab had capacity for malaria microscopy. **There is need to strengthen the capacities of the labs-particularly the regional and district hospital labs for effective malaria diagnosis. The labs should be assisted to procure needed materials and to hire lab technicians.**

8. Same day lab results were available for 24% of lab requests made. **In the long term, all hospital labs should be upgraded to offer 24 hour lab services. Within the short term, the use of RDTs that are highly sensitive and user friendly should be explored, particularly when lab facilities may not be open or otherwise fully operational.**

Preparedness of Health Facilities to Manage Malaria and Childhood Illnesses

9. Stock-out of co-packaged A/A was recorded in a number of facilities, especially the privately run facilities. For instance, 73% of sites overall had co-packaged AS/AQ in stock on the day they were visited, with the figure at 33% for private for-profit facilities. Considering that A/ A is the main first line drug for the treatment of malaria and also that malaria is endemic in Ghana, it is important for **facilities to reduce stock-outs of AA by working to improve stock management at the facility level, as well as overall commodity security.**
10. Both public and private facilities continue to stock and prescribe monotherapies. **NMCP should collaborate with the national and regional medical stores to take inventory and to withdraw from all facilities monotherapies for the treatment of malaria.**

11. Close to a quarter of the facilities assessed did not have copies of the standard treatment guidelines (2004). **Ensure that adequate copies of policies, standards and protocols are widely distributed to all facilities including the private sector facilities, since a number of facilities did not have copies Anti-Malaria drug policy and malaria treatment chart available in the OPDs** (See also # 4 above).

12. Routine health data was found to be incomplete in a number of facilities and hence reports on malaria cases were not completely available. **Management of health facilities should actively take keen interest in the use of routine data for decision making, so as to identify gaps and improve data capture, collation, dissemination and storage. Poor filing systems for key data was noted in a number of facilities.**

13. **Strengthen data management capacity at the facility level by training and updating Health Information Officers on indicators and their definitions and how data is related to overall regional and national goals.** This will go a long way to help build a

reputable national health management and information system (HMIS) to guide national policy decisions.

14. **Data quality assessment (DQAs) should be planned and implemented to address the gaps in data capture and utilization within the facilities. Improve Monitoring and Evaluation Capacity of the NMCP to ensure that DQAs are done periodically**- at least once in a year, feedback shared with facilities involved, timelines developed to address gaps and periodic monitoring instituted to ensure that gaps are addressed..

Malaria in Pregnancy

15. Whereas 62% of pregnant women received IPT1, less than 40% of them had IPT2 and IPT3. Identify and implement strategies to improve use of IPT2 and IPT3 among pregnant women. **Distribution of doses of IPT2 and IPT3 at the community level by Community Health Nurses is a promising practice that has been identified in some districts of Ghana as a way of increasing IPT coverage in a facility- This could be explored further and up-scaled. Community Health volunteers could be useful in sensitizing women to access the services.**

16. Emphasize other preventive measures of MIP apart from IPTp, ie use of ITN

17. **Improve quality of counseling for case management and MIP** (See also # 4 above).

18. Stock-outs of SP in facilities, especially private sector clinics and maternity homes remain fairly widespread. **Reduce stock-outs of SP particularly in private sector clinics and maternity homes by improving stock management at the facility level, as well as overall commodity security**.

I. Background:

In December 2006, the United States Government announced that Ghana had been selected as one of the final eight countries in a five-year, $1.2 billion initiative to rapidly scale up malaria prevention and treatment interventions in high-burden countries in sub-Saharan Africa. [1] This program to reduce the burden of malaria is called the President's Malaria Initiative or PMI.

PMI was officially launched in Ghana in December 2007 at a grand durbar in Agona Abodum, Central Region. PMI builds upon and collaborates with ongoing malaria control and eradication efforts of the National Malaria Control Program (NMCP) and its partners, including Roll Back Malaria and the Global Fund, as well as integrated maternal and child health strategies such as IMCI and Focused ANC, which address the problem of malaria in the vulnerable populations of children under age five and pregnant women. USAID, the WHO, UNICEF, UNFPA and others partner with the Ministry of Health/GHS and NMCP in these efforts.

The Quality Health Partners (QHP) project, managed by EngenderHealth, is one of four bilateral USAID health projects working to improve the health of Ghanaians, which is the overall goal of the Mission's strategic objective for health. QHP works from the policy level down to the health facility level to improve quality in the area of reproductive and child health. QHP does this through a strong collaboration with the Ministry of Health / Ghana Health Service in providing training, procuring of equipment and supplies, through facilitative supervision and by supporting the development, dissemination and implementation of standards and guidelines. Working through the regions and districts, QHP assists nearly 200 facilities in 30 target districts in the seven southern regions of Ghana. PMI is considered a nationwide program, so this will mean an expanded geographic focus for QHP beyond the present target districts, for certain activities such as this survey.

To support the work of PMI in Ghana, QHP was asked to undertake a number of tasks:

Malaria in Pregnancy (MIP)

- Update pre-service training curricula for MIP and for pre and in-service training for MIP.
- Work with ACCESS to support the provision of quality, comprehensive and integrated FANC services to enhance pregnant women's use of Long-Lasting Insecticide Treated Nets (LLIN), to complete Intermittent Preventive Treatment in Pregnancy (IPTp) and receive adequate education on malaria (including training materials and training health workers)

Case Management

- Update curricula, support pre and in-service training including private chemical sellers, as well as public and private sector facilities.
- Support NMCP in updating policy for HBMF (home-based management of fever), including advocacy for policy makers.
- Assess implementation of the new drug policy and malaria case management, IPTp use and health worker performance in sick child clinics, ANCs and in-patient facilities.

IPTi

- Sustain and build upon the IPTi programs in Tamale, Navrongo and or Kumasi and, consistent with evidence and decisions by the WHO and others, work with the MOH/NMCP to develop a written IPTi policy.

NGO Collaboration and Capacity Building

- Improve NMCP capacity for program management and supervision at the zonal, regional and district levels in collaboration with in-country partners.

To date, QHP has supported many of these activities, especially in the areas of MIP and Case Management of Malaria, and therefore has good data on the health facilities in the target area. However the project has not collected data from "control districts" outside the target districts and facilities, nor has it had malaria work in the three Northern zone regions. Therefore – to inform QHP's PMI activity design and to assist partners to better understand the national situation with regard to malaria-related services in health care facilities, a nationwide health care facility survey was conducted as part of Year 1 Malaria Operational Plan.

1.1 Objectives of the Study:

1. To describe the availability, functioning and quality of health and malaria treatment services in Ghana.
    a. the quality of malaria case management for patients – (with emphasis on children under-five, in-patient and outpatient care)
    b. the quality of care for malaria in pregnancy (prevention and management, with emphasis on IPTp)
    c. the preparedness (health system support) of health facilities to manage malaria and childhood illness
    d. by type of facility (CHPS Zone, Maternity Home, Clinic, Health Centre and Hospital)
2. To assess the proportion of health workers who are treating malaria appropriately and have knowledge of the current protocols
    a. By type of provider (physician, MA, nurse, midwife)
    b. By type of malaria (uncomplicated and complicated).

1.2. Study Design and Methodology:

The study was a cross-sectional survey consisting interviews with providers at the selected facilities in the sample, observations of service provision by providers, an audit of staffing, equipment and procedures routinely conducted at the facility level, exit interviews with caregivers of sick children and re-evaluation of clients (sick children) by expert supervisors (for comparison of actual care against the "gold standard"). There were observations of an ANC consultation, exit interview with ANC clients and in facilities where severe malaria is managed, there was observation of the care of these patients.

For this study, clinical case definition for malaria was based on national guidelines for adult and children under five years. The re-examiner based their diagnosis on patient history and examination. The criteria used in presumptively diagnosing malaria for adults were as follows: Patient with fever (history or temperature ≥ 37.5 or at least three non-fever symptoms (i.e. headache, joint pain, nausea/vomiting, chills/rigors, fatigue/general malaise, diarrhea, dizziness and anemia) then the patient is deemed to have suspected malaria. For patients under 5 years: fever (history or temperature ≥ 37.5) and other symptoms like diarrhea, inability to feed, vomiting everything and cough/difficult breathing (See under Appendices, Section 8; A2 Patient Observation form and A4 Interview and Re-examination of Patient Tool).

Data collection tools used for this study were adapted from those used in a QHP facility baseline and mid-term studies, which were also adapted from those used in the 2002 Service Provider Assessment. The WHO health facility survey tool was also reviewed as part of the tool development process. A working group comprising representatives from, GHS, the NMCP, QHP and WHO/Ghana developed the tools for the survey. In all eight tools were used. Further details on how the tools were administered in the field are given in (See under Appendices, Section 7 for details). The tools comprise the following:

A-1: Malaria Health Facility Audit (review of staffing, supplies and equipment, Child Health and data management at the facility level).
A-2: Patient Observation Form Observation of patient consultation
A-3: Provider Interview Tool on malaria practice and knowledge
A-4: Re-examination of patient and Client Exit Interview
A-5: Assessment of Cases with Severe Malaria
A-6: Laboratory Quality Control Tool
B-1: ANC Facility Audit (review of staffing, supplies and equipment, procedures and data at the ANC clinic)
B-2 ANC Observation and Client Exit Interview Tool

1.3 Training of Data Collectors and Field Work

Data collectors were health professionals (Doctors, Pharmacists, Medical assistants, Nurses and Midwives) drawn from among the GHS national and regional trainers and supervisors from QHP, and WHO Country Office and the NMCP.

A five day training of the data collectors was conducted from 14-19 April, 2008 and this included two days field practice. A reference guide for the instruments was used to ensure standard responses. Data collection was completed in 2 weeks from 21 April – 3 May 2008. Field visits were undertaken by the primary investigators and other supervisors of the survey during the fieldwork to ensure quality responses.

All interviews with providers were conducted in English, but the exit interviewers conducted with ALL patients whose care was observed were conducted in local languages of the caregivers' choice. The survey instruments did not have written translation because most people do not *read* the local language(s). The survey team was trained to simply formulate the questions in the local language for the benefit of respondents.

1.4 Sampling

The sample was selected to provide national representation of the health facilities that provide malaria treatment services. These included various types of hospitals, health centres and public as well as private clinics. Private pharmacies, psychiatric hospitals, specialist hospitals and clinics and dental clinics were not included in the sampling frame.

In order to have a nationally representative number of facilities for the survey, a total of 52 facilities was to be sampled. This number was calculated using the MEASURE Evaluation Project's Sampling Manual for Facility Surveys[7] using the following formula and assumptions:

$$n = \frac{3.84\, f\, q}{V^2\, p}$$

Where

n = the sample size we wish
p = the anticipated proportion of facilities with the attribute of interest (in the case of this survey we used .65 – which is less than the expected proportion of facilities that are expected to be using ACTs, but higher than the expect proportion of facilities where providers will be treating malaria appropriately. Given the numerous indicators of interest and the need for a reasonable sample size, this was the percentage finally decided upon by the working group.
q = is equal to (1-*p)* or in our case .35
f = is the design effect. In the case of this survey we used 1.0 – because our surveyed facilities will be drawn completely from the GHS list frame (list of health care facilities) and stratified and not subject to clustering.
V^2 is the relative variance (square of the relative error). In the case of this survey the relative variance was set to .20 to yield relative error of ±10%.
3.84 is the square of the normal deviate (1.96) needed to provide an estimate at the 95 percent level of confidence.

So:

$$n = \frac{(3.84^* 1.0 * .35)}{.04^*.65}$$

n = 52

Within the national sample, the service delivery points were arranged by type of facility before a random start was chosen to systematically select the required sample using an equal probability sample (*epsem)* to the number of facilities of that type. A complete list of all health facilities in Ghana in 2007 was used to make the selection. In addition to this sample, a census of regional hospitals and teaching hospitals were planned for inclusion in the sample to ensure that these high volume facilities are adequately represented.

Table 1: Sample of Facilities for the Malaria Health Facility Survey

Background Characteristics	Total Number of Facilities in the dataset	Percentage of Total Sample	Number of facilities proposed for the sample
CHPS	289	9.6	5
CLINIC	1287	43.0	22
HEALTH CENTRE	735	24.5	13
DISTRICT AND OTHER HOSPITALS	273	9.1	5
MATERNITY HOME	389	12.9	7
POLYCLINIC	10	.3	0
REGIONAL HOSPITAL	10	.3	10
TEACHING HOSPITAL	2	.06	2
Total	2998	100.0	64

1.5 Data Entry and Analysis

The data were entered using EpiData and double entry on all of the data was performed. All errors were checked and corrected. Data cleaning, merging of datasets resulting from the instruments and analysis was conducted using SPSS. Data were weighted to reflect the probability of every patient who visited the facility between 9.00 and 15.00 hours having an equal chance of having been selected. In addition, patient observations and findings from facilities were weighted to reflect the probability of having been selected from the overall set of health facilities in Ghana. Unless otherwise stated in the report, all results presented were weighted.

2.0. Findings

2.1. Health Facilities and Patients included in the Survey

A nationally representative sample of facilities was selected for the survey that included a census of all teaching and regional hospitals. A total of 60 facilities were assessed for the survey including a facility audit, patient observations and re-examinations, assessments of in-patient care for malaria and laboratory assessments.

Table 2: Actual Numbers Facilities and Patients in the MHFS

Type of Facility	Number of facilities surveyed	Number of OPD patients observed and re-examined		Number of providers interviewed	Number of ANC clients observed and interviewed
		Under 5	Above 5		
Type of Facility					
Teaching and Regional Hospitals	12	41	73	20	150
District and Other Hospitals	7	20	63	7	51
Health Centres	13	33	68	13	5
Clinics	15	37	107	17	31
Maternity Homes	6	4	15	7	11
CHPS Zones	7	4	8	7	10
Operating Authority					
Government	43	102	222	51	194
Mission	7	25	69	8	37
Private for Profit	10	12	63	12	23
Total Number	60	139	324	71	261

A total of 60 facilities were included in the survey including a census of all teaching and regional hospitals in the country and a sample of other types of facilities. A total of 633 patients (not shown in table) were observed, but only 464 were both observed and re-examined. Of patients who failed to return for a follow-up examination, the majority of these patients were being seen in the hospitals and larger facilities included in the survey and the majority of the patients (77.7%) were over 5 years of age. Most of those lost to follow up were in government facilities and were patients seen by either doctors or medical assistants. Those lost to follow up were not included in many parts of the final analysis.

All consenting providers who were observed were interviewed after the observations concluded (n=71).

Ante-natal care (ANC) patients were also observed and interviewed for the survey. Although a total of 261 clients were observed and interviewed, the majority of these clients were from hospitals, which are more likely to offer ANC services at least five days a week. Capturing observations of clients at health centres and other types of facilities was more challenging because these facilities still often have a specific day for services which may not have corresponded to the day the assessment was made.

2.1: Malaria Case Management

Key indicators for the survey were the percentage of patients who were diagnosed with malaria who were found to have malaria upon re-examination (Positive Predictive Value of diagnosis) and the percentage of patients who were not diagnosed with malaria who truly did not have malaria (specificity of the diagnosis). In both cases – these indicators were measured using presumptive diagnosis, because laboratory results were not often ordered for patients who were observed and were rarely available within the same day at facilities (see Table 9 for details). The results are presented in Table 3 disaggregated by age.

Table 3: Weighted Positive Predictive Value (PPV) and Negative Predictive Value (NPV) of Presumptive Malaria Diagnosis

% of patients diagnosed with malaria that actually had presumptive malaria[1]		% of patients not diagnosed with malaria that did not have presumptive malaria[1]	
Under 5	Over 5	Under 5	Over 5
80.1	60.1	57.8	80.9
n=139	n=324	n=139	n=324

[1] Includes both uncomplicated and severe malaria. PPV was defined as the number of cases of malaria diagnosed by the provider that were also diagnosed by the re-examiner. Patients may have been diagnosed presumptively or with lab results if they were available. Most of the diagnoses were presumptive.

Children under 5 who should have been diagnosed with presumptive malaria by the provider at OPD were correctly diagnosed in 80.1% of our observations by trained expert 'Gold Standard'. However, there was over diagnoses of presumptive malaria among 40% of patients in the over 5 population, according to re-examination by expert. In another vein, 42.2% of the under 5 who should have been presumptively diagnosed with malaria were not diagnosed as such, suggesting that many cases of the under 5's are being missed and not referred for treatment. The positive predictive value of malaria diagnosis was high at 88.2% for children under 5 and 93.3% for those over five. The negative predictive values of diagnosis were also high in these groups at 86.2% for children under 5 and 91.3 for those over 5.

The majority of facilities in the country are using the new treatment regimen (91.4%) in the out patient dispensary. Of concern is that 31.9% of private for profit facilities are not using the new regimen. When providers in the OPD were asked the dosage of Artseunate / Amodiaquine for a child that weighs 20 kgs (and were allowed to refer to their references) only 58.6% of providers could answer the question correctly. Again, providers in private for profit facilities were the least likely to know the correct answer. Knowledge among providers in the CHPS Zones and maternity homes were also low (Table 4).

Table 4: OPD Use of New Artesunate/ Amodiaquine Treatment and Knowledge of Correct Dosage

	% of facilities using Artesunate / Amodiaquine for treatment of malaria		% of providers that know the correct dosage (mg/kg) for this regimen[1]	
	%	n	%	N
Type of Facility				
Teaching and Regional Hospitals	100.0	12	90.0	10
District and Other Hospitals	100.0	7	66.7	6
Health Centres	92.2	13	66.7	12
Clinics	80.0	15	66.6	9
Maternity Homes	100.0	6	25.1	4
CHPS Zones	100.0	6	40.1	5
Operating Authority				
Government	96.8	43	63.1	37
Mission / Religious	100.0	7	79.6	5
Private for Profit	69.1	10	20.1	5
Total Number in Sample	91.4	59	58.6	46

[1] Providers were asked if they knew the correct dosage for a 20 kg child.

2.3. Treatment

Prescription of Artesunate / Amodiaquine for uncomplicated malaria has become fairly commonplace in facilities throughout Ghana, with 66.8% of patients with malaria being prescribed the combination therapy (Table 5). Patients seen in government facilities were much more likely than those in the private sector to be prescribed the combination.

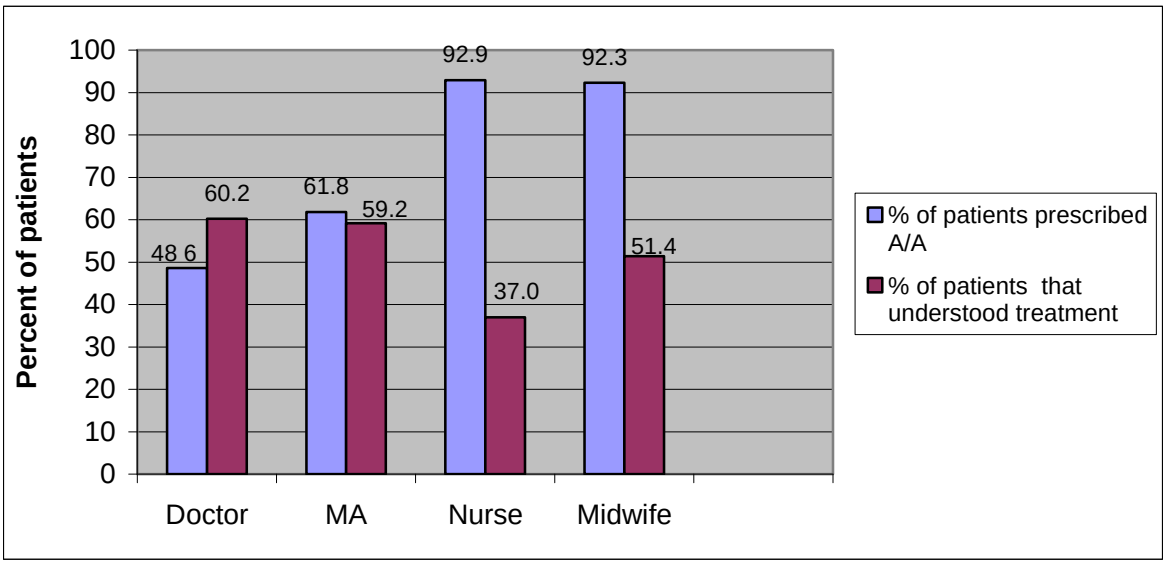
Also, the data show that patients seen and diagnosed as having uncomplicated malaria by midwives and nurses were in more than 90% of cases prescribed with Artesunate/Amodiaquine. Physicians are the least likely to be prescribed the new combination (Figure 1). During the provider interview, when asked, “how often do you prescribe Artesunate / Amodiaquine for malaria treatment?”, 78.3% of physicians replied –always or often/sometimes. However their practice of prescribing for patients reveals a different scenario. For the five physicians who admitted that they rarely or never prescribed. Artesunate / Amodiaquine, three said they feared adverse reactions and two said they just hadn’t adopted the new therapy yet.

Table 5: Percentage of patients diagnosed with malaria who received correct A/A and who correctly understood their treatment

Characteristic	Patients diagnosed and treated for malaria		Number of patients
	% of patients with uncomplicated malaria prescribed Artesunate / Amodiaquine treatment	% of patients diagnosed with malaria that correctly understood their malaria treatment	(n)
Type of Facility			
Teaching and Regional Hospitals	66.8	50.6	45
District and Other Hospitals	59.0	61.0	44
Health Centres	95.1	61.0	56
Clinics	57.8	55.8	83
Maternity Homes	68.5	53.4	10
CHPS Zones	100.0	36.8	9
Operating Authority			
Government	76.4	56.9	172
Mission/Religious	48.6	64.3	58
Private for profit	29.6	53.8	16
Total	66.8	58.5	247

[1] This includes all patients who were observed and who were diagnosed with uncomplicated malaria.

Figure 1: Percentage of malaria diagnosed patients treated with A/A and who understood their treatment by type of provider



The counseling skills of providers were also observed. The survey especially focused on basic communication about malaria. For patients that were diagnosed with malaria, overall counseling skills among providers were found to be very weak (Table 6). Providers rarely counseled patients on the management of fever during consultations, for children under 5

(10.1%) and for patients over 5 (2.3%). It is possible that counseling on the management of fever is done outside the consulting room; however it is also essential that this topic be addressed by providers. Similarly, very few patients diagnosed as having malaria were counseled on ITN use, for children under 5 (10.8%) and for patients above 5 (4.2%). Perhaps, of more concern, is the fact that less than 20% of patients or caregivers were even told what illness their children had. It will be difficult for health education messages on malaria to have an effect if patients are not even being told that they have the disease. Also, only between 23%-28% of patients who were diagnosed with malaria were told what signs or symptoms should warrant a return to the facility, meaning that few patients were counseled on the onset of severe malaria or severe disease and what to do if it occurs.

Table 6: Percentage of patients diagnosed with malaria who were counseled by providers on malaria related topics (all patients observed)

Type of Facility	Patients counseled on malaria related topics								Number of Patients (n)	
	% patients counseled on management of fever		% of patients counseled on ITN use		% of patients told what illness they have		% of patients told signs and symptom to return to facility			
Age of Patient	Under 5	Over 5	Under 5	Over 5	Under 5	Over 5	Under 5	Over 5	under 5	over 5
Type of Facility										
Teaching / Regional Hospitals	0.0	0.0	0.0	2.5	10.2	16.1	2.4	5.1	25	44
District / Other Hospitals	5.6	3.2	0.0	1.3	5.6	8.1	27.1	9.7	21	47
Health Centres	9.2	2.2	19.9	2.2	23.6	17.4	31.7	29.1	30	38
Clinics	14.2	0.0	19.9	4.0	8.5	26.4	27.4	44.1	30	55
Maternity Homes	0.0	9.7	0.0	29.0	0.0	71.1	0.0	0.0	2	9
CHPS	71.4	0.0	28.6	40.0	71.4	0.0	28.6	53.3	3	7
Operating Authority										
Govern-ment	8.7	0.6	7.7	2.6	13.7	13.8	35.7	27.3	83	137
Mission/Religious	13.7	5.0	17.1	7.0	3.4	20.7	3.4	14.3	23	50
Private for profit	17.7	0.0	35.1	0.0	35.1	71.3	0.0	40.2	5	12
Type of Provider										
Doctor	0.0	4.8	0.0	2.1	2.2	12.8	0.5	21.7	23	60
MA	5.2	0.0	9.4	0.8	8.5	19.7	33.1	28.1	53	86
Nurse	50.2	3.2	33.9	29.2	38.9	35.1	5.6	19.4	10	21
Midwife	5.2	3.1	6.8	0.0	17.1	26.8	53.6	18.3	17	24
Other	0.0	0.0	0.0	0.0	0.0	21.5	0.0	0.0	8	6
Total	10.1	2.3	10.8	4.2	12.4	19.8	27.5	23.1	111	200

2.4: Malaria Prevention in Pregnancy (IPT)

A record review on IPT practice was conducted in facilities that regularly use the Ghana Health Service ANC register to record IPT distribution. Service statistics on IPT in facilities were often not available for review on the day of the assessment. Of a total of 59 facilities audited, only 29 were able to provide complete service statistics for the previous 6 months on IPT distribution. Many midwives were not recording IPT use in the GHS ANC register. They explained that it is difficult to tabulate the IPT doses given during the month from the register for reporting– so they prefer to keep their IPT records separately, which means it is difficult for supervisors to assess how many missed opportunities there are and how systems might be improved.

From the service statistics that were available approximately 62.0% of pregnant women received IPT1 in facilities during the past six months, 38.1% received IPT2 and 36.6% received IPT3. Despite the limitation, these data provide a good estimate of the current status of IPT distribution in the country (Table 7).

Table 7: Service statistics on IPT from facilities (un-weighted)

% of pregnant women that received IPT1	% of pregnant women that received IPT2	% of pregnant women that received IPT3
62.0	38.1	36.6
(n=29)	(n=29)	(n=22)

Overall, most facilities (94.1%), including private sector facilities, are providing SP for IPT. Stock-outs of SP in facilities still remain fairly widespread, mainly focused in private sector clinics and maternity homes. The availability of the IPT training manual in most ANC units remains low with only 38.1% of facilities reporting that they had a copy. This could affect adherence to the national standard. Distribution of doses IPT2 and IPT3 at the community level by CHNs is a promising practice that has been identified in some districts of Ghana as a way of increasing IPT coverage in a facility. This community-based distribution practice was assessed during this survey and overall 39.8% of facilities are already doing this type of distribution. (Table 8).

Table 8: Number and Weighted Percentages for IPT practice in facilities surveyed.

Type of Facility	IPT practice in facilities				Number of Patients (n)
	% of facilities that offer ANC and provide IPT with SP.	% of facilities that have experience a stock out of SP in the past six months	% of facilities that have the IPT training manual	% of facilities use CHNs to distribute IPT2 and IPT3 in the community	
Type of Facility					
Teaching and Regional Hospitals	81.8	33.3	63.6	0.0	11
District and Other Hospitals	100.0	16.8	50.0	33.3	6
Health Centres	91.6	18.2	41.7	58.3	11
Clinics	87.4	42.9	12.6	12.6	8
Maternity Homes	100.0	39.9	60.1	0.0	6
CHPS Zones	100.0	25.1	33.3	100.0	4
Operating Authority					
Government	91.9	21.8	33.4	55.4	32
Mission/Religious	100.0	50.9	24.7	0.0	4
Private for profit	100.0	33.0	67.0	0.0	6
Total	94.1	27.4	38.1	39.8	46

2.5: Laboratory Capacity

All hospitals (Teaching, Regional and District hospitals) surveyed had laboratory facilities available and some clinics and maternity homes also had lab services available. However, of the twenty-two facilities that had labs, only 63.6% of them had all materials required for malaria microscopy, which included a functioning microscope, slides, giemsa stain and a trained laboratory technician. One facility did not have a functioning microscope and three of the facilities did not have a trained lab technician. Also on the day of the assessment two facilities did not have giemsa stain available (Table 9).

Of all patients who were diagnosed with malaria during observations, only 19.4% had any laboratory test for malaria ordered (Table 9). In the hospitals, only 29.1% of providers ordered any laboratory tests. Out of the patients that had blood film for malaria parasites ordered, few of them (23.6%) were able to receive their results on the same day. Most patients either did not return with their test results (39.9%) or did not have results available the same day (29.8%) (Not shown in Table)

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Table 9 Percentage of Facilities with Labs and Patients Receiving Laboratory Services

Type of Facility	% of facilities that had a lab facility (n)	% of facilities with labs that had all items for malaria microscopy[1] (n)	% of patients observed & diagnosed with malaria who also had lab tests ordered
Type of Facility			
Teaching and Regional Hospitals	100.0 (11)	90.9 (11)	47.8 (68)
District and Other Hospitals	100.0 (7)	28.6 (7)	28.3 (68)
Health Centres	0.0 (13)	-	3.3 (68)
Clinics	20.0 (15)	33.1 (3)	15.3 (89)
Maternity Homes	16.7(6)	100.0 (1)	11.4 (11)
CHPS Zones	0.0 (6)	-	0.0 (10)
Operating Authority			
Government	38.1 (42)	68.8 (16)	19.0 (219)
Mission/Religious	28.6 (7)	50.0 (2)	17.9 (77)
Private for profit	40.0 (10)	50.0 (4)	33.9 (17)
Total	37.3 (n=59)	63.6 (n=22)	19.4 (n=314)

[1] All items for malaria microscopy includes, functioning electric binocular microscope, Slides, Giemsa stain and a trained laboratory technician.

2.6 Assessment of Severe Malaria

In facilities that had in-patient capacity, an assessment of the care of severe malaria cases was made using a standardized form. The total number of cases reviewed was very small (n=32), so the results may not be generalizable. Findings show that very few suspected severe malaria cases had a laboratory confirmation of the condition at admission, and even so this was more likely to be done in the Regional hospitals. Generally, patient charts noted at least three signs of severe malaria or parasitemia in slightly more than half of the cases reviewed (50.5%). On a positive note – patients who are being admitted for malaria are generally getting into care within one to three hours of arriving at the facility, suggesting the urgency of the cases is well understood (Table 10).

Table 10: Percentages of patients reviewed for indicators on treatment of Severe Malaria

Type of Facility	Patients reviewed on treatment of Severe Malaria				Number of patients (n)
	% patients with lab confirmed diagnosis at admission	% of patients with three or more signs (or parasitemia noted on chart)	% of patients with severe malaria prescribed correct treatment	% of patients admitted in 1-3 hours of arriving at health care facility.	
Type of Facility					
Teaching Hospitals	16.7	16.7	16.7	20.0	6
Regional Hospitals	56.3	81.3	31.3	46.7	16
District / Other Hospitals	20.0	50.0	0.0	100.0	10
Operating Authority					
Government	16.7	16.7	16.7	20.0	6
Mission/Religious	18.5	51.4	1.4	97.7	22
Private for profit	25.1	50.0	0.0	100.0	4
Total	20.9	50.5	1.0	98.0	32

2.7: Preparedness of Health Facilities to Manage Malaria and Childhood Illnesses

Availability of co-packaged Artesunate / Amodiaquine was good in the facilities with a total of 77.3% of facilities having stock on the day of the assessment. Of note is that clinics and privately run facilities were much less likely to have co-packaged Artesunate / Amodiaquine in stock, compared to the government or mission managed facilities.

Of the facilities that had co-packaged Artesunate / Amodiaquine available on the day of interview, a total of 12.4% had experienced a stock–out in the past six months prior to the survey. The problem of stock outs of the combination therapy appears to be centered in teaching and regional hospitals (Table 11).

Table 11: Availability and Stock outs of Artesunate / Amodiaquine at the facility level

Characteristic	Facilities with co-packaged Artesunate / Amodiaquine in stock		Facilities having A/A in stock on day of assessment that had a stock out of A/A in the last 6 months	
	%	N	%	N
Type of Facility				
Teaching and Regional Hospitals	83.3	12	50.0	10
District and Other Hospitals	71.5	7	0.0	4
Health Centres	91.6	12	18.2	11
Clinics	66.6	15	18.2	11
Maternity Homes	60.1	5	0.0	2
CHPS Zones	100.0	5	0.0	5
Operating Authority				
Government	92.8	40	12.3	35
Mission/Religious	71.0	7	0.0	3
Private for profit	33.1	9	20.5	5
Total	77.3	56	12.4	43

Almost three quarters (73.3%) of facilities had current copies of the Standard Treatment Guidelines (2004) in their OPD areas, although the Standard Treatment Guideline is not the main reference for the new malaria drug treatment policy. Fewer (35.6%) facilities had copies of the latest Anti-Malaria drug policy available in the OPDs. Similarly, few (41.1%) facilities had copies of the IMCI chart booklet. More than three-quarters (76.3%) of facilities including half of the private sector facilities had copies of the malaria treatment chart.[1] Generally private sector facilities had fewer of the standards and guidelines compared to the government facilities (Table 12).

[1] Some concern has been expressed about the usefulness of this job aid, because the weight range for prescription is wide and may lead to overprescribing or underprescribing, especially in the lower weight categories. That this tool is widely available is good to know because the mechanisms for distribution could be replicated for future versions of the tool.

Table 12: Availability of Malaria Drug Policy and Treatment Protocols in Facilities

Type of Facility	Malaria Treatment Protocols in Facilities				Number of Facilities (n)
	% of facilities with the Standard Treatment Guidelines in the OPD	% of facilities with the Anti-Malaria Drug Policy in OPD	% of facilities that had IMCI Chart booklet in OPD	% of facilities that had the malaria treatment chart	
Type of Facility					
Teaching and Regional Hospitals	91.7	50.0	36.4	63.6	12
District and Other Hospitals	85.7	50.0	33.3	71.4	7
Health Centres	76.9	30.8	61.5	84.6	13
Clinics	60.0	13.3	40.0	73.3	15
Maternity Homes	50.0	66.7	16.7	66.7	6
CHPS Zones	71.4	28.6	42.9	100.0	6
Operating Authority					
Government	81.4	34.9	47.6	81.0	43
Mission/Religious	71.4	33.3	50.0	85.7	7
Private for profit	40.0	40.0	10.0	50.0	10
Total	73.3	35.6	41.1	76.3	76.3

Overall, more than 70% of providers had some refresher training on malaria in the past three years, with a higher proportion of providers (85%) from Mission and religiously operated facilities leading the way. Providers from private sector facilities were the least likely (50%) to have had refresher training in malaria over the period (Table 13).

Only 34.0% of providers had had a refresher or training in IMCI in the last 3 years, with mission and religiously run institutions having the least access. Doctors were also less likely to have had any IMCI refresher training in the past three years (Table 13).

Table 13: Percentage of Providers with Training in Malaria Policy and IMCI

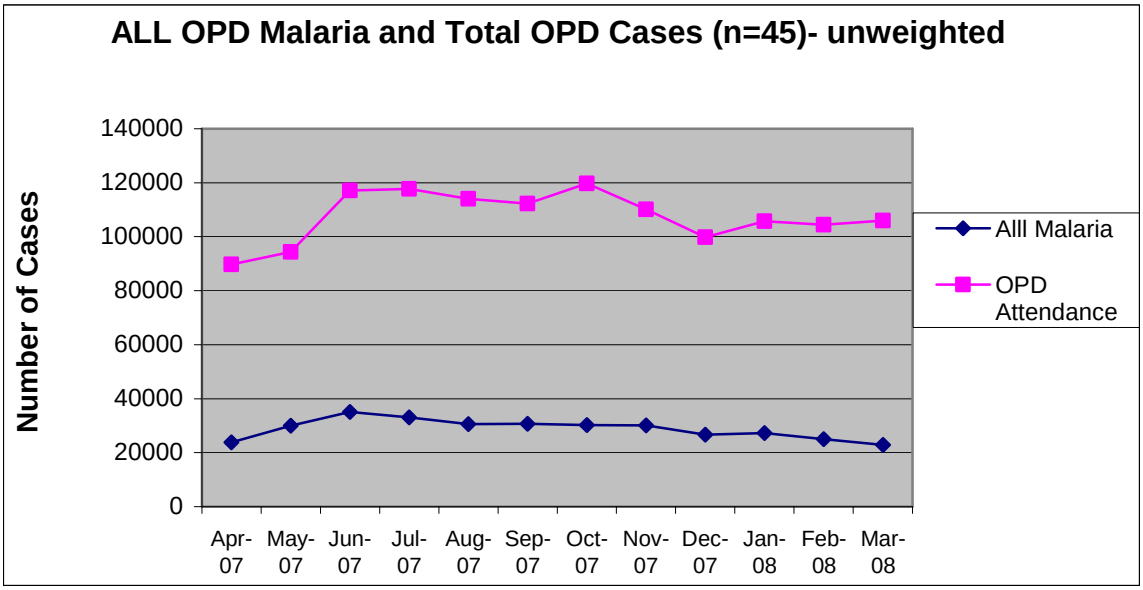
Characteristic	Providers with Training in Malaria Policy and IMCI		Number of Providers (n)
	% of providers with refresher training in malaria in last 3 years	% of providers with training or refresher in IMCI in last 3 years	
Type of Facility			
Teaching and Regional Hospitals	45.0	20.0	20
District and Other Hospitals	57.1	28.5	7
Health Centres	76.9	30.7	13
Clinics	76.5	31.3	17
Maternity Homes	57.1	28.5	7
CHPS Zones	71.4	57.4	7
Operating Authority			
Government	74.8	40.6	51
Mission/Religious	85.1	16.5	8
Private for profit	50.1	25.0	12
Type of Provider			
Doctor	62.2	24.8	23
MA	74.7	36.2	15
Nurse	99.6	39.6	6
Midwife	73.5	40.0	15
CHN	60.0	60.0	5
Other	51.0	0.0	6
Total	70.5	34.0	71

2.8: Malaria Burden in Health Facilities

During the survey, the service statistics from facilities surveyed were also collected. These service statistics reflect the number of reported cases (both presumptive and laboratory confirmed) of malaria as collected in the Out-Patient Department and In-Patient Department (in facilities that have that capacity). A total of 45 facilities (of the 60 surveyed) were able to provide complete basic service statistics on OPD attendance and malaria cases seen between April 2007 – March 2008. Of facilities that did not provide statistics, one was a teaching hospital, one was a regional hospital, two were district level hospitals, two were health centres, three were maternity homes, four were clinics and three were CHPS zones. Also, 57.3% of them were government operated, 7.3% mission operated and 35.3% were private for profit (weighted percentages).

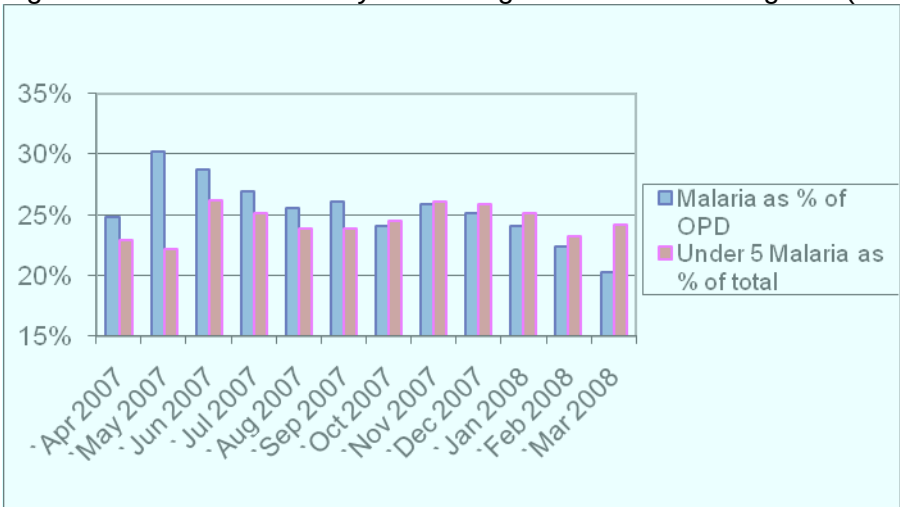
,In total, the 45 facilities reporting their service statistics, are diagnosing roughly between 21,000 – 33,000 cases of malaria a month in OPDs, with average OPD attendance ranging between 88,000 – 119,000 patients a month (Figure 2).

Figure 2: Total Burden of Malaria in Out Patient Dispensaries in Ghana – unweighted (n=45)



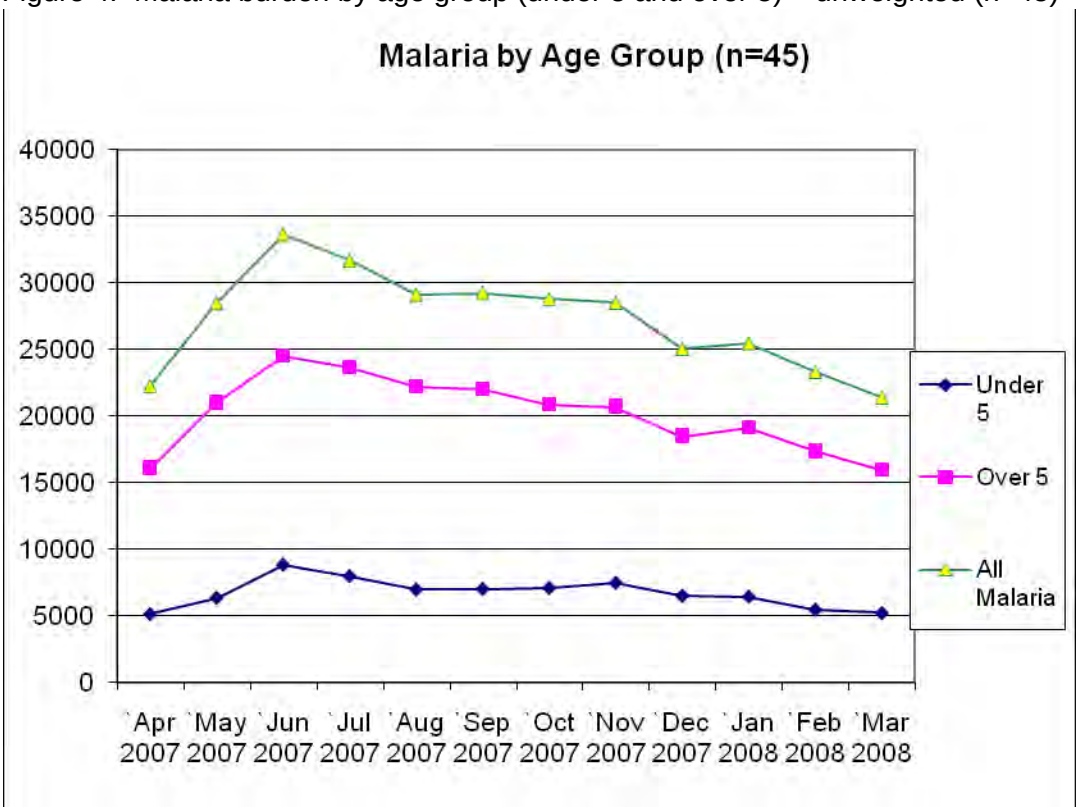
This burden of malaria in the OPDs as found during this survey, is less than what the Ghana Health Service (GHS) recently reported. Whereas malaria is reported as constituting 37.5% of the caseload in OPDs in the country (CHMS/GHS 2007), this survey found that the burden for all malaria cases ranged between 20.2% – 30.2% throughout one calendar year April 07- March 08). Of all malaria cases the burden of cases for children under five ranged between 23.0% - 26.1% for the same period (Figure 3). Since data were only collected for this one year period, comparisons with earlier time periods cannot be made for these facilities.

Figure 3: Malaria Burden by Percentage of Cases – unweighted (n=45)



May and June are the months with the highest rates of transmission in Ghana and the lowest months of transmission are February and March, which are traditionally the driest months of the year. (Figure 4).

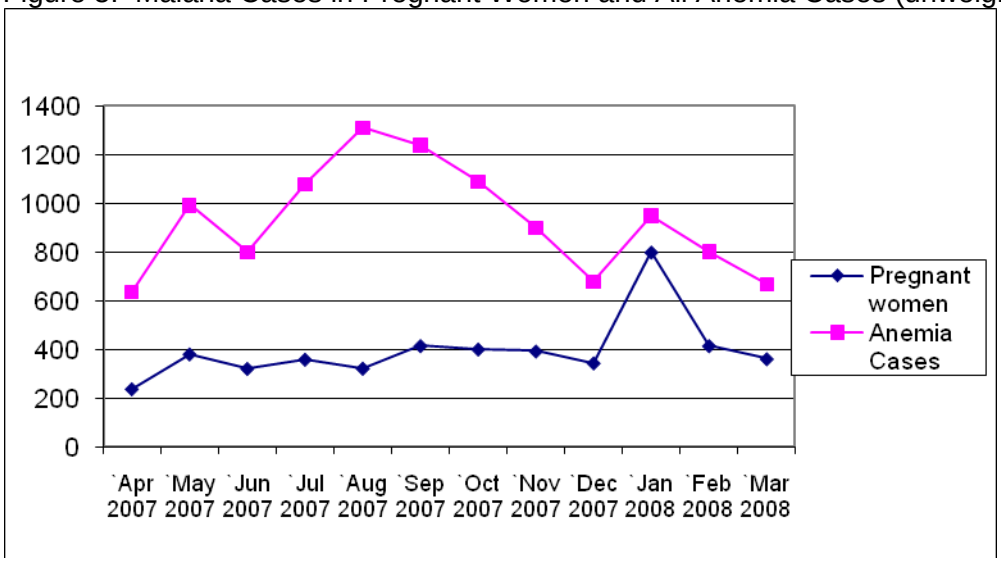
Figure 4: Malaria burden by age group (under 5 and over 5) – unweighted (n=45)



The survey also looked the number of cases of malaria diagnosed in pregnant women. There were only 32 facilities for which data were available. There was a spike in cases in January

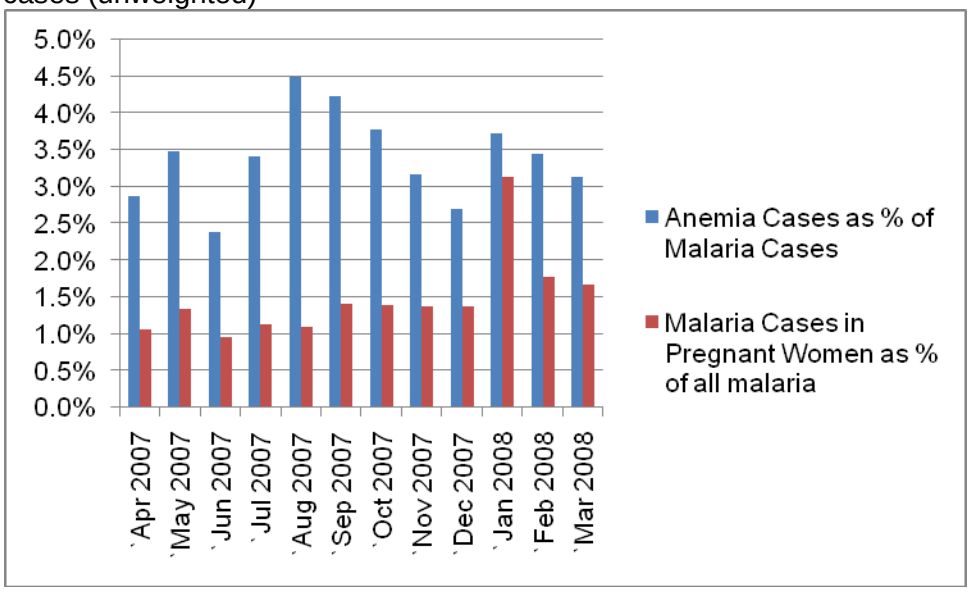
2008, but the reasons for this spike are unclear. Cases of malaria in pregnant women in these facilities as a whole average about 300 per month. The survey also collected information on the total number of anemia cases diagnosed in the facilities (all units) during each month for the past calendar year. Cases increase and peak immediately following the highest transmission months (June and July). See Figure 5 for details.

Figure 5: Malaria Cases in Pregnant Women and All Anemia Cases (unweighted) (n=32)



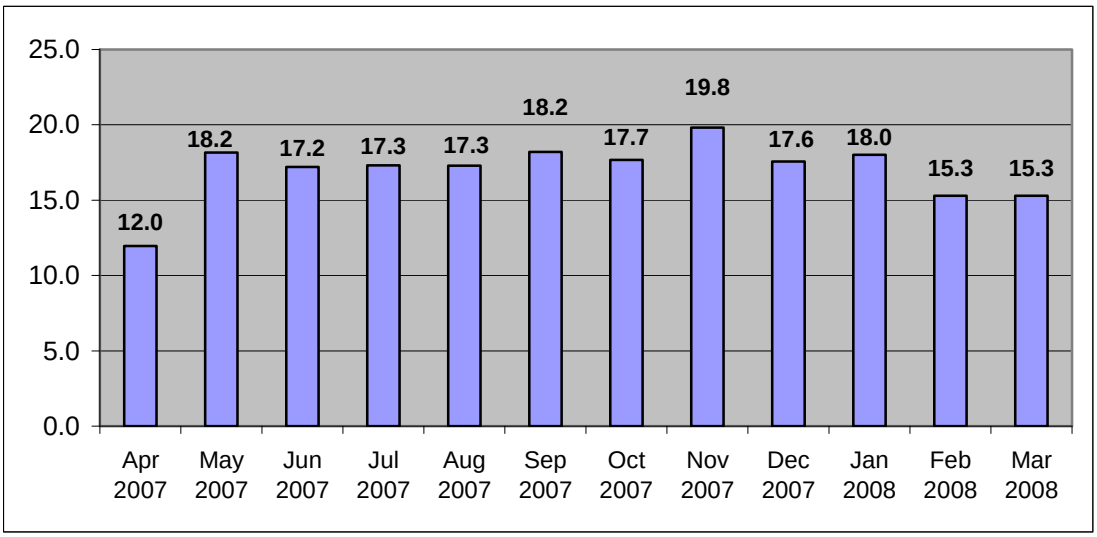
Overall the percentage of anemia cases as a percentage of the overall malaria cases remains below 5% nationwide and the percentage of malaria cases in pregnant women (from the limited data available) remain below 3% (Figure 6). However, these data must be interpreted with caution as they represent limited service statistics available at the facility level and may not necessarily correlate with actual prevalence in the community.

Figure 6: Percentage of anemia and malaria in pregnant women as percentage of all malaria cases (unweighted)



Finally the survey also looked at admissions for malaria as a percentage of the total admissions and found that malaria admissions do not have a spike following the trend in overall malaria cases, but generally remains between 17.2% - 19.8% of all admissions from May – January of each year. Between February and April of each year there is a brief lull in the percentage of cases admitted with malaria to between 12.0% - 15.9% of the total admissions (Figure 7).

Figure 7: Malaria admissions as a percentage of the overall total of admissions (unweighted) (n=13)



Recommendations

Malaria Case Management

1. While there was over diagnoses of presumptive malaria among 40% of patients in the over 5 population, approximately 42.2% of the under 5 who should have been presumptively diagnosed with malaria were not diagnosed as such. As much as practicable, prescribers should order lab tests for all malaria suspected cases in patients over 5 years to ensure that patients with other diseases are not erroneously diagnosed and treated for malaria and secondly that malaria cases do not go undetected and hence untreated.

2. Since less than 21% of cases diagnosed as having severe malaria had a laboratory diagnosis to confirm malaria at admission, it is recommended that laboratory confirmation of severe malaria for both under 5 and adults be instituted and where microscopy is not feasible, RDT's use be employed.

3. Overall, 67% of patients diagnosed with uncomplicated malaria were treated with Artesunate Amodiaquine. Physicians are the category of providers found to be least compliant with use of AS/AQ with only 48% of those observed prescribing A/A for patients diagnosed with uncomplicated malaria. NMCP in collaboration with its stakeholders should develop and disseminate key messages targeting both providers, particularly physicians, and patients to provide education and support advocacy towards increasing provider and client compliance in the use of the combination therapy.

4. Although more than 90% of nurses and midwives treating uncomplicated malaria among patients prescribed Artesunate /Amodiaquine, fewer of the patients (37% and 51% of patients seen by nurses and midwives respectively) understood treatment information provided. Training programs and facilitative supervision activities would be useful in the various health facilities to help providers impart information to different categories of patients. Also, Malaria Job Aid and Treatment Chart (for wall) should be updated as needed, printed and widely disseminated, with appropriate orientation of providers.

5. Fewer private for profit facilities (69%), compared to an overall figure of 92% of all facilities are prescribing Artesunate/Amodiaquine for the treatment of uncomplicated malaria. NMCP should collaborate with the Association of private medical practitioners to advocate and to strengthen capacity especially of private for profit facilities in treatment of uncomplicated malaria with the current treatment regimen by including them in training activities, continuing education and reporting.

6. Intensify public-private sector collaboration in malaria management generally. Advocate for intensive monitoring and facilitative supervision of private sector malaria control activities to ensure quality accurate diagnosis and treatment of cases.

Laboratory Capacity

7. Only 63.6% of facilities with lab had capacity for malaria microscopy. There is need to strengthen the capacities of the labs-particularly the regional and district hospital labs for

effective malaria diagnosis. The labs should be assisted to procure needed materials and to hire lab technicians.

8. Same day lab results were available for 24% of lab requests made. In the long term, all hospital labs should be upgraded to offer 24 hour lab services. Within the short term, the use of RDTs that are highly sensitive and user friendly should be explored, particularly when lab facilities may not be open or otherwise fully operational.

Preparedness of Health Facilities to Manage Malaria and Childhood Illnesses

9. Stock-out of co-packaged A/A was recorded in a number of facilities, especially the privately run facilities. For instance, 73% of sites overall had co-packaged AS/AQ in stock on the day they were visited, with the figure at 33% for private for-profit facilities. Considering that A/ A is the main first line drug for the treatment of malaria and also that malaria is endemic in Ghana, it is important for facilities to reduce stock-outs of AA by working to improve stock management at the facility level, as well as overall commodity security.
10. Both public and private facilities continue to stock and prescribe monotherapies. NMCP should collaborate with the national and regional medical stores to take inventory and to withdraw from all facilities monotherapies for the treatment of malaria.

11. Close to a quarter of the facilities assessed did not have copies of the standard treatment guidelines (2004). Ensure that adequate copies of policies, standards and protocols are widely distributed to all facilities including the private sector facilities, since a number of facilities did not have copies Anti-Malaria drug policy and malaria treatment chart available in the OPDs (See also # 4 above).

12. Routine health data was found to be incomplete in a number of facilities and hence reports on malaria cases were not completely available. Management of health facilities should actively take keen interest in the use of routine data for decision making, so as to identify gaps and improve data capture, collation, dissemination and storage. Poor filing systems for key data was noted in a number of facilities.

13. Strengthen data management capacity at the facility level by training and updating Health Information Officers on indicators and their definitions and how data is related to overall regional and national goals. This will go a long way to help build a reputable national health management and information system (HMIS) to guide national policy decisions.

14. Data quality assessment (DQAs) should be planned and implemented to address the gaps in data capture and utilization within the facilities. Improve Monitoring and Evaluation Capacity of the NMCP to ensure that DQAs are done periodically- at least once in a year, feedback shared with facilities involved, timelines developed to address gaps and periodic monitoring instituted to ensure that gaps are addressed..

Malaria in Pregnancy

15. Whereas 62% of pregnant women received IPT1, less than 40% of them had IPT2 and IPT3. Identify and implement strategies to improve use of IPT2 and IPT3 among

pregnant women. Distribution of doses of IPT2 and IPT3 at the community level by Community Health Nurses is a promising practice that has been identified in some districts of Ghana as a way of increasing IPT coverage in a facility- This could be explored further and up-scaled. Community Health volunteers could be useful in sensitizing women to access the services.

16. Emphasize other preventive measures of MIP apart from IPTp, ie use of ITN

17. Improve quality of counseling for case management and MIP (See also # 4 above).

18. Stock-outs of SP in facilities, especially private sector clinics and maternity homes remain fairly widespread. Reduce stock-outs of SP by improving stock management at the facility level, as well as overall commodity security.

APPENDICES

Section 1: Integrated Diseases Surveillance Response (IDSR)

Table 1A: Percentage of Facilities with Evidence of Use of Malaria Data

	% of facilities with a graph of malaria cases children <5 in last 2 qtrs of 2007	% of facilities with a graph of all malaria cases in last 2 qtrs of 2007	Total Number of facilities	% of facilities with graph of malaria deaths in last 2 qtrs of 2007	Total Number of facilities
	%	%	N	%	N
Type of Facility					
Teaching and Regional Hospitals	50.0	66.7	10	62.5	8
District and Other Hospitals	50.0	50.0	4	50.0	4
Health Centres	44.4	44.4	9	28.5	7
Clinics	39.9	20.1	5	0.0	4
Maternity Homes	50.0	50.0	2	50.0	2
CHPS Zones	0.0	0.0	3	0.0	3
Operating Authority					
Government	44.5	39.0	28	25.1	24
Mission / Religious	49.6	49.6	2	49.6	2
Private for Profit	0.0	0.0	3	0.0	2
Total Number in sample	39.1	34.8	33	25.0	28

Section 2: Laboratory

Of facilities that had labs 16 of 18 reporting maintained registers of the lab tests that they performed. However on the day of the assessment complete data were only available for blood films performed between April 2007 and March 2008 for 12 facilities (Table 2A).

Table 2A: Blood films done at the facilities between April 2007 and March 2008

	Apr 2007	May 2007	Jun 2007	Jul 2007	Aug 2007	Sep 2007	Oct 2007	Nov 2007	Dec 2007	Jan 2008	Feb 2008	Mar 2008
Total BF done (n=12)	4983	5242	5990	5993	5656	5376	6081	5489	4522	5023	5239	4908
Total Positive BF (n=12)	917	1203	1154	1382	1438	1317	1368	1114	1013	1132	997	946
Ave % positive BF (n=12)	18.4	22.9	19.3	23.1	25.4	24.5	22.5	20.3	22.4	22.5	19.0	19.3

There was only one facility in the dataset that was using RDTs. There were no data on RDTs done during the period.

Section 3: Pharmacy

Table 3A: Percentage of Facilities with Availability of Essential Medicines for Malaria

	Artesunate / Amodiaquine	Artesunate Oral	Amodiaquine Oral	SP	Co-Artem	Quinine injectable	Quinine Oral	Chloroquine Oral	Alaxin	Artemos	Dara-prim
Type of Facility											
Teaching and Regional Hospitals	83.3	75.0	70.0	83.3	36.4	66.7	83.3	33.3	45.5	41.7.	18.2
District and Other Hospitals	71.5	85.6	71.5	71.5	33.3	60.1	42.9	33.3	42.9	14.4	33.3
Health Centres	100.0	27.3	41.7	75.0	10.1	66.6	54.5	20.0	22.2	0.0	0.0
Clinics	66.6	33.4	46.7	66.6	28.6	33.0	20.0	20.0	46.7	14.3	21.5
Maternity Homes	60.1	83.2	79.9	100.0	33.5	0.0	60.1	20.1	79.9	50.0	0.0
CHPS Zones	100.0	0.0	59.9	40.1	0.0	50.0	20.1	0.0	20.1	0.0	0.0
Operating Authority											
Gov't	96.2	29.8	46.6	64.4	4.4	47.5	33.5	12.0	32.2	4.3	4.2
Mission	71.0	71.0	71.0	85.4	49.4	39.1	56.3	42.4	33.7	0.0	19.7
Private	33.1	59.3	66.3	79.4	50.5	44.1	33.1	22.8	69.6	44.4	34.2
Totals	79.0 (n=55)	43.0 (n=56)	54.5 (n=54)	71.0 (n=57)	21.2 (n=49)	45.5 (n=42)	37.2 (n=55)	19.6 (n=53)	41.4 (n=52)	44.4 (n=52)	13.3 (n=52)

Other Malarial Medicines Available at facilities included; Artemeter 300mg suspension, Arthemeter Injection, Camosunate, Chloroquine Injection (1), Halfan Syrup (1)

Table 3B: Percentage of Facilities with a stock out of Essential Medicines for Malaria since Jan '08

	Artesunate / Amodiaquine	Artesunate Oral	Amodiaquine Oral	SP	Co-Artem	Quinine injectable	Quinine Oral	Chloroquine Oral	Alaxin	Arte-Mos	Dara-prim
Type of Facility											
Teaching and Regional Hospitals	50.0	11.1	40.0	20.0	80.0	28.6	30.0	66.7	50.0	66.7	80.0
District and Other Hospitals	0.0	0.0	0.0	0.0	33.5	0.0	39.9	0.0	0.0	100.0	0.0
Health Centres	20.0	74.9	39.9	33.4	50.0	0.0	0.0	100.0	74.9	100.0	100.0
Clinics	20.0	42.9	33.4	0.0	66.7	42.9	66.7	79.9	44.4	71.5	62.5
Maternity Homes	0.0	0.0	0.0	0.0	0.0	100.0	33.5	100.0	0.0	33.5	100.0
CHPS Zones	0.0	100.0	25.1	50.0	0.0	0.0	100.0	100.0	66.7	100.0	100.0
Operating Authority											
Gov't	13.3	57.7	28.6	26.2	85.7	18.7	46.4	99.3	57.1	99.4	85.9
Mission	0.0	0.0	25.5	0.0	34.3	50.9	34.3	0.0	0.0	100.0	50.9
Private	25.8	25.8	14.8	0.0	39.9	24.1	39.7	65.9	13.0	42.9	39.3
Totals	13.6 (n=40)	39.3 (n=32)	24.3 (n=35)	16.2 (n=41)	60.5 (n=25)	23.8 (n=24)	43.1 (n=31)	77.6 (n=15)	39.4 (n=29)	71.7 (n=29)	64.5 (n=29)

Section 4: Patient Observations and Re-examinations

Table 4A: Percentage Patients y Reasons given for visiting facility

Reason	Under 5	Over 5
Fever	74.5	28.0
Diarrhoea	23.2	4.8
Vomiting everything	23.2	1.0
Cough, difficult breathing	23.5	9.6
Ear problem	2.1	2.6
Skin problem	18.5	5.8
Total Number	n=131	n=322

Table 4B: Percentage of providers who asked about key symptoms for those presenting with fever - by age of patient

Symptom	Under 5	Over 5
Unable to eat or drink	44.0	37.9
Vomiting everything	45.3	14.1
Convulsions	7.6	5.5
Fever	41.2	63.3
Headache	3.9	56.8
Joint Pain	2.6	20.3
Difficult breathing/cough	58.2	35.5
Chills	4.3	14.1
Little or no urination in past 24 hours	0.9	4.6
Dark Urine	0.0	3.1
Abnormal bleeding	0.0	2.4
Difficult or painful urination	1.0	1.6
Diarrhea or abdominal pain	44.0	47.0
Bloody stools	29.1	4.1
Ear Pain	10.0	1.0
Total Numbers	n=98	n=87

Table 4C: Percentage of Providers who asked all danger signs in children under 5

Symptom	% who asked	% who are trained in IMCI
Unable to eat or drink	38.0	42.5
Vomiting everything	39.2	43.8
Convulsions	6.3	4.0
Fever	49.0	46.8
Asked all 4 above	2.0	4.0
Total number	n=134	n=116

Table 4D: Percentage of providers who performed the following examinations

Examination	Under 5	Over 5
Take temperature or refer to where it is written on card	91.4	81.8
Weigh patient or refer to written weight	84.1	64.4
Take blood pressure	0.9	63.3
Take pulse (for 60 seconds)	7.4	10.9
Check for anemia (palmor pallor)	47.9	27.2
Check for visible severe wasting	11.7	-
Count respiratory rate (for 60 seconds)	7.2	12.9
Check for dehydration (skin pinch)[1]	10.6	-
Check for lethargy	3.2	-
Check immunization status	9.6	-
Totals	n=134	n=322

[1] Note: 10.6% of providers checked for dehydration in all patients observed and re-examined. However, 31.1% of providers checked for dehydration for patients under 5 whose reason for visiting the facility was diarrhea.

Table 4E: Percentage of providers who counseled patients

	All Patients Observed and Re-examined		All patients diagnosed of malaria by provider at facility	
Counselling Topic	Under 5	Over 5	Under 5	Over 5
Provide general information on feeding or breastfeeding	24.7		21.8	
Give extra fluids to patient during this illness	11.5		10.6	
Continue feeding / eating during this sickness	13.4		11.9	
Proper management of fever (sponging and paracetamol)	7.5		8.7	
Tell patient/caregiver what illness patient has	10.0	21.5	10.3	18.5
Talk to caregiver/patient about ITN use	12.1	5.0	14.2	8.5
Describe signs or symptoms in patient that they should return to the facility	23.2	20.9	26.0	18.6
If medicines are prescribed – tell patient how to take the medicine	27.9	24.8	27.0	24.8
If medicines are prescribed give the patient the first dose.	20.0		22.6	
Totals	n=134	N=322	n=88	n=163

Table 4F: Percentage of Providers using lab tests

	All patients		Patients diagnosed with malaria	
	Under 5	Over 5	Under 5	Over 5
Provider ordered lab tests	14.1	22.6	13.2	28.3
Provider did not order tests	85.9	77.4	86.8	71.7
Totals	n=131	N=319	n=86	n=162

Table 4G: Percentage of Patients diagnosed with malaria
for whom lab tests were ordered by type of test and the results

	Diagnosed with malaria	
	Under 5	Over 5
Provider ordered lab tests	13.2 (n=88)	28.3 (n=163)
Hematocrit <15%	0.0 (n=13)	0.0 (n=26)
HB <5g/dl	0.0 (n=13)	3.9 (n=26)
Parasitimia + or more	0.0 (n=13)	13.0 (n=26)

Table 4H: Percentages of Patient Knowledge about How Malaria is Transmitted

	Mosquitoes / Mosquito bites	Insects (no mosquitoes mentioned)	Through the sun	Juju/Sorcery	Eating Certain Foods	Don't Know	Number of patients
Diagnosed with malaria	75.2	0.0	6.8	28.4	9.9	15.4	249
Not Diagnosed with malaria	68.7	1.2	8.4	36.7	13.3	14.1	197
Totals	72.4	0.5	7.5	32.0	11.4	14.9	446

Table 4I: Percentages of Patient Knowledge on how Malaria is Prevented

	Sleep under a net	Sleep under impregnated net	Give a drug	Use insecti-cide	Use coils or repellants	Use trad. Means	Prevent Mosq bites	Avoid fatigue	Don't Know	Number of patients
Diagnosed with malaria	52.1	14.5	2.9	10.1	9.8	1.8	4.4	0.3	12.1	248
Not Diagnosed with malaria	48.5	20.2	3.1	10.5	8.4	0.0	2.7	0.0	12.1	197
Totals	50.5	17.0	3.0	10.3	9.2	1.0	3.7	0.2	12.1	445

Table 4J: ITN Ownership, Use and Health Worker Interaction on ITNs

	Health worker talked to patient about ITN today	Patient has an ITN in the home	Number of Patients (n)	Patient slept under ITN last night	Number of Patients (n)
Diagnosed with malaria	11.2	59.3	224	53.4	158
Not Diagnosed with malaria	1.5	50.2	187	38.8	109
Under 5	10.1	77.3	138	58.8	105
Over 5	5.5	47.5	320	44.3	165
Totals	6.6	54.5	458	48.9	270

Section 5: Provider Knowledge on Treatment and Management of Malaria

Response and data in this section of the appendices are based on answers provided during the provider interview and may differ from the actual practice of provider reported in earlier sections of the report. This section reflects what providers say they do and may not reflect actual practice.

Table 5A: Percentage of Drugs providers say they commonly prescribe for treating uncomplicated malaria

	Type of drugs									Number of Providers
	Artesunate / Amodiaquine	Artesunate Only	Amodia-quine Only	SP Only	Chloro-quine Only	Co-Artinate	Co-Artem	Alaxin	Quinine	
Type of Facility										
Teaching and Regional Hospitals	80.0	15.0	5.0	0.0	0.0	10.0	45.0	10.0	25.0	20
District and Other Hospitals	71.5	14.4	28.5	0.0	0.0	14.4	0.0	28.5	0.0	7
Health Centres	100.0	0.0	15.4	15.4	0.0	7.8	0.0	15.4	23.1	13
Clinics	73.3	20.0	33.4	14.3	0.0	7.8	0.0	46.7	0.0	15
Maternity Homes	83.2	28.5	50.0	33.3	0.0	0.0	16.8	66.7	33.3	6
CHPS Zones	100.0	0.0	0.0	14.3	0.0	0.0	0.0	14.3	14.3	7
Operating Authority										
Govt	99.8	3.3	19.2	12.8	0.0	6.6	0.5	23.3	12.9	10
Mission	80.1	17.1	33.9	0.0	0.0	0.0	0.0	29.0	0.0	50
Private	44.8	33.4	35.9	27.1	0.0	9.4	8.9	63.2	17.7	11
Type of Provider										
Doctor	50.7	13.0	0.2	12.4	0.0	12.8	1.5	37.0	0.6	23
MA	89.7	20.4	30.3	21.9	0.0	21.9	0.4	27.5	22.1	13
Nurse	100.0	20.1	20.1	0.0	0.0	0.0	0.0	0.0	0.0	6
Midwife	86.7	6.5	33.2	19.8	0.0	0.0	7.0	57.0	19.6	15
CHN	100.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	5
Other	100.0	16.3	59.6	20.2	0.0	0.0	0.0	19.5	0.0	6
Provider Training										
Provider had refresher training in malaria in last 3 years	91.3	11.2	20.0	17.0	0.0	5.8	0.3	25.7	14.1	68
Totals	85.3	12.3	24.8	14.7	0.0	6.6	2.5	33.2	12.7	68

Table 5B: Percentage of Providers Who Use Artesunate / Amodiaquine for Treatment of Malaria

	Always prescribe A/A	Often / Sometimes prescribe A/A	Rarely prescribe A/A	Never prescribe A/A	Number of providers
Type of Facility					
Teaching and Regional Hospitals	45.0	40.0	5.0	10.0	20
District and Other Hospitals	71.3	14.4	14.4	0.0	7
Health Centres	84.6	15.4	0.0	0.0	13
Clinics	58.7	17.7	17.7		17
Maternity Homes	57.1	42.9	0.0	0.0	7
CHPS Zones	85.7	14.3	0.0	0.0	7
Operating Authority					
Govt	87.2	12.7	0.1	0.0	51
Mission	56.9	14.6	28.5	0.0	8
Private	32.7	41.6	17.1	8.6	12
Type of Provider					
Doctor	37.3	37.3	12.2	12.8	23
MA	82.8	0.3	16.9	0.0	15
Nurse	100.0	0.0	0.0	0.0	6
Midwife	80.1	13.1	6.9	0.0	15
CHN	80.0	20.0	0.0	0.0	5
Other	33.9	66.1	0.0	0.0	6
Provider Training					
Had refresher training in malaria in last 3 years	74.7	16.8	8.4	0.0	71
Totals	70.3	19.7	8.0	2.1	71

Table 5C: Percentage of Providers – Reasons Why prescribers do not prescribe the nationally mandated first line treatment for uncomplicated malaria – Artesunate/Amodiaquine.

	Fear of Adverse Reaction	Experience of patient	Other	Number of Providers (n)
Type of Facility				
Teaching and Regional Hospitals	33.3	0.0	66.7	3
District and Other Hospitals	100.0	0.0	0.0	2
Health Centres	-	-	-	-
Clinics	66.7	100.0	33.3	3
Maternity Homes	-	-	-	-
CHPS Zones	-	-	-	-
Totals	79.3	60.2	20.7	8

Table 5D: Percentage of Providers by practice of ordering laboratory tests

	Providers routinely order lab tests	Number of Providers	Orders Blood Film for Malaria Parasites	Orders Hemoglobin	Number of Providers
Type of Facility					
Teaching and Regional Hospitals	70.0	20	100.0	85.7	14
District and Other Hospitals	28.5	7	100.0	100.0	2
Health Centres	15.4	13	100.0	100.0	2
Clinics	43.8	16	100.0	100.0	7
Maternity Homes	50.0	6	100.0	100.0	3
CHPS Zones	0.0	7	-	-	-
Operating Authority					
Government	22.5	51	100.0	99.8	20
Mission	40.0	6	100.0	99.1	3
Private	41.6	12	100.0	100.0	5
Provider Training					
Refresher Training in Malaria in last 3 years	26.6	69	100.0	99.8	28
Totals	28.9	69	100.0	99.7	28

Table 5E: Percentage of Provider by practice of diagnosing severe malaria – Signs or Conditions Used for Diagnosis - Unprompted

	Hyper-parasitemia	Altered Consciousness	Convulsions	Hypo-glycemia	Difficult Breath-ing or pulmonary Oedema	Reduced Urine Output	Severe Anemia	Circulatory Collapse or Shock	Electrolyte Imba-lance	Jaundice	Hyper-pyrexia	Prostration	Number of provi-ders
Type of Facility													
Teaching and Regional Hospitals	35.0	30.0	70.0	5.0	10.5	40.0	80.0	15.8	10.5	45.0	65.0	75.0	20
District and Other Hospitals	57.1	71.5	85.6	0.0	0.0	14.4	71.5	14.4	0.0	14.4	100.0	71.5	7
Health Centres	7.8	30.7	61.5	0.0	15.4	23.1	15.4	15.4	7.8	0.0	92.2	76.9	13
Clinics	6.7	40.0	37.5	25.0	6.7	23.5	41.2	0.0	0.0	33.4	88.2	43.8	15
Maternity Homes	0.0	28.5	28.5	0.0	0.0	0.0	57.1	14.4	0.0	0.0	42.9	71.5	7
CHPS Zones	0.0	28.6	71.4	0.0	14.3	14.5	14.3	0.0	0.0	0.0	71.4	71.4	7
Operating Authority													
Governmen t	9.9	38.6	58.0	3.3	12.9	19.0	34.9	6.5	3.2	7.0	90.4	65.6	50
Mission	32.8	66.4	85.1	14.6	0.0	28.5	56.9	16.5	0.3	33.3	99.8	66.1	7
Private	8.6	25.0	25.3	17.1	0.0	8.6	33.0	8.2	0.0	17.1	50.8	58.0	12
Type of Provider													
Doctor	49.3	61.3	74.9	12.6	0.4	25.7	26.1	12.4	0.2	35.7	86.3	49.7	23
MA	10.1	59.9	72.2	18.5	0.0	25.3	50.4	19.7	0.2	0.2	91.3	64.0	14
Nurse	20.1	39.6	39.9	6.9	20.0	20.3	39.9	0.4	0.0	0.0	100.0	79.9	15
Midwife	0.0	26.6	39.6	6.9	20.0	20.0	33.6	6.5	6.6	20.5	80.4	79.8	5
CHN	0.0	20.0	80.0	0.0	20.0	20.3	20.0	0.0	0.0	0.0	60.0	60.0	6
Other	0.0	17.2	17.2	0.0	0.0	0.0	49.6	0.0	0.0	17.2	67.5	33.0	6
Provider Training													
Had malaria refresher training last 3 years	11.0	38.8	52.6	8.5	8.4	19.6	30.8	11.0	0.0	14.2	89.0	63.6	69
Totals	12.4	38.7	54.0	8.2	8.2	17.9	37.5	8.1	2.1	12.7	82.4	63.9	69

*No providers mentioned using acidosis as a way to diagnose severe malaria.
** 6.2% of provider mentioned spontaneous bleeding as a way to diagnose severe malaria.

Table 5G: Percentage of Prescribers that Knew the Correct Treatment Drugs for Severe malaria - Unprompted

	Quinine Injection	Quinine Tablets	Artesunate Alone	Amodia-quine Alone	SP	Co-artinate	Co-Artem	Chloroquine	Number of Providers
Type of Facility									
Teaching and Regional Hospitals	75.0	20.0	5.0	0.0	0.0	5.0	5.0	0.0	20
District and Other Hospitals	28.5	16.8	0.0	0.0	0.0	0.0	0.0	14.4	7
Health Centres	23.1	7.8	15.4	15.4	0.0	0.0	0.0	0.0	13
Clinics	25.0	6.7	6.7	0.0	0.0	0.0	6.7	6.7	15
Maternity Homes	28.5	0.0	14.4	14.4	0.0	14.4	14.4	0.0	7
CHPS Zones	14.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7
Operating Authority									
Govt	25.6	6.5	6.4	6.3	0.0	0.0	0.1	3.3	50
Mission	49.4	20.4	0.0	0.0	0.0	0.0	0.0	0.0	7
Private	8.2	0.0	16.7	8.2	0.0	0.0	16.7	8.3	12
Type of Provider									
Doctor	14.3	0.5	12.6	0.0	0.0	0.0	12.6	12.0	23
MA	45.7	20.2	9.9	0.0	0.0	0.0	0.0	0.0	14
Nurse	39.9	20.5	0.0	0.0	0.0	0.0	0.0	0.0	15
Midwife	20.2	0.0	6.6	13.2	0.0	0.0	0.0	6.9	5
CHN	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6
Other	0.0	0.0	16.4	16.3	0.0	0.0	16.3	0.0	6
Provider Training									
Provider had refresher training in last 3 years	27.8	8.6	2.7	2.7	0.0	0.0	0.0	2.8	69
Totals	24.3	6.4	8.1	5.9	0.0	0.0	4.1	4.1	69

Section 6: Ante-Natal Care and Malaria

Table 6A: Percentage of Facilities with ANC services and their organization

	% with daily ANC Services*	% offering FANC	% offering Adequate Lab Services**	% with functioning weighing scale	% with functioning BP apparatus	% with ANC Register	% with current ANC Record Entry$\mathcal{O}$
Type of Facility							
Teaching and Regional Hospitals	66.6	25.0	91.7	91.7	100.0	90.9	80.0
District and Other Hospitals	33.4	0.0	57.1	83.2	83.2	100.0	100.01
Health Centres	72.7	90.8	0.0	90.8	90.8	100.0	89.9
Clinics	62.8	85.8	14.3	100.0	100.0	100.0	85.5
Maternity Homes	66.0	67.0	16.6	100.0	100.0	83.4	100.0
CHPS Zones	100.0	100.0	0.0	100.0	100.0	100.0	74.9
Operating Authority							
Govt	68.2	74.7	10.2	92.0	92.2	99.9	86.8
Mission	50.0	50.9	32.6	100.0	100.0	100.0	100.0
Private	66.0	60.1	20.1	100.0	100.0	83.4	100.0
Totals	65.7 (n=47)	69.5 (n=45)	15.2 (n=59)	94.1 (n=46)	94.2 (n=46)	97.1 (n=45)	90.4 (n=42)

* 5 days or more
** Blood mps, Hb and urine analysis
$\mathcal{O}$ Record entry within the past 7 days

Table 6B: Percentage of Facilities by Type of SP in Stock

Facility type	Fansidar	Malafan	Other	Number of facilities
Teaching and Regional Hospitals	30.0	20.0	50.0	10
District and Other Hospitals	0.0	16.8	83.2	6
Health Centres	0.0	30.0	70.0	10
Clinics	43.0	14.4	42.5	7
Maternity Homes	33.0	33.0	33.9	6
CHPS Zones	25.0	50.0	25.0	4
Totals	18.4	27.2	54.5	43

Table 6C: Percentage of Facilities by Action When there is a Stock out

Facility type	Write a prescription	Nothing	Other	Number of facilities
Teaching and Regional Hospitals	20.0	40.0	40.0	5
District and Other Hospitals	0.0	50.0	50.0	2
Health Centres	20.1	20.1	59.9	5
Clinics	33.5	0.0	66.5	3
Maternity Homes	32.9	0.0	67.1	3
CHPS Zones	0.0	33.3	67.7	3
Totals	18.7	18.9	62.4	21

Of 59 facilities, 87.9% provide SP for free. Of the 5 facilities charging for SP, 1 is a government facility, 1 is a mission facility and 3 are private facilities.

Section 7: Instruments and Protocols for the Malaria Health Facility Survey

Instrument	# completed per facility	Person completing instrument	Methodology Inclusion / Exclusion Criteria
A-1. Malaria Health Facility Audit	1	Auditor	All facilities completed the facility audit in full, except where skip patterns indicated a section may be skipped
A-2 Patient Observation Form	ALL in selected consulting room	Observer	Random selection of consulting room in the OPD (or in a teaching hospital – the polyclinic). Observed ALL patient consultations from the first consultation to 2:00 PM
A-3 Provider Interview Tool	1 -2	Observer	Only the provider observed was interviewed
A-4 Re-examination of patient and Client Exit Interview	ALL from selected consulting room	Re-Examiner	All patients observed above.
A-5 Assessment of Cases with Severe Malaria	5	Auditor	Listed all patients currently admitted for severe malaria. Where less than five – observed all. Where more than five – randomly selected five patients.
A-6 Laboratory Quality Control Tool	ALL from the selected consulting room where the provider ordered lab tests in patients	Auditor sets up the process and monitors it throughout the day.	All patients who had lab work ordered by provider –second slide taken.
B-1 ANC Facility Audit	1	Midwife	All facilities completed audit section. For record review, determined how many patients had been seen between Oct 2007-Mar 2008. Divided the total number of consultations by 10. Then used this sampling interval to select records starting in Oct 2007 to Mar 2007 until 10 records were reviewed.
B-2 ANC Observation and Client Exit Interview Tool		Midwife	Random selection of consulting room done. Selection of ANC Clients: Sample of convenience – next woman was seen. Observed all consultations of the selected provider between 9:00 AM and 2:00 PM on the day of the assessment. Selection of providers: Randomly selected one provider from all the providers giving service on the day of the assessment.

Section 8: National Malaria Health Facility Survey Tools

A-1: Malaria – Health Facility Audit

FACILITY IDENTIFICATION	
Name of Region: _____`	FACILITY CODE ☐☐☐☐☐☐
Name of District: _____	
Name of the facility_____	
TELEPHONE: _____	
Interviewer Name: _____	FACILITY TYPE ☐
Date: _____	OPERATING AUTHORITY ☐
Type of Health Facility : (1 = Teaching Hospital 2=Regional hospital; 3 = District Hospital; 4=Other Hospital 5=Polyclinic 6=Health Center 7= Maternity Home 8=Clinic 9=CHPS 10=RCH Unit 11=Other _____)	
Operating Authority: 1= Government; 2=Mission/Religious 3 = Private for profit 4=Quasi-Government 5 = Other _____)	

1. General Information

NO.	QUESTIONS	CODE CLASSIFICATION	GO TO
100	FOR OUTPATIENT SERVICES: FIND THE MANAGER OR MOST SENIOR HEALTH WORKER WHO IS PRESENT AT THE FACILITY. INTRODUCE YOURSELF AND READ THE FOLLOWING: I am representing the Ghana Health Service and the Quality Health Partners Project for this survey. We are conducting research that will help us to understand the health service situation for malaria services. This information will be used to design programs to improve these services. The survey will assess case management of malaria and also assess services for malaria in pregnancy. The tools include facility audit, observation of care and exit interview and collection of service statistics. This part of the survey will ask questions about the services offered at this facility, the equipment that is available and staffing levels. It may take up to half a day to complete this part of the survey. All information from this survey is confidential and participation in answering questions for this survey is voluntary. You can refuse to answer any question or all the questions. There is no risk to you or your facility for participation. The results will be used to plan programming that may benefit your facility. We are asking for your help to ensure that the information collected is accurate. If there are sections where someone else is the most appropriate person to provide information, we would appreciate your introducing us to that person. Do you have any questions for me? Can you please sign the line below and put the date? 100 _____ _____ Signature of the interviewee indicates that consent was obtained Date		
101	Is there a trained health provider present at the facility at all times (24 hours/day)	YES, TRAINED PROVIDER ALWAYS PRESENT .....1 NO, NOT ALWAYS PRESENT..2 NO, NO TRAINED PROVIDER .3	
102	Is there a trained health provider available on call at all times after normal working hours? IF YES, ASK TO SEE A CURRENT DUTY ROSTER	YES, DUTY SCHEDULE SEEN 1 YES, NO DUTY SCHEDULE.... 2 NO 3	

103	Now I have some questions about the staff. We want to know the number of staff who are **routinely assigned to provide services for sick people, including for malaria**. This may include staff who provide both inpatient and outpatient services but **NOT** staff who function purely administratively. **COUNT STAFF IN ONLY ONE CATEGORY. DO NOT INCLUDE STAFF ON STUDY LEAVE.**		
	QUALIFICATION	**TOTAL NUMBER**	
	A) Medical Doctors	MEDICAL DOCTOR	
	B) Medical Assistants	MEDICAL ASST	
	C) Public Health Nurses	PH NURSE	
	D) Midwives	MIDWIFE	
	E) SRN	PROF. NURSE	
	F) Community Health Nurses	CHN	
	G) Enrolled Nurses	EN	
	H) Ward Assistants / Ward Maid	WA	
	I) Pharmacists	PHARMACIST	
	J) Dispensing Technologists	DISPENSING TECH 1	
	K) Dispensing Technicians	DISPENSING TECH 2	
	L. Dispensing Assistants	DISPENSING Assist	
	M) Lab Technicians		
	N) Laboratory Assistants		
	Now I have some questions about the staff that do field work and process data about malaria. We want to know the number of staff who are routinely assigned to disease control and malaria monitoring		
	O) Technical Officer/Field Technicians (Disease Control)	DCO	

P). Biostatistician / Records Officer	BIOSTATS ☐☐
Are there any other staff who routinely provide malaria-related services who were not counted above?	
Q) Others: SPECIFY _____ _____ _____	OTHER ☐☐

NO.	QUESTIONS	CODE CLASSIFICATION	GO TO
104	Does this facility have formal meetings to review management or administrative issues?	YES.....1 NO .....2 DON'T KNOW.....8	 ➔107 ➔107
105	How often are formal meetings held to discuss general management/administrative issues?	WEEKLY……..1 MONTHLY .....2 QUARTERLY.....3 SEMI-ANNUALLY.....4 OTHER_____ ...5	
106	Is an official record of meetings maintained? **IF YES, ASK TO SEE SOME DOCUMENTATION (MINUTES/NOTES) FROM THE MOST RECENT MEETING**	YES, DOCUMENT SEEN .....1 YES, DOCUMENT NOT SEEN .....2 NO DOCUMENTATION MAINTAINED.....3	
107	Does this facility have any system for determining client opinion about the health facility or services? **IF YES, CIRCLE ALL METHODS FOR ELICITING CLIENT OPINIONS THAT ARE USED** **IF NO CLIENT FEEDBACK CIRCLE '7'**	SUGGESTION BOX .....1 CLIENT SURVEY FORM.....2 CLIENT INTERVIEW .....3 COMMUNITY DURBAR……..4 PUBLIC FORUM……..5 OTHER _____ .....6 (SPECIFY) NO CLIENT FEEDBACK .....7 DON'T KNOW.....8	
108	Does this facility have a Quality Assurance Team?	YES.....1 NO .....2 DON'T KNOW.....8	 ➔110 ➔110
109	Does the team have a Quality Assurance Action Plan? **IF YES, ASK TO SEE THE PLAN OR EVIDENCE OF RECENT ACTIVITY**	YES, PLAN SEEN .....1 YES, NO PLAN SEEN .....2 NO 3	

NO.	QUESTIONS	CODE CLASSIFICATION	GO TO
110	When was the last time a supervisor from **OUTSIDE** this facility came for a supervisory visit?	WITHIN PRIOR 6 MONTHS .....1 MORE THAN 6 MONTHS AGO…2 NEVER SUPERVISED FROM OUTSIDE FACILITY 3	➔111 ➔112 ➔112

		YES	NO	DK
111	Within the past 6 months did a supervisor from outside the facility on a visit do any of the following activities?			
	A) Check some registers or service related books?	CHECKED REGISTERS 1	2	8
	B) Discuss problems?	DISCUSSED PROBLEMS.....1	2	8
	C) Discuss policy/administrative issues?	DISCUSSED POLICY...1	2	8
	D) Discuss technical protocols, practices, or service delivery technical issues?	DISCUSSED TECHNICAL ISSUES ...1	2	8
	E) Hold an official staff meeting?	HELD STAFF MEETING 1	2	8
	F) Observe individual staff providing services?	OBSERVE SERVICE PROVISION.....1	2	8
	G) Do anything else?	OTHER_____1	2	8

112	Is there a printed referral form which is sent with referrals from this facility? IF YES, ASK TO SEE THE FORM. (IF THE FACILITY IS THE REFERRAL FACILITY, THEN CIRCLE "5" FOR REFERRAL FACILITY).	YES, FORM SEEN .....1 YES, FORM NOT SEEN.....2 NO FORM, USE LETTERHEAD.....3 NO FORM.....4 REFERRAL FACILITY.....5 DON'T KNOW.....8	
113	If a decision is made to refer a patient to a higher level facility, what means of transportation is available CIRCLE ALL THAT APPLY	An ambulance……1 A taxi……2 Private Vehicles ……3 Other……4_ _____specify	

114	Does this facility have electricity?	YES……1 NO……2	➔116
115	Is the electricity always available during times when the facility is providing services or is it sometimes interrupted?	ALWAYS AVAILABLE……..1 SOMETIMES INTERUPPTED….2 OFTEN INTERUPPTED…….3	

FOR EACH OF THE FOLLOWING ITEMS, CHECK WHETHER THE ITEM IS PRESENT AT THE FACILITY. IF YOU ARE NOT ABLE TO OBSERVE THE ITEM YOURSELF, ASK IF THE ITEM IS AVAILABLE. WHERE APPLICABLE, ASK IF THE ITEM IS IN WORKING ORDER OR NOT

	ITEM	**a) Is the item present?**			b) Is the item in working order?		
		Observed / RA	Not Available	Not Determined	Yes	No	Not Deter-mined
116	Generator	1	2➔118	8➔118	1	2	8
117	Fuel for generator	1	2	8			

NO.	QUESTIONS	CODE CLASSIFICATION	GO TO
118	What is the most commonly used source of water for the facility at this time of the year?	PIPED……1 PROTECTED WELL/BOREHOLE...2 UNPROTECTED WELL……..3 RIVER/LAKE /POND…….. …..4 OTHER_____ __6 (SPECIFY) NO WATER SOURCE ….9	
119	Is this water source available on-site?	YES, ON-SITE ..... 1 NO 2	
120	How is water made available for use in examination/consultation areas in the facility today? CIRCLE ALL THAT APPLY	PIPED ..... 1 BUCKET/BASIN ..... 2 VERONICA BUCKET ..... 3 NO WATER PROVIDED IN SERVICE DELIVERY AREAS..... 4	
121	Is there a waiting area for clients, where they are protected from sun and rain?	YES..... 1 NO 2	
122	Is there a toilet (latrine) in functioning condition, which is available for clients' use?	YES..... 1 NO 2	
123	Is there cell phone or landline reception at this facility? If so on what networks? CIRCLE ALL THAT APPLY	No reception and no landline……1 MTN……2 One Touch……..3 Kasapa……4 Tigo……..5 Landline available……6 Radio phones (Motorola)……7 Other……8	

124	Is the new combination therapy Artesunate/Amodiaquine being used to treat sick children at this facility?	YES……1 NO……..2 DON'T KNOW8	 ➔ 128 ➔ 128
125	IF YES, What is the dosage for a child that weighs 20 kgs? (Answer Artesunate 4mg/kg (80mg) and Amodiaquine 10mg/kg (200 mg) for 3 days given in two divided doses.	CORRECT……1 NOT CORRECT…..2	
126	How many staff have been trained in the use of the new malaria drug policy in this facility?	Don't Know = 98	
127	How many providers treat sick children at this facility?	Don't Know = 98	
128	How many providers at this facility have been trained in IMCI?	Don't Know = 98	

2. OPD Services

NO.	QUESTIONS	CODE CLASSIFICATION	GO TO
200	**Does this facility offer OPD services or curative services for malaria?**	**Yes----------1** **No----------2**	➔200b ➔300

FIND THE MANAGER OR MOST SENIOR HEALTH WORKER RESPONSIBLE FOR **OPD SERVICES** WHO IS PRESENT AT THE FACILITY. INTRODUCE YOURSELF AND READ THE FOLLOWING:

I am representing the Ghana Health Service and the Quality Health Partners Project for this survey. We are conducting research that will help us to understand the health service situation for malaria health services. This information will be used to design programs to improve these services. This part of the survey will ask questions about the services offered at this facility, the equipment that is available and staffing levels. It will take between 20-30 minutes to complete. All information from this survey is confidential and participation in answering questions for this survey is voluntary. You can refuse to answer any question or all the questions.

We are asking for your help to ensure that the information collected is accurate. If there are sections where someone else is the most appropriate person to provide information, we would appreciate your introducing us to that person.

Do you have any questions for me?

Will you participate in this survey? If Yes, ask the person to sign the line below.

200a

SIGNATURE OF INTERVIEWEE INDICATES AGREEMENT TO PARTICIPATE

NO.	QUESTIONS	CODING CLASSIFICATION			GO TO
201	**Now, I would like to ask you specifically about OPD services for children and adults. For each of the following services please tell me if the service is offered by your facility, and if yes, how many days per week the service is provided AT THE FACILITY**				
	HEALTH SERVICES	# Days per week service provided **at facility**	Service only provided as outreach	Service not offered	
	a). Consultation / curative care services for sick children under 5?	_____ DAYS	11	95	
	b). Consultation / curative services for the Sick patient 5 years and above?	_____ DAYS	11	95	IF BOTH 95 ➔ 300

ASK TO SEE WHERE CONSULTATION SERVICES FOR PATIENTS ARE OFFERED, AND EXPLAIN THAT YOU WANT TO ASK ABOUT AND SEE SOME OF THE MATERIALS USED FOR PROVIDING CURATIVE SERVICES . ASK TO SEE EACH OF THE FOLLOWING ITEMS. THE ITEMS SHOULD BE IN THE ROOM, OR IN AN IMMEDIATELY ADJACENT ROOM TO BE COUNTED AS PRESENT.

202	ITEMS REQUIRED FOR CONSULTATION SERVICES FOR SICK CHILDREN	(a) Is item present?			(b) Is item in working order?		
	Supplies	Observed	Not Available	ND	Yes	No	ND
	a) Hand-washing Items (soap)	1	2	8			
	b) Single use towels	1	2	8			
	c) Water for hand-washing	1	2	8			
	d) Alcohol Hand Wash						
	e) Infant Scale	1	2	8	1	2	8
	f) Child Scale	1	2	8	1	2	8
	g) Adult Weighing Scale	1	2	8	1	2	8
	h) Thermometer	1	2	8	1	2	8
	i) Timer/Watch with second hand	1	2	8	1	2	8
	j) Jar/Pitcher for ORS	1	2	8			
	k) Cup and spoon	1	2	8			

203	**REFERENCES/ PROTOCOLS/ TEACHING MATERIALS**	Observed	Not Available	ND
	a) Standard Treatment Guidelines 2004	1	2	8
	b) Anti-Malaria Drug Policy for Ghana	1	2	8
	c) IMCI CHART BOOKLET	1	2	8
	d) Malaria Counseling Chart	1	2	8
	e) Malaria treatment chart	1	2	8
	f) Other visual aids for teaching caretaker	1	2	8

204	Is there a **ROUTINE** system where sick children are measured/weighed/assessed <u>prior</u> to the consultation for the illness?	YES .....1 NO .....2 DON'T KNOW 8	→205 →206 →206

205	**IF YES, ASK TO SEE WHERE SICK CHILDREN ARE SEEN PRIOR TO THE CONSULTATION AND INDICATE WHICH OF THE FOLLOWING ACTIVITIES ARE ROUTINELY CARRIED OUT THERE.**				
	PART OF ROUTINE SERVICES	Observed	Not Done Routinely	Don't Know	
	a) Take Weight	1	2	8	
	b) Record weight	1	2	8	
	c) Take temperature	1	2	8	
	d) Assess immunization status	1	2	8	
	e) Sponge febrile children	1	2	8	
	f). Give paracetamol to febrile children	1	2	8	
	g) Other (SPECIFY)_____	1	2	8	

206	Do you have a stock of child health cards? If YES, ask to see one.	YES, OBSERVED CARD ..... 1 YES, CARD NOT SEEN..... 2 NO INDIVIDUAL CARDS 3	

207	Is the new combination therapy Artesunate/Amodiaquine being used to treat sick children at this facility?	YES……1 NO……..2 DON'T KNOW8	➔ 209 ➔ 209
208	IF YES, What is the dosage for a child that weighs 20 kgs? (Answer Artesunate 4mg/kg (80mg) and Amodiaquine 10mg/kg (200 mg) for 3 days given in two divided doses.	CORRECT……1 NOT CORRECT…..2	

209	How many staff have been trained in the use of the new malaria drug policy in this facility?	Don't Know = 98 ☐☐	
210	How many providers treat sick children at this facility?	Don't Know = 98 ☐☐	
211	How many providers at this facility have been trained in IMCI?	Don't Know = 98 ☐☐	

3. Integrated Disease Surveillance and Response

NO.	QUESTIONS	CODING CLASSIFICATION	GO TO
300	Does this facility detect, track and report on priority diseases (e.g. cholera, meningitis, guinea worm, malaria, etc…) or use the IDSR method?	YES .....1 NO 2	➔400
	FIND THE MOST SENIOR HEALTH WORKER INVOLVED IN THE DELIVERY OF IDSR SERVICES. IF DIFFERENT FROM INDIVIDUAL(S) RESPONDING TO THE PREVIOUS SECTIONS COMPLETE QUESTION BELOW. IF THE PERSON IS THE SAME, CONTINUE WITH 302. **FOR NEW RESPONDENTS READ AND COMPLETE QUESTION 301.** I am representing the Ghana Health Service and the Quality Health Partner for this survey. We are conducting research that will help us to better understand how malaria services are provided and improve the quality of care. This information will be used to design programs to improve these services. This part of the survey will ask questions about the Integrated Disease Surveillance and Response. It will take about 10-20 minutes to complete. All information from this survey is confidential and participation in answering questions for this survey is voluntary. You can refuse to answer any question or all the questions. We are asking for your help to ensure that the information collected is accurate. If there are sections where someone else is the most appropriate person to provide information, we would appreciate your introducing us to that person. Do you have any questions for me? Will you participate in this survey ? If Yes, ask them to sign the line below.		
301			
	SIGNATURE OF INTERVIEWEE INDICATES PARTICIPANT AGREEMENT TO PARTICIPATE AND THAT THE TIME IS CONVENIENT		
302	How many staff have been trained in the use of surveillance forms?	☐☐ Don't Know = 98	
303	How many staff have been trained in the use of standard case definitions?	☐☐ Don't Know = 98	
304	How many staff have been trained in the use of surveillance data (i.e. training in surveillance data analysis) to show trends of disease morbidity and mortality?	☐☐ Don't Know = 98	

305	Does this facility have protocols on the following: **IF YES, ASK TO SEE A COPY.**	Observed / Reported Available	Not Available	Not Determined
	a) National Technical Guidelines on IDSR	1	2	8
	b) Standard Case Definitions	1	2	8
	c) COMDAB	1	2	8
306	Data Analysis: Does the facility have monthly trend analysis of graphs for key diseases? (FOR LAST TWO QUARTERS OF 2007)	Observed	Not Available	Not Determined
	a). Malaria cases in children < 5	1	2	8
	b). All Malaria cases reported at the facility	1	2	8
	c). Malaria deaths	1	2	8
	d). Other Malaria related graph (specify) _____	1	2	8
307	Does the facility have displayed demographic data (population, age/sex distribution) of the catchment area?	1	2	8
308	Do you have an estimate of the size of the catchment population that is served by this facility? That is the target population or total population lining in the area served by this facility?		CATCHMENT POPULATION ____ ____ ____ ____ ____ ____ NO ESTIMATE 999995 DK 999998	

4. Laboratory

NO.	QUESTIONS	CODING CLASSIFICATION	GO TO
400	Does this facility offer laboratory services?	YES ..... 1 NO..... 2	➔401 ➔500

FIND THE MOST SENIOR HEALTH WORKER INVOLVED IN THE DELIVERY OF LAB SERVICES. IF DIFFERENT FROM INDIVIDUAL(S) RESPONDING TO THE PREVIOUS SECTIONS COMPLETE QUESTION BELOW. IF THE PERSON IS THE SAME, CONTINUE WITH 402.

FOR NEW RESPONDENTS READ AND COMPLETE QUESTION 401.

I am representing the Ghana Health Service and the Quality Health Partners Project for this survey. We are conducting research that will help us to better understand how malaria services are provided. This information will be used to design programs to improve these services. This part of the survey will ask questions about laboratory service. It will take about 10-20 minutes to complete.

All information from this survey is confidential and participation in answering questions for this survey is voluntary. You can refuse to answer any question or all the questions. We are asking for your help to ensure that the information collected is accurate. If there are sections where someone else is the most appropriate person to provide information, we would appreciate your introducing us to that person.

Do you have any questions for me?

Will you participate in this survey? If Yes, ask the person to sign the line below.

401 SIGNATURE OF INTERVIEWEE INDICATES PARTICIPANT AGREEMENT TO PARTICIPATE AND THAT THE TIME IS CONVENIENT

	ITEMS REQUIRED FOR LABORATORY EXAMINATION	(a) Is item present?			(b) If item/s available, in working order?		
		Observed / RA	Not Available	Not Deter-mined	Yes	No	ND
402	Electric Binocular Microscope	1	2	8	1	2	8
403	Hematocrit Centrifuge	1	2	8	1	2	8
404	Slides and coverslips	1	2	8	1	2	8
405	RAPID DIAGNOSTIC TEST (RDT) for Malaria	1	2	8			
406	Giemsa stain	1	2	8			

TESTS FOR ANEMIA							
		(a) Is item present?			(b) If item/s available, in working order?		
		Observed / RA	Not Available	Not Deter-mined	Yes	No	ND
407	Hemoglobinometer/ Colorimeter	1	2	8	1	2	8
408	Drabkin's solution	1	2	8			
409	Capillary tubes (for hematocrit)	1	2	8			
410	Stericon strips or Tallquist test for measuring hemoglobin (w/ valid expiry date)	1	2	8			
AVAILABILITY OF LAB TESTS							
411	Are the following tests available at this facility on a routine basis?						
		Observed / RA	Not Available	Not Deter-mined			
	a) complete blood cell count	1	2	8			
	b) urine analysis	1	2	8			
	c) spot glucose level	1	2	8			
	d) electrolytes	1	2	8			
	e) liver function test	1	2	8			
	f) G6PD	1	2	8			

LAB SERVICES STATISTICS

412	Does the Lab maintain log book, register other record of tests done?	YES……..…….1 NO……..……2	➔413 ➔500

413	APR 2007	MAY 2007	JUN 2007	JUL 2007	AUG 2007	SEP 2007	OCT 2007	NOV 2007	DEC 2007	JAN 2008	FEB 2008	MAR 2008
a. Number of malaria blood films done												
b. Number of RDT for malaria done (if applicable)												
c. Number of positive malaria blood films												
d. Number of positive RDTs for malaria												

5. ESSENTIAL MEDICATIONS AND SUPPLIES

500	**Does this facility have a pharmacy /dispensary or does it dispense drugs to patients?**	**Yes----------1** No----------2	➔500a **➔600**

FIND THE PHARMACIST, DISPENSING TECHNICIAN OR OTHER HEALTH WORKER RESPONSIBLE FOR DRUG MANAGEMENT AT THE FACILITY. IF IT IS THE SAME PERSON YOU HAVE BEEN TALKING TO GO TO QUESTION 501

	FOR NEW RESPONDENTS READ AND COMPLETE QUESTION 500. I am representing the Ghana Health Service and the Quality Health Partners Project for this survey. We are conducting research that will help us to better understand how malaria treatment is provided. This information will be used to design programs to improve these services. This part of the survey will ask questions about the services offered at this facility, the availability of drugs and the equipment that is available. It will take about 30 minutes -1 hour to complete. All information from this survey is confidential and participation in answering questions for this survey is voluntary. You can refuse to answer any question or all the questions. We are asking for your help to ensure that the information collected is accurate. Do you have any questions for me? Will you participate in this survey? If Yes, ask the person to sign the line below.
500a	SIGNATURE OF INTERVIEWEE INDICATES PARTICIPANT AGREEMENT TO PARTICIPATE AND THAT THE TIME IS CONVENIENT.

	CHECK TO SEE IF EACH OF THESE MEDICATIONS IS AVAILABLE IN THE PHARMACY TODAY.				THEN CHECK TO SEE IF THEY HAVE HAD A STOCKOUT OF THIS MEDICATION SINCE 1 JAN 2008		
	MEDICATION **Anti-Malarial MEDICINES**	Observed	Not Available	Not Determined	Stock-out	No-Stock Out	Not Determined
501	Artesunate/Amodiaquine oral (co-packaged)	1	2	8	1	2	8
502	Artesunate oral	1	2	8	1	2	8
503	Amodiaquine oral	1	2	8	1	2	8
504	Artemether-Lumefantrine (Co-Artem or Lonart)	1	2	8	1	2	8
505	Quinine oral	1	2	8	1	2	8

	MEDICATION **Anti-Malarial MEDICINES**	Observed	Not Available	Not Determined	Stock-out	No-Stock Out	Not Determined
506	Quinine Inj.						
507	Chloroquine oral	1	2	8	1	2	8
508	Sulphadoxine/pyrimethamine (FANSIDAR, Malafan)	1	2	8	1	2	8
509	Alaxin tablets/Suspensions	1	2	8	1	2	8
510	Artemos tablets/suspension	1	2	8	1	2	8
511	Daraprim oral	1	2	8	1	2	8
512	Other Anti-Malarial (SPECIFY) a._____ b._____ c._____	1	2	8			

	A).CHECK TO SEE IF EACH OF THESE MEDICATIONS IS AVAILABLE IN THE PHARMACY TODAY.				B). THEN CHECK TO SEE IF THEY HAVE HAD A STOCKOUT OF THIS MEDICATION SINCE 1 JAN 2008		
	MEDICATION **Other MEDICINES**	Observed	Not Available	Not Determined	Stock-out	No-Stock Out	Not Determined
513	Amoxicillin caps /Suspension	1	2	8	1	2	8
514	Co-trimoxazole tabs/Susp.	1	2	8	1	2	8
515	Ciprofloxacin tablets	1	2	8	1	2	8
516	Iron preparations	1	2	8	1	2	8
517	Multivitamin tabs/caps/syrups	1	2	8	1	2	8
518	Paracetamol tablets	1	2	8	1	2	8
519	Paracetamol Syrup /Suppositories	1	2	8	1	2	8
520	Aspirin/aspirin containing drugs	1	2	8	1	2	8
521	Diazepam tablets/Supp.	1	2	8	1	2	8
522	ORS	1	2	8	1	2	8
	Parenteral Preparations						
523	Diazepam Inj	1	2	8	1	2	8
524	Penicillin/Ampicillin Inj	1	2	8	1	2	8
525	Gentamycin Inj	1	2	8	1	2	8
526	Chloramphenecol Inj	1	2	8	1	2	8
527	Furosemide inj	1	2	8	1	2	8
528	Dexamethasone Inj	1	2	8	1	2	8
529	Normal Saline	1	2	8	1	2	8
530	Dextrose and Saline	1	2	8	1	2	8
531	Dextrose and Saline Infant Prep	1	2	8	1	2	8
532	Dextrose	1	2	8	1	2	8
533	Ringers Lactate	1	2	8	1	2	8
534	Glucose 50%	1	2	8	1	2	8
535	Glucose 20%	1	2	8	1	2	8
536	Glucose 5%	1	2	8	1	2	8
537	Furosemide	1	2	8	1	2	8

535	**During the past 6 months**, have you always, sometimes or almost never received the amount of each medication that you order (or that you are supposed to routinely receive)?	ALWAYS ..... 1 SOMETIMES..... 2 ALMOST NEVER 3	
536	Were medicines organized according to expiry date "first in first out" on the shelves? (VERIFY WHEN COMPLETING ABOVE)	YES……1 NO……2 DON'T KNOW……8	
537	Did the stock records indicate that FIFO is practiced? (VERIFY WHEN COMPLETING ABOVE)	YES……1 NO……2 DON'T KNOW……8	
538	Are the medicines off the floor and protected from water / dampness?	YES……1 NO……2 DON'T KNOW……8	
539	Are medicines protected from the sun?	YES……1 NO……2 DON'T KNOW……8	
540	How will you describe the temperature of your medicine storage room? At what temperature(s) do you usually keep your medicines?	Cool……1 Warm……2 Very hot…… 3	
541	How do you decide how much of each malaria medication to order? Do you: **CIRCLE ALL THAT APPLY.**	Order to bring stock to a fixed level……1 Order the same quantity each time regardless of how many of each medication remain in stock……2 Order different amounts based on calculation of prior utilization and expected future activity?..3 Order depending on what you think is needed without a specific method for calculating amounts……4 Need and amount determined elsewhere……5 Other – specify……6 _____ Don't know……8	
543	How do you decide when to order medications? Do you: **CIRCLE ALL THAT APPLY**	Place order whenever stock level falls to a pre-determined level…….....1 Have a fixed time when you are supposed to submit orders for medications. ….....2 The facility can place an order wherever there is believed to be a need……3 It is necessary to wait until the official time for ordering……4 Other – specify ……5 _____ Don't know……..8	

MONTHLY OUTPATIENT MORBIDITY (SERVICE STATISTICS)

600	APR 2007	MAY 2007	JUN 2007	JUL 2007	AUG 2007	SEP 2007	OCT 2007	NOV 2007	DEC 2007	JAN 2008	FEB 2008	MA 200
a. Malaria cases children<1yr												
b. Malaria cases children 1-4yrs												
c. Malaria cases OVER 5yrs												
d. Malaria cases Pregnant women												
e. Total Malaria cases												
f. Total Anemia cases												
g. Total OPD Attendance												

FACILITIES THAT HAVE INPATIENT CAPACITY ONLY												
601	APR 2007	MAY 2007	JUN 2007	JUL 2007	AUG 2007	SEP 2007	OCT 2007	NOV 2007	DEC 2007	JAN 2008	FEB 2008	MAR 2008
A. Average Bed Occupancy												
B. Total Admissions (malaria)												
C .Total Admissions (all)												

Observation Number ☐☐

A-2. Patient Observation Form

FACILITY IDENTIFICATION	
Name of Region: _____`	FACILITY CODE ☐☐☐☐☐☐
Name of District: _____	PROV TYPE ☐
Name of the facility_____	PROV SEX ☐
Name of Observer _____	FACILTY TYPE ☐
Date: _____	OPER AUTH ☐
Type of Health worker Observed: Doctor =1, MA = 2 Nurse =3, Midwife =4, Other = 5	
Provider Sex Male =1 Female =2	PROVIDER NUMBER ☐ (For first provider observed in a consultation room write 1. If the provider in THAT consultation room changes write 2,3 etc…) DO NOT CHANGE CONSULTATION ROOMS.
Type of Health Facility : 1 = Teaching Hospital 2=Regional hospital; 3 = District Hospital; 4=Other Hospital 5=Polyclinic 6=Health Center 7= Maternity Home 8=Clinic 9=CHPS 10=RCH Unit 11=Other _____)	
Operating Authority: 1= Government; 2=Mission/Religious 3 = Private for profit 4=Quasi-Government 5 = Other _____)	

NO.	QUESTIONS	CODING CLASSIFICATION	
O100a	**How old is the patient?**	**Under 5** **1➔**O100c	**Over 5** **2➔**O100b
O100b.	**WRITE AGE IN FULL YEARS** ____ ____		
O100C	**IF PATIENT IS <5 YEARS WRITE AGE IN MONTHS MONTHS** __ __		
O100D	**Gender of the Patient**	**Male** **1**	**Female** **2**

O101	**What reason/s does the Caregiver / Patient provide for coming to the facility**	**YES**	**NO**
	A) Fever/ Hot body?	1	2
	B) Diarrhoea?	1	2
	C) Vomiting everything?	1	2
	D) Cough/difficult breathing	1	2
	E) Ear problem?	1	2
	F) Skin Problem	1	2
	G) OTHERS (SPECIFY_____)	1	2
	Assessment		
O102	**Does the provider ask the patient/caregiver about the following symptoms since the beginning of the illness**	**YES**	**NO**
	A) Unable to eat or drink?	1	2
	B) Vomiting everything	1	2
	C) Convulsions?	1	2
	D) Fever/ Hot body?	1	2
	E) Headache??	1	2
	F) Joint Pain?	1	2
	G) Difficult breathing / Cough?	1	2
	H) Chills?	1	2
	I) Little or no urination in the past 24 hours?	1	2
	J) Dark Urine?	1	2
	K) Abnormal Bleeding?	1	2
	L) Difficult or painful urination?	1	2
	M) Diarrhea / Abdominal Pain?	1	2
	N) Bloody Stools?	1	2
	O) Ear Pain	1	2
	P) Other _____	1	2
O103	**Does the provider or other clinical staff member perform any of the following examinations?**	**YES**	**NO**
	A). Take the patient's temperature or refer to their card where it is written?	1	2
	B). Weigh the patient, refer to patients weight on the card or check weight for age	1	2
	C). Take blood pressure	1	2
	D) Take pulse (>60 seconds, with timer or watch with second hand)	1	2
	E) . Check for anaemia (palmar pallor)	1	2
	F) Check for visible severe wasting	1	2
	G). Count respiratory rate (>60 seconds, with watch or timer)	1	2
	H) .Check for dehydration (Skin pinch)	1	2
	I) Check for lethargy if child not awake	1	2
	J). Check immunization status	1	2
	K). Other _____	1	2

	Communication / Counseling		
O104	**Does the Provider provide any of the following advice when counseling the patient / caregiver?**	**YES**	**NO**
	A) Provide general information about feeding or breastfeeding the patient?	1	2
	B) Give extra fluids to the patient during this sickness?	1	2
	C) Continue feeding the child / eating as a patient during this sickness and after?	1	2
	D) If the patient has fever does the provide discuss management of fever by sponging and giving paracetamol?	1	2
	D) Tell the caregiver/ patient what illness (es) the child/patient has?	1	2
	E). Talk to the caregiver/patient about ITN use?	1	2
	F) Describe signs or symptoms in the patient for which the caregiver /patient should return to the facility?	1	2
	G). If medicines are prescribed, does the provider describe how to take each medicine completely?	1	2
	H). If medicines are prescribed, does the provider ensure that the patient takes the first dose at the facility (administers himself or tells pharmacy to administer the medicine.)	1	2

	Laboratory		
O105	Does the provider order lab tests?	YES 1➔106	NO 2➔110
O106	What was the Hematocrit result?	< 15%.....1 ≥15%.....2 Result not available the same day…….3 Patient did not return with results……...4 Test not done……5	
O107	What was the Hemoglobin result?	<5 g/dl……1 ≥ 5 g/dl……2 Result not available the same day…….3 Patient did not return with results……..4 Test not done……5	
O108	What was the parasetimia level?	+……1 ++……2 +++……3 ++++……4 Result not available the same day…….5 Patient did not return with results……...6 Test not done……7	
O109	What was the Parasite species _____	p. Falciparum……1 p. Malariae……2 p. Ovale……3 Mixed……4 None specified……5 Result not available the same day…….6 Patient did not return with results……...7 Test not done……8	

AFTER THE CONSULTATION – REVIEW PATIENT's CARD WITH THE PROVIDER and or ask him/her about his/her diagnosis on this case.

NO.	QUESTIONS	CODING CLASSIFICATION	GO TO
O110	How does the Provider classify the patient's illness with regard to fever? IF THE CHILD DID NOT HAVE FEVER ACCORDING TO THE PROVIDER'S CLASSIFICATION, CIRCLE CODE "4".	Uncomplicated Malaria……1 Very Severe Febrile Disease incl. Severe Malaria….2 Fever – other cause……..3 No Fever……4	
O111	**ONLY FOR CHILDREN UNDER 5** What other diagnoses did the provider make? CIRCLE ALL APPLICABLE IF THERE IS NO ADDITIONAL DIAGNOSES CIRCLE CODE 22.	Severe Pneumonia……..1 Pneumonia……2 Cough or Cold – no pneumonia……3 Severe dehydration……4 Some dehydration……5 No dehydration……6 Severe persistent diarrhea……7 Persistent diarrhea……8 Dysentery……9 Severe complicated measles……10 Measles with eye/mouth complication……11 Measles……12 Acute ear infection……13 Chronic ear infection……14 No ear infection……15 Severe malnutrition……16 Severe anaemia……17 Anaemia……18 Very low weight……19 No anaemia and not very low weight……20 Other(specify) ……21 _____ No other diagnoses……22	

O112	**What oral / suppository treatments were prescribed?**	Pre-scribed	Not Prescribed	Prescription
	A) Artesunate + Amodiaquine antimalarial tablets? .	1	2	Formulation:_____ a. Amount each time:_____ b. number of times per day:_____ c. total days:_____
	B) Artesunate/ Amodiaquine antimalarial syrup / suppository?	1	2	Formulation:_____ a. Amount each time:_____ b. number of times per day:_____ c. total days:_____

C) Other antimalarial tablet/syrup? specify:_____	1	2	Formulation:_____ a. Amount each time:_____ b. number of times per day:_____ c. total days:_____
D) Co-trimoxazole tablets/syrup?	1	2	Formulation:_____ a. Amount each time:_____ b. number of times per day:_____ c. total days:_____
E) Amoxicilin tablets/syrup?	1	2	Formulation:_____ a. Amount each time:_____ b. number of times per day:_____ c. total days:_____
F) Other antibiotic tablets/syrup? specify:_____	1	2	Formulation:_____ a. Amount each time:_____ b. number of times per day:_____ c. total days:_____
G) Paracetamol?	1	2	
H) Antidiarrheal/antimotility drug?	1	2	
I) Vitamin A?	1	2	
J) Multi-vitamins?	1	2	
K) Other vitamins?	1	2	
L) Mebendazole?	1	2	
M) Iron tablets/syrup?	1	2	
N) Other Tablets/syrup	1	2	
O) ORS?	1	2	

0113	**What injections were prescribed?**	**Prescribed**	**Not Prescribed**	
	A) Antimalarial : specify _____ _____	1	2	Formulation:_____ a. Amount each time:___ b. number of times per day:____ c total days:_____
	B) Antibiotic: specify_____ _____	1	2	Formulation:_____ a. Amount each time:___ b. number of times per day:____ total days:_____

O114	Did the provider do any of the following?	Admit the patient……1 Refer the patient……2

AT THE END OF THE CONSULTATION GIVE THE PATIENT A CARD WITH THEIR OBSERVATION NUMBER ON IT (FROM PAGE ONE).

ASK THEM TO GO TO THE LAB AND PHARMACY AS APPROPRIATE AND DIRECT THEM TO SEE YOUR COLLEAGUE BEFORE LEAVING THE FACILITY.

Comments:

A-3 Provider Interview Tool

FACILITY IDENTIFICATION	
Name of Region: _____` Name of District: _____ Name of the facility_____ Name of Interviewer(s) _____ Date: _____ Sex Male =1 Female =2 Type of Health Facility : (1 = Teaching Hospital 2=Regional hospital; 3 = District Hospital; 4=Other Hospital 5=Polyclinic 6=Health Center 7= Maternity Home 8=Clinic 9=CHPS 10=RCH Unit 11=Other _____) Operating Authority: 1= Government; 2=Mission/Religious 3 = Private for profit 4=Quasi-Government 5 = Other _____)	FACILITY CODE ☐☐☐☐☐☐ PROV SEX ☐ FACILTY TYPE ☐ OPER AUTH ☐ PROVIDER NUMBER ☐ (For first provider observed in a consultation room write 1. If the provider in THAT consultation room changes write 2,3 etc…) DO NOT CHANGE CONSULTATION ROOMS.

NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT YOU AND THE SERVICES YOU PROVIDE HERE IN RELATION TO MALARIA

2. PROVIDER TRAINING AND EXPERIENCE

NO.	QUESTIONS	CODING CLASSIFICATION
O201	In what year did you start working in this facility?	YEAR ☐☐☐☐
O202	What is your current technical/professional qualification?	MEDICAL DOCTOR ..... 1 MEDICAL ASST ..... 2 NURSE ..... 3 MIDWIFE ..... 4 COMMUNITY HEALTH NURSE.... 5 OTHER_____.. 6
O203	What year did you graduate with this qualification?	YEAR . ☐☐☐☐

2. UNCOMPLICATED MALARIA			
O204	What drugs do you usually prescribe for treating uncomplicated malaria: **DO NOT READ, DO NOT PROMPT – ASK ANY OTHERS?**	Mentioned	Not Mentioned
	a. Artesunate + Amodiaquine	1	2
	b. Artesunate only	1	2
	c. Amodiaquine only	1	2
	d SP only	1	2
	d. chloroquine only	1	2
	e. Artesunate +S/P (Co-arinate)	1	2
	f. Co-artem or Lonart	1	2
	g. Alaxin	1	2
	h. Quinine	1	2
	i. Other? (specify)……..	1	2

O205	How often do you prescribe Artesunate-Amodiaquine for malaria treatment?	ALWAYS…….....1 OFTEN / SOMETIMES……...2 RARELY……..…3 NEVER……...……4	➔207➔ 207
O206	Why don't you prescribe the combination? **CIRCLE ALL APPLICABLE**	fear of adverse reaction.....….1 personal experience.....2 experience of a patient….....3 lack of confidence…….....4 experience of a colleague…....5 other (specify).6	
O207	Do you routinely order laboratory tests in patients (> 5 years) with fever/ suspected malaria? If Yes: What laboratory tests do you routinely ask for?	Yes 1➔207A	No 2➔208
	A. blood film for malaria parasites	1	2
	B. haemoglobin	1	2
	C. Other (Specify) _____	1	2

3. SEVERE/COMPLICATED MALARIA				
O208	Which signs or conditions do you look for in order to diagnose severe Malaria: **DO NOT READ, DO NOT PROMPT – ASK ANY OTHERS?**	Mentioned	Not Mentioned	
	a) Hyperparasitaemia (High parasite Load)	1	2	
	b) Altered consciousness (confusion or drowsiness) or coma.	1	2	
	c) Convulsions.	1	2	
	d) Hypoglycemia.	1	2	
	e) Acidosis	1	2	
	f) Difficulty in breathing or pulmonary oedema	1	2	
	g) Reduced urine output	1	2	
	h) Severe Anaemia or severe pallor (HB<5mg/dl)	1	2	
	i) Circulatory collapse or shock (low volume pulse/cold extremities)	1	2	
	j) Electrolyte imbalance	1	2	
	k) Jaundice (yellowing of eyes)	1	2	
	l) Hyperpyrexia (axillary temperature ≥ 39.5 Oc)	1	2	
	m) Spontaneous Bleeding (Disseminated Intravascular Coagulation)	1	2	
	n) Prostration i.e. generalized weakness (inability to stand or walk).	1	2	
	O) Other (SPECIFY.....)	1	2	

O209	What anti-malarial drug/s do you use in treating severe malaria **OR** before referring a patient to a better equipped facility? **If they mention a drug – ask – what do you give?** **DO NOT READ, DO NOT PROMPT – ASK – ANYTHING ELSE?****	Mentioned Correct Dose	Mentioned Wrong Dose	Not Mentioned
	a) Quinine injection IM/IV 10mg/kg body weight, 8 hourly until can be taken orally for up to 7 DAYS	1	2	3
	b) Quinine tablets 10mg/kg body weight 8 hourly for 7 DAYS.	1	2	3
	c) Artesunate alone a loading dose 4mg/kg (given in two doses) or 50mg suppository for child and 200 mg suppository for adult) and then 2mg/kg oral in two doses for 4 days	1	2	3
	d) Amodiaquine 10mg/kg body weight bid for 3 days	1	2	3
	e) S/P 500mg/25mg	1	2	3
	f) Artesunate –SP (e.g. Co-arinate) 1 tab each daily * 3days	1	2	3
	g) Co-artem or Lonart (>35kg, 4tabs twice daily * 3days)	1	2	3
	h) Chloroquine 10mg/kg body weight/day for days 1&2; 5mg/kg body weight on day 3	1	2	3
	i) Other (SPECIFY.....)	1	2	3

****NOTE –the provider may not know the exact dose – you may ask them to refer to their resources and tell you.**

O210	What other supportive treatment do you sometimes find necessary to provide in cases of severe Malaria? **DO NOT READ, DO NOT PROMPT**	Mentioned	Not Mentioned
	a) Blood Transfusion for Severe Anaemia	1	2
	b) IV Infusions to correct fluid and electrolyte imbalance	1	2
	c) Anti-convulsants for convulsions	1	2
	d) Anti-pyretics for hyperpyrexia	1	2
	e) IV Dextrose for hypoglycaemia	1	2
	f) I refer all cases of severe or complicated malaria to a hospital or other facility for treatment	1➔213	2
	g) Other (SPECIFY.....)	1	2
O211	What clinical monitoring do you do in cases of severe Malaria? **DO NOT READ, DO NOT PROMPT**		
	a) Level of consciousness (using Glasgow or Blantyre coma scale)	1	2
	b) Fluid intake/output and IV infusion/drip rate	1	2
	c) Blood Pressure, Body Temperature, Pulse.	1	2
	d) Breathing or Respiration rate	1	2
	e) Blood parasitemia	1	2
	f) Hemoglobin/hematocrit	1	2
	g) Other (SPECIFY.....)	1	2

FOR FACILITIES THAT HAVE LABORATORIES ONLY

O212	What laboratory tests do you request in cases which you highly suspect to be complicated or severe malaria? **DO NOT READ, DO NOT PROMPT – ASK ANYTHING ELSE?**	Mentioned	Not Mentioned
	a) Order Thick and/ thin blood film microscopy for malaria parasites.	1	2
	b) Order/do Rapid Diagnostic Testing for MPs	1	2
	c) Order of check Haemoglobin or Hematocrit	1	2
	d) Order Blood Urea/Creatinine investigations	1	2
	e) Order Blood electrolytes investigations	1	2
	f) Order Blood Glucose assessment	1	2
	g) Do Lumber Puncture to exclude other causes of coma	1	2
	h) Other (SPECIFY.....)	1	2
	i) I refer all cases of severe or complicated malaria to a hospital or other facility for treatment	1	2

Now I would like to ask a few questions about training and standards and guidelines at this facility.

NO.	Question	Coding Classification		
O213	Do you have a copy of the following: (ask to see a copy) ,.	Yes seen or reported to have	No	Don't know
	a. National Malaria Drug Policy?	1	2	8
	b. Standard treatment guidelines?	1	2	8
	c. Malaria Treatment Guideline	1	2	8
	d. Malaria Counseling Card?	1	2	8
	e. IMCI guidelines (Chart booklet)?	1	2	8
O214	Have you been trained or received refresher/ follow-up in last 3 years in Malaria	YES..... .1 NO..... ..2		
O215	Have you been trained or received refresher/ follow-up in last 3 years in IMCI	YES..... .1 NO..... ..2		
O216	Do you feel you need additional training in order to be able to manage malaria better?	YES..... .1 NO..... ..2		

Thank you very much for allowing us to observe your consultations today and thank you also for completing this interview. We hope that the results will lead to more malaria programming that will involve you.

INTERVIEWER COMMENTS

A-4. Exit Interview and Re-Examination of Patient Tool

FACILITY IDENTIFICATION	
Name of Region: _____`	FACILITY CODE ☐☐☐☐☐☐
Name of District: _____	
Name of the facility_____	FACILTY TYPE ☐
Name of Interviewer _____	OPER AUTH ☐
Date: _____	SEX of PATIENT ☐
Type of Health Facility : (1 = Teaching Hospital 2=Regional hospital; 3 = District Hospital; 4=Other Hospital 5=Polyclinic 6=Health Center 7= Maternity Home 8=Clinic 9=CHPS 10=Other _____)	AGE of PATIENT ☐☐ YEARS AGE of CHILD ☐☐ MONTHS
Operating Authority: 1= Government; 2=Mission/Religious 3 = Private for profit 4=Quasi-Government 5 = Other _____)	
SEX OF THE PATIENT 1 = MALE 2 = FEMALE	

I would like to ask you a few questions about your care at this facility today.

NO.	QUESTIONS	CODING CLASSIFICATION		GO TO
R100	Did the health worker give or prescribe any oral medicines (anti-malarials, antibiotics or ORS) for <PATIENT> at the health facility today?	YES……1 NO……2 DON'T KNOW……3		➔R108 ➔R108
R101	*If yes compare the caretaker's/Patient's medication with the samples for identification of the oral medicines – (anti-malarials, antibiotics or ORS only)*			
	Copy the information from the caretaker's medication or prescription – INCLUDE ORS:	Does patient have the medicine(1) or do they have prescription to buy it outside the facility?(2)		
	A. _____	1	2	
	B. _____	1	2	
	C. _____	1	2	
	D. _____	1	2	
	E. _____	1	2	
	F. _____	1	2	
If yes, ask the caretaker the following (record what you hear):				
R102	MEDICATION A How much will you give <patient> each time: of medication <A>	_____quantity 8 = DON'T KNOW		

R102a	How many times will you give medication <A> to <patient> each day?	_____times 8 = DON'T KNOW	
R102b	How many days will you give medication <A> to <patient> ?	_____days 8 = DON'T KNOW	
R103	MEDICATION B How much will you give <patient> each time: of medication <B>	NO MEDICATION B .....quantity 8 = DON'T KNOW	➔R108
R103a	How many times will you give medication <B> to <patient> each day?	_____times 8 = DON'T KNOW	
R103b	How many days will you give medication <B> to <PATIENT> ?	_____days 8 = DON'T KNOW	
R104	MEDICATION C How much will you give <patient> each time: of medication <C>	NO MEDICATION C ..... 8 = DON'T KNOW	➔R108
R104a	How many times will you give medication <C> to <patient> each day?	_____times 8 = DON'T KNOW	
R104b	How many days will you give medication <C> to <patient> ?	_____days 8 = DON'T KNOW	
R105	MEDICATION D How much will you give <patient> each time: of medication <D>	NO MEDICATION D……..1 ..... 8 = DON'T KNOW	➔R108
R105a	How many times will you give medication <D> to <patient> each day?	_____times 8 = DON'T KNOW	
R105b	How many days will you give medication <D> to <patient> ?	_____days 8 = DON'T KNOW	
R106	MEDICATION E How much will you give <patient> each time: of medication <E>	NO MEDICATION E……..1 ..... 8 = DON'T KNOW	➔R108
R106a	How many times will you give medication <E> to <patient> each day?	_____times 8 = DON'T KNOW	
R106b	How many days will you give medication <E> to <patient> ?	_____days 8 = DON'T KNOW	
R107	MEDICATION F How much will you give <patient> each time: of medication <F>	NO MEDICATION D……..1 ..... 8 = DON'T KNOW	➔R108
R107a	How many times will you give medication <F> to <patient> each day?	_____times 8 = DON'T KNOW	
R107b	How many days will you give medication <F> to <patient> ?	_____days 8 = DON'T KNOW	

R108	Did the health worker give you a specific day when to come back to this facility? If the answer is Yes, but patient can't remember write 98 days	1 = YES_____DAYS 2 = NO 8 = DON'T KNOW		
R109	FOR CHILDREN <5 ONLY: Sometimes children's condition may worsen and they should be taken immediately to a health facility: What conditions in your patient would cause you to take your patient to a health facility right away? DO NOT PROMPT	Mentioned	Not Mentioned	
	a. patient not able to drink or breastfeed	1	2	
	b. patient becomes sicker	1	2	
	c. patient develops a fever	1	2	
	d. patient has fast breathing	1	2	
	e. patient has difficulty breathing / pneumonia	1	2	
	f. patient has blood in the stool	1	2	
	g. patient is drinking poorly	1	2	
	h. other (specify _____)	1	2	

Information about the disease			
R110	When did your patient get sick? (CHECK ONLY ONE)	Today……..1 Yesterday……2 Three days ago…… …… 3 More than 3 days ago……4 Do Not Know……8	
R111	Was the patient taken to some other place for care/treatment before being brought here today? CHECK ONLY ONE	YES……..1 NO……2 DON'T KNOW ……8	→R113 →R113
R112	IF YES: Where was the patient taken? CIRCLE ALL THAT APPLY	THIS FACILITY……1 ANOTHER FACILITY……2 TO COMMUNITY HEALTH WORKER……3 TRADITIONAL HEALER……4 FAMILY MEMBER……5 PHARMACY/CHEMICAL SHOP……6 OTHER (SPECIFY)……..7 _____	
R113	Did you give any drugs to the patient since s/he got ill?	YES .....1 NO .....2 DON'T KNOW 8	→R116 →R116
R114	What drugs did you give the patient? CIRCLE ALL THAT APPLY	Anti-malarial treatment……1 Analgesics……..2 Antibiotic……...3 Anti-Helminthics (or equivalent)..4 Vitamins……..5 Other (Specify)……..6 _____ Don't Know……..8	
R115	Where did you get the drugs from? CIRCLE ALL THAT APPLY	PHARMACY/CHEMICAL SHOP……1 HEALTH FACILITY……..2 NEIGHBOUR/RELATIVE……3 MARKET……4 OTHER (SPECIFY)……...5 _____ Don't Know……..8	

Knowledge of Malaria by the Caretaker/Patient			
NOW I AM GOING TO ASK YOU SOME QUESTIONS ON MALARIA			
R116	How does someone get malaria? DO NOT READ OPTIONS. CIRCLE ALL THAT THEY ANSWER.	MOSQUITOES OR MOSQUITO BITE……1 INSECTS (NO MOSQUITO MENTIONED)……..2 THROUGH THE SUN……3 JUJU / SORCERY……4 EATING CERTAIN FOODS……5 OTHER_____6 (SPECIFY) DON'T KNOW……8	
R117	How can someone protect himself or herself against malaria? DO NOT READ OPTIONS. CIRCLE ALL THAT THEY ANSWER.	SLEEP UNDER NET ……...1 SLEEP UNDER AN IMPREGNATED NET……...2 GIVE A DRUG……3 USE INSECTICIDE……4 USE COILS OR REPELLANTS……..5 USE OTHER TRADITIONAL MEANS……6 PREVENT MOSQUITO BITES……7 FATIGUE……8 OTHER_____.....9 (SPECIFY) DON'T KNOW……10	
R118	Do you have an insecticide treated net in your home?	YES .....1 NO .....2 DON'T KNOW 8	 →R120 →R120
R119	IF YES: Did you /your patient sleep under a net last night?	YES .....1 NO .....2 DON'T KNOW 8	
R120	Did any health worker talk to you about ITN today?	YES .....1 NO .....2 DON'T KNOW 8	
R121	What will you do if you / the patient does not get better? (CIRCLE ALL THAT APPLIES)	RETURN TO THIS FACILITY……1 GO TO ANOTHER FACILITY…..2 GO TO A TRADITIONAL HEALER……3 GO TO A PHARMACY/CHEMICAL SELLER…...4 GO TO A COMMUNITY HEALTH VOLUNTEER..5 GO TO A DRUG PEDDLER……6 USE OTHER TRADITIONAL MEANS……7 OTHER……8 (SPECIFY) _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ DON'T KNOW……9	
R122	How many days will you wait to see if the patient is not getting better before using the options mentioned above?	☐☐ DAYS (IF DON'T KNOW = 98)	
R123	Could you tell me at least one thing that can be improved in the services delivered at this health facility?	--- --- ---	

RE-EXAMINATION FOR PATIENTS >5 YEARS

NOW I WOULD LIKE TO RE-EXAMINE YOU.

R200	Take patient's axillary temperature and record temperature	_____ _____. _____ C		
R201	**Assess for the following signs and symptoms since the beginning of the illness**	**YES**	**NO**	
	A) Fever/ Hot body or history of fever?	1	2	
	B) Headache?	1	2	Count the number of non-fever symptoms and record the result _____
	C) Joint Pain?	1	2	
	D) Nausea / Vomiting?	1	2	
	E) Chills? / Rigors?	1	2	
	F) Poor Appetite?	1	2	
	G) Fatigue? General Malaise	1	2	
	H) Diarrhea?	1	2	
	I) Dizziness?	1	2	
	J) Anemia (check for pale palms)	1	2	
R202	**IF THE PATIENT HAS FEVER (HISTORY OR TEMPERATURE ≥37.5 <u>OR</u> AT LEAST THREE NON-FEVER SYMPTOMS THEN THE PATIENT HAS SUSPECTED MALARIA. GO TO QUESTION R204.** **IF THE PATIENT HAS NO FEVER <u>AND</u> LESS THAN 3 NON FEVER RELATED SYMPTOMS, THEN THE PATIENT DOES NOT HAVE SUSPECTED MALARIA. THANK THE CARETAKER/PATIENT AND END THE INTERVIEW.**	SUSPECTED MALARIA……1 NO SUSPECTED MALARIA……2		➔R204 ➔END
	Assessment for Severe Malaria			
R204	Measure 60 second respiratory rate while patient is calm. (Normal breathing rate for an adult at rest is 8-16 breathes a minute)	_____ breaths per minute		
R205	Measure patients pulse while patient is calm in a minute.	_____ beats per minute		
R206	**Ask the patients caregiver about the following symptoms since the beginning of the illness**	**YES**	**NO**	**Not APP**
	A) Little or no urine in the past 24 hours	1	2	8
	B) Dark urine (Cola colored urine)	1	2	8
	C) Convulsions	1	2	8
	D) Prostration or abnormal behavior	1	2	8
	E) Abnormal Bleeding	1	2	8
R207	**Assess the patient for the following signs**			
	A. Respiratory Distress	1	2	8
	B. Unable to take liquids, profuse, repeated vomiting	1	2	8
	C. Prostration or abnormal behavior	1	2	8
	D. Weak Pulse or > 110 beats/min	1	2	8
	E. Cyanosis	1	2	8
	F. Jaundice	1	2	8
	G. Severe Palmor Pallor	1	2	8
	H. Bruising or Bleeding	1	2	8
R208	Are Lab Results Available?	1➔R209	2➔R213	8
R209	Hematocrit	<20%	≥20%	Test not done
R210	Hemoglobin	<5 g/dl	5 ≥g/dl	Test not done

R211	Hypoglycaemia (Blood sugar <40 mg/dL)	<40 mg/dL <2.2mmol/l	≥40 mg/dL or >2.2mmol/l	Test not done
R212	Parasitemia	No parasites seen……..1 +……2 ++……3 +++……4 ++++……5 Test not done……6		
R213	Determine if the patient has severe malaria. If the patient was assessed positively for ANY 1 of the indicators in the gray boxes – the patient has severe malaria. Ensure the patient receives adequate pre-referral dose of an anti-malarial and counsel the patient/caretaker to seek inpatient care urgently. If the patient has none of the signs in the shaded gray boxes then the patient has uncomplicated malaria. Ensure the patient received the correct dose of antimalarial treatment.	Severe Malaria 1	Uncomplicated malaria 2	Unable to determine 3

USE THE FOLLOWING FOR CHILDREN < 5

R300	**What reason/s does the Caregiver / Patient provide for coming to the facility**	**YES**	**NO**
	H) Fever/ Hot body?	1	2
	I) Diarrhoea?	1	2
	J) Vomiting everything?	1	2
	K) Cough/difficult breathing	1	2
	L) Ear problem?	1	2
	M) Skin Problem	1	2
	N) OTHERS (SPECIFY_____)	1	2
R301a	Take patient's temperature and record temperature	_____ _____**.** _____ **C**	
R301b	Record Patient's weight	_____ ____**Kg**	

R302	Does the child have any of the general DANGER SIGNS?:	Yes	No	Classification / DIAG
	A) Is the child unable to drink/breastfeed?	1	2	
	B) Is the child lethargic or unconscious?	1	2	
	C) Has the child had convulsions with this sickness?	1	2	
	D) Does the child vomit everything?	1	2	
	E) Is the Child Convulsing now?	1	2	
R303	Does the child have a cough or difficult breathing?	1	2➔304	Severe Pneumonia…1 Pneumonia……..2 Cough or Cold – no pneumonia……3
	A). For how long _____ Days			
	B). Count the breaths in 1 minute _____ Fast breathing?	1	2	
	C). Look for Chest In-drawing	1	2	
	D). Stridor?	1	2	
R304	Does the child have Diarrhoea?	1	2➔305	Severe dehydration…1 Some dehydration…..2 No dehydration……3 Severe persistent diarrhea……4 Persistent diarrhea…5 Dysentery……6
	A). For how long days			
	B). Does the child have sunken eyes?	1	2	
	C). Is the child able to drink?	1	2	
	D). Is the child dehydrated? (skin pinch goes back only after 2 seconds).	1	2	
R305	Does the child have fever (by history or above 37.5)	1	2➔307	Uncomplicated Malaria1 Very Severe Febrile Disease incl. Severe Malaria……2 Fever – other cause….3 No Fever……4
	A). For how long _____ Days			
	B). If for more than 7 days – fever present every day?	1	2	
	C). Look or feel for stiff neck	1	2	
R306	Does child have any of the signs of severe malaria? (other signs covered elsewhere in this form)			
	A). Altered consciousness or behavior	1	2	
	B). Severe Pallor (severe anemia) / Palmor Pallor	1	2	
	C). Patient passing little or no urine?	1	2	
	D). Patient passing dark or cola colored urine?	1	2	
	E). Child having abnormal bleeding (from mouth, nose skin)?	1	2	
	C). Prostration (unable to eat or drink at all)	1	2	
	D) Weak / Rapid Pulse	1	2	
	E). Jaundice	1	2	
R307	Does the child have measles now or in the last three months?	1	2➔ R308	Severe complicated measles……1 Measles with eye/mouth complication……2 Measles……3
	A). Is there a generalized rash?	1	2	
	B). Does the child have one of these cough, runny nose or red eyes?	1	2	
	C). Does the child have deep and extensive mouth ulcers?	1	2	
	D). Does the child have pus draining from the eye?	1	2	
	E). Does the child have clouding of the cornea?	1	2	

R308	Does the child have an ear problem?	1	2➔ R309	Acute ear infection…1 Chronic ear infection.2
	A). Is there ear pain?	1	2	No ear infection…….3
	B). Is there ear discharge? If Yes how long_____?	1	2	
	C). Is there tender swelling behind the ear?	1	2	
R309	Malnutrition and Anemia			Severe malnutrition…1
	A. Is there severe visible wasting?	1	2	Severe anaemia……..2
	B). Is there oedema – of both feet?	1	2	Anaemia……..3
	C). Is the child very low weight for age?	1	2	Very low weight……..4
	D) Severe Palmar Pallor	1	2	No anaemia and not very low weight……...5
R310	Other diagnoses _____ _____ _____			

COMMENTS:

A-5 Assessment of Cases with Severe Malaria

FACILITY IDENTIFICATION	
Name of Region: _____`	FACILITY CODE ☐☐☐☐☐☐
Name of District: _____	
Name of the facility_____	FACILTY TYPE ☐
Name of Interviewer _____	OPER AUTH ☐
Date: _____	
Type of Health Facility : (1 = Teaching Hospital 2=Regional hospital; 3 = District Hospital; 4=Other Hospital 5=Polyclinic 6=Health Center 7= Maternity Home 8=Clinic 9=CHPS 10=Other _____)	
Operating Authority: 1= Government; 2=Mission/Religious 3 = Private for profit 4 = Other _____)	

NO.	QUESTIONS	CODING CLASSIFICATION	
S999	**Are there any cases of severe malaria on admission at the facility on the day of the assessment?**	**Yes……..1** **No……..2**	➔S001 ➔END

OBSERVATION #1

CONSENT – READ THIS STATEMENT TO EACH CAREGIVER/PATIENT BEFORE CONDUCTING THE CONSULTATION:

My name is _____ and I am representing the Ghana Health Service and Quality Health Partners Project . We are conducting research on the treatment of malaria at this facility. We would like to observe your treatment and case history for our study. We will not collect any personal information about you. Your participation will help improve the quality of care at health facilities in Ghana. You do not have to participate. If you decline, this will in no way affect your ability to receive health care at this facility.

Do you have any questions? Will you participate in our study? If Yes, can you please sign the line below?

_____

S001. SIGNATURE OR THUMBPRINT OF PATIENT/CAREGIVER INDICATES CARE GIVER'S/PATIENTS AGREEMENT TO PARTICIPATE

If you have any questions about this observation you may contact the people on this card (give them a card).

NO.	QUESTIONS	CODING CLASSIFICATION		
S100a	**Gender of the Patient**	**Male (1)**	**Female (2)**	
S100b1 S100b2	**Age _____ _____ years** **If Child Under Five indicate _____ _____ months**			
		YES	**NO**	**DON'T KNOW**
S101	**Was this case laboratory-confirmed at the admission?**	**1**	**2**	**8**
S102	**Does the patient have at least one malaria smear per day of hospitalization until the parasitemia is negative?**	**1**	**2**	**8**
S103	**Assess whether the following signs or assessments were recorded on the chart.**			
	A. Respiratory Distress	1	2	8
	B. Fast breathing is ≥ 50/min for ages <12 months and ≥ 40/min for ages 1-5 years)	1	2	8
	C. Temperature ≥ 38.5 C	1	2	8
	D. Convulsion	1	2	8
	E. Lethargy, unconsciousness, or change in behavior	1	2	8
	F. Weak but fast Pulse or > 110 beats/min	1	2	8
	G. Cyanosis	1	2	8
	H Jaundice	1	2	8
	I Capillary Refill > 3 seconds	1	2	8
	J Severe Palmor Pallor / Severe Anemia	1	2	8
	K. Bruising or Bleeding	1	2	8
S104	Are Lab Results Available?	1➔S105	2➔S109	8
S105	Hematocrit	≤15%	≥15%	Test not done
S106	Hemoglobin	<5 g/dl	≥5g/dl	Test not done
S107	Hypoglycaemia (Blood sugar <40 mg/dL or 2.2mmol/L)	<40 mg/dL <2.2mmol/l	≥40 mg/dL or >2.2mmol/l	Test not done
S108	Parasite Density/Count	+ **…… ….1** ++ **……..2** +++ **……3** ++++ **……4** Result not available the same day **.**5 **Test not done**……6		

S109	Was a lumbar puncture test done?	Yes (1)	No (2)	Don't Know(8)
S110	Note other lab tests conducted for this patient's stay:			

S111	**Are the following monitored?**	**Yes**	**No**	**Frequency**
	A. Temperature	1	2	
	B. Blood Pressure	1	2	
	C. Respiratory Rate	1	2	
	D. Fluid intake/output	1	2	
	E. Lumbar Puncture done	1	2	
S112	**How long after the start of symptoms was patient hospitalized?**	One day or less……1 One to three days……2 More than three days……..3 Not clear from the chart or patient.4		
S113	**How long after arriving at the FIRST health facility was the patient hospitalized?**	1-3 hours……1 3-6 hours……2 More than 6 hours……3 Not clear from the chart or patient4		
S114	**What is the patient current treatment?**	**Medication dose per day?**		
	A.			
	B.			
	C.			
	D.			
S115	**What is patient's weight?**	____ ____. ____ Kgs		

Observer Comments About the Case:

OBSERVATION #2

CONSENT – READ THIS STATEMENT TO EACH CAREGIVER/PATIENT BEFORE CONDUCTING THE CONSULTATION:

My name is _____ and I am representing the Ghana Health Service and Quality Health Partners Project . We are conducting research on the treatment of malaria at this facility. We would like to observe your treatment and case history for our study. We will not collect any personal information about you. Your participation will help improve the quality of care at health facilities in Ghana. You do not have to participate. If you decline, this will in no way affect your ability to receive health care at this facility.

Do you have any questions? Will you participate in our study? If Yes, can you please sign the line below?

_____

S002. SIGNATURE OR THUMBPRINT OF PATIENT/CAREGIVER INDICATES CARE GIVER'S/PATIENTS AGREEMENT TO PARTICIPATE

If you have any questions about this observation you may contact the people on this card (give them a card).

NO.	QUESTIONS	CODING CLASSIFICATION		
S200a	**Gender of the Patient**	**Male (1)**	**Female (2)**	
S200b1 S200b2	**Age _____ _____ years** **If Child Under Five indicate _____ _____ months**			
		YES	**NO**	**DON'T KNOW**
S201	**Was this case laboratory-confirmed at the admission?**	**1**	**2**	**8**
S202	**Does the patient have at least one malaria smear per day of hospitalization until the parasitemia is negative?**	**1**	**2**	**8**
S203	**Assess whether the following signs or assessments were recorded on the chart.**			
	A. Respiratory Distress	1	2	8
	B. Fast breathing is ≥ 50/min for ages <12 months and ≥ 40/min for ages 1-5 years)	1	2	8
	C. Temperature ≥ 38.5 C	1	2	8
	D. Convulsion	1	2	8
	E. Lethargy, unconsciousness, or change in behavior	1	2	8
	F. Weak but fast Pulse or > 110 beats/min	1	2	8
	G. Cyanosis	1	2	8
	H Jaundice	1	2	8
	I Capillary Refill > 3 seconds	1	2	8
	J Severe Palmor Pallor / Severe Anemia	1	2	8
	K. Bruising or Bleeding	1	2	8
S204	Are Lab Results Available?	1➔S105	2➔S109	8
S205	Hematocrit	≤15%	≥15%	Test not done
S206	Hemoglobin	<5 g/dl	≥5g/dl	Test not done
S207	Hypoglycaemia (Blood sugar <40 mg/dL or 2.2mmol/L)	<40 mg/dL <2.2mmol/l	≥40 mg/dL or >2.2mmol/l	Test not done
S208	Parasite Density/Count	+ **…… ….1** ++ **……..2** +++ **……3** ++++ **……4** Result not available the same day **.**5 **Test not done**……6		

S209	Was a lumbar puncture test done?	Yes (1)	No (2)	Don't Know(8)
S210	Note other lab tests conducted for this patient's stay:			

S211	**Are the following monitored?**	**Yes**	**No**	**Frequency**
	F. Temperature	1	2	
	G. Blood Pressure	1	2	
	H. Respiratory Rate	1	2	
	I. Fluid intake/output	1	2	
	J. Lumbar Puncture done	1	2	
S212	**How long after the start of symptoms was patient hospitalized?**	One day or less……1 One to three days……2 More than three days……..3 Not clear from the chart or patient.4		
S213	**How long after arriving at the FIRST health facility was the patient hospitalized?**	1-3 hours……1 3-6 hours……2 More than 6 hours……3 Not clear from the chart or patient4		
S214	**What is the patient current treatment?**	**Medication dose per day?**		
	A.			
	B.			
	C.			
	D.			
S215	**What is patient's weight?**	____ ____. ____ Kgs		

Observer Comments About the Case:

OBSERVATION #3

CONSENT – READ THIS STATEMENT TO EACH CAREGIVER/PATIENT BEFORE CONDUCTING THE CONSULTATION:

My name is _____ and I am representing the Ghana Health Service and Quality Health Partners Project . We are conducting research on the treatment of malaria at this facility. We would like to observe your treatment and case history for our study. We will not collect any personal information about you. Your participation will help improve the quality of care at health facilities in Ghana. You do not have to participate. If you decline, this will in no way affect your ability to receive health care at this facility.

Do you have any questions? Will you participate in our study? If Yes, can you please sign the line below?

_____

S003. SIGNATURE OR THUMBPRINT OF PATIENT/CAREGIVER INDICATES CARE GIVER'S/PATIENTS AGREEMENT TO PARTICIPATE

If you have any questions about this observation you may contact the people on this card (give them a card).

NO.	QUESTIONS	CODING CLASSIFICATION		
S300a	**Gender of the Patient**	**Male (1)**	**Female (2)**	
S300b1 S300b2	**Age _____ _____ years** **If Child Under Five indicate _____ _____ months**			
		YES	**NO**	**DON'T KNOW**
S301	**Was this case laboratory-confirmed at the admission?**	**1**	**2**	**8**
S302	**Does the patient have at least one malaria smear per day of hospitalization until the parasitemia is negative?**	**1**	**2**	**8**
S303	**Assess whether the following signs or assessments were recorded on the chart.**			
	A. Respiratory Distress	1	2	8
	B. Fast breathing is ≥ 50/min for ages <12 months and ≥ 40/min for ages 1-5 years)	1	2	8
	C. Temperature ≥ 38.5 C	1	2	8
	D. Convulsion	1	2	8
	E. Lethargy, unconsciousness, or change in behavior	1	2	8
	F. Weak but fast Pulse or > 110 beats/min	1	2	8
	G. Cyanosis	1	2	8
	H Jaundice	1	2	8
	I Capillary Refill > 3 seconds	1	2	8
	J Severe Palmor Pallor / Severe Anemia	1	2	8
	K. Bruising or Bleeding	1	2	8
S304	Are Lab Results Available?	1➔S105	2➔S109	8
S305	Hematocrit	≤15%	≥15%	Test not done
S306	Hemoglobin	<5 g/dl	≥5g/dl	Test not done
S307	Hypoglycaemia (Blood sugar <40 mg/dL or 2.2mmol/L)	<40 mg/dL <2.2mmol/l	≥40 mg/dL or >2.2mmol/l	Test not done
S308	Parasite Density/Count	+ **…… ….1** ++ **……..2** +++ **……3** ++++ **……4** Result not available the same day **.**5 **Test not done**……6		

S309	Was a lumbar puncture test done?	Yes (1)	No (2)	Don't Know(8)
S310	Note other lab tests conducted for this patient's stay:			

S311	**Are the following monitored?**	**Yes**	**No**	**Frequency**
	K. Temperature	1	2	
	L. Blood Pressure	1	2	
	M. Respiratory Rate	1	2	
	N. Fluid intake/output	1	2	
	O. Lumbar Puncture done	1	2	
S312	**How long after the start of symptoms was patient hospitalized?**	One day or less……1 One to three days……2 More than three days……..3 Not clear from the chart or patient.4		
S313	**How long after arriving at the FIRST health facility was the patient hospitalized?**	1-3 hours……1 3-6 hours……2 More than 6 hours……3 Not clear from the chart or patient4		
S314	**What is the patient current treatment?**	**Medication dose per day?**		
	A.			
	B.			
	C.			
	D.			
S315	**What is patient's weight?**	____ ____. ____ Kgs		

Observer Comments About the Case:

OBSERVATION #4

CONSENT – READ THIS STATEMENT TO EACH CAREGIVER/PATIENT BEFORE CONDUCTING THE CONSULTATION:

My name is _____ and I am representing the Ghana Health Service and Quality Health Partners Project . We are conducting research on the treatment of malaria at this facility. We would like to observe your treatment and case history for our study. We will not collect any personal information about you. Your participation will help improve the quality of care at health facilities in Ghana. You do not have to participate. If you decline, this will in no way affect your ability to receive health care at this facility.

Do you have any questions? Will you participate in our study? If Yes, can you please sign the line below?

_____

S004. SIGNATURE OR THUMBPRINT OF PATIENT/CAREGIVER INDICATES CARE GIVER'S/PATIENTS AGREEMENT TO PARTICIPATE

If you have any questions about this observation you may contact the people on this card (give them a card).

NO.	QUESTIONS	CODING CLASSIFICATION		
S400a	**Gender of the Patient**	**Male (1)**	**Female (2)**	
S400b1 S400b2	**Age _____ _____ years** **If Child Under Five indicate _____ _____ months**			
		YES	**NO**	**DON'T KNOW**
S401	**Was this case laboratory-confirmed at the admission?**	**1**	**2**	**8**
S402	**Does the patient have at least one malaria smear per day of hospitalization until the parasitemia is negative?**	**1**	**2**	**8**
S403	**Assess whether the following signs or assessments were recorded on the chart.**			
	A. Respiratory Distress	1	2	8
	B. Fast breathing is ≥ 50/min for ages <12 months and ≥ 40/min for ages 1-5 years)	1	2	8
	C. Temperature ≥ 38.5 C	1	2	8
	D. Convulsion	1	2	8
	E. Lethargy, unconsciousness, or change in behavior	1	2	8
	F. Weak but fast Pulse or > 110 beats/min	1	2	8
	G. Cyanosis	1	2	8
	H Jaundice	1	2	8
	I Capillary Refill > 3 seconds	1	2	8
	J Severe Palmor Pallor / Severe Anemia	1	2	8
	K. Bruising or Bleeding	1	2	8
S404	Are Lab Results Available?	1➔S105	2➔S109	8
S405	Hematocrit	≤15%	≥15%	Test not done
S406	Hemoglobin	<5 g/dl	≥5g/dl	Test not done
S407	Hypoglycaemia (Blood sugar <40 mg/dL or 2.2mmol/L)	<40 mg/dL <2.2mmol/l	≥40 mg/dL or >2.2mmol/l	Test not done
S408	Parasite Density/Count	+ **…… ….1** ++ **……..2** +++ **……3** ++++ **……4** Result not available the same day **.**5 **Test not done**……6		

S409	Was a lumbar puncture test done?	Yes (1)	No (2)	Don't Know(8)
S410	Note other lab tests conducted for this patient's stay:			

S411	**Are the following monitored?**	**Yes**	**No**	**Frequency**
	P. Temperature	1	2	
	Q. Blood Pressure	1	2	
	R. Respiratory Rate	1	2	
	S. Fluid intake/output	1	2	
	T. Lumbar Puncture done	1	2	
S412	**How long after the start of symptoms was patient hospitalized?**	One day or less……1 One to three days……2 More than three days……..3 Not clear from the chart or patient.4		
S413	**How long after arriving at the FIRST health facility was the patient hospitalized?**	1-3 hours……1 3-6 hours……2 More than 6 hours……3 Not clear from the chart or patient4		
S414	**What is the patient current treatment?**	**Medication dose per day?**		
	A.			
	B.			
	C.			
	D.			
S415	**What is patient's weight?**	____ ____. ____ Kgs		

Observer Comments About the Case:

OBSERVATION #5

CONSENT – READ THIS STATEMENT TO EACH CAREGIVER/PATIENT BEFORE CONDUCTING THE CONSULTATION:

My name is _____ and I am representing the Ghana Health Service and Quality Health Partners Project . We are conducting research on the treatment of malaria at this facility. We would like to observe your treatment and case history for our study. We will not collect any personal information about you. Your participation will help improve the quality of care at health facilities in Ghana. You do not have to participate. If you decline, this will in no way affect your ability to receive health care at this facility.

Do you have any questions? Will you participate in our study? If Yes, can you please sign the line below?

_____

S005. SIGNATURE OR THUMBPRINT OF PATIENT/CAREGIVER INDICATES CARE GIVER'S/PATIENTS AGREEMENT TO PARTICIPATE

If you have any questions about this observation you may contact the people on this card (give them a card).

NO.	QUESTIONS	CODING CLASSIFICATION		
S500a	**Gender of the Patient**	**Male (1)**	**Female (2)**	
S500b1 S500b2	**Age _____ _____ years** **If Child Under Five indicate _____ _____ months**			
		YES	**NO**	**DON'T KNOW**
S501	**Was this case laboratory-confirmed at the admission?**	**1**	**2**	**8**
S502	**Does the patient have at least one malaria smear per day of hospitalization until the parasitemia is negative?**	**1**	**2**	**8**
S503	**Assess whether the following signs or assessments were recorded on the chart.**			
	A. Respiratory Distress	1	2	8
	B. Fast breathing is ≥ 50/min for ages <12 months and ≥ 40/min for ages 1-5 years)	1	2	8
	C. Temperature ≥ 38.5 C	1	2	8
	D. Convulsion	1	2	8
	E. Lethargy, unconsciousness, or change in behavior	1	2	8
	F. Weak but fast Pulse or > 110 beats/min	1	2	8
	G. Cyanosis	1	2	8
	H Jaundice	1	2	8
	I Capillary Refill > 3 seconds	1	2	8
	J Severe Palmor Pallor / Severe Anemia	1	2	8
	K. Bruising or Bleeding	1	2	8
S504	Are Lab Results Available?	1➔S105	2➔S109	8
S505	Hematocrit	≤15%	≥15%	Test not done
S506	Hemoglobin	<5 g/dl	≥5g/dl	Test not done
S507	Hypoglycaemia (Blood sugar <40 mg/dL or 2.2mmol/L)	<40 mg/dL <2.2mmol/l	≥40 mg/dL or >2.2mmol/l	Test not done
S508	Parasite Density/Count	+ **…… ….1** ++ **……..2** +++ **……3** ++++ **……4** Result not available the same day **.**5 **Test not done**……6		

S509	Was a lumbar puncture test done?	Yes (1)	No (2)	Don't Know(8)
S510	Note other lab tests conducted for this patient's stay:			

S511	**Are the following monitored?**	**Yes**	**No**	**Frequency**
	U. Temperature	1	2	
	V. Blood Pressure	1	2	
	W. Respiratory Rate	1	2	
	X. Fluid intake/output	1	2	
	Y. Lumbar Puncture done	1	2	
S512	**How long after the start of symptoms was patient hospitalized?**	One day or less……1 One to three days……2 More than three days……..3 Not clear from the chart or patient.4		
S513	**How long after arriving at the FIRST health facility was the patient hospitalized?**	1-3 hours……1 3-6 hours……2 More than 6 hours……3 Not clear from the chart or patient4		
S514	**What is the patient current treatment?**	**Medication dose per day?**		
	A.			
	B.			
	C.			
	D.			
S515	**What is patient's weight?**	____ ____. ____ Kgs		

Observer Comments About the Case:

A-6 Laboratory Quality Control Tool

FACILITY IDENTIFICATION	
Name of Region: _____`	FACILITY CODE ☐☐☐☐☐☐
Name of District: _____	
Name of the facility_____	FACILTY TYPE ☐
Name of Interviewer _____	OPER AUTH ☐
Date: _____	
Type of Health Facility : (1 = Teaching Hospital 2=Regional hospital; 3 = District Hospital; 4=Other Hospital 5=Polyclinic 6=Health Center 7= Maternity Home 8=Clinic 9=CHPS 10=Other _____)	
Operating Authority: 1= Government; 2=Mission/Religious 3 = Private for profit 4 = Other _____)	

CONSENT – READ THIS STATEMENT TO EACH CAREGIVER BEFORE CONDUCTING THE LAB SLIDES COLLECTION:

My name is _____ and I am representing the Ministry of Health/GHS and Partners, USAID/Quality Health Partners Project. We are conducting research on the treatment of malaria at this facility. We would like to collect information about the lab diagnoses selected patients at this facility. We are asking you to conduct any malaria tests as ordered by the provider for patients in our study. While collecting a sample for your slide, we are asking you to collect a second thin and thick blood smear on a second slide for us. We will not collect any personal information about you. Your participation will help improve the quality of care at health facilities in Ghana. You do not have to participate. If you decline, this will in no way affect your ability to receive future training or assistance at this facility. If you have any questions about this quality control process you may contact the people on this card (give them a card).

Do you have any questions for me?

Do you agree for record your findings and collect specimens for the study?

_____ _____**(date)**

100a. SIGNATURE OF INTERVIEWEE INDICATES CARE GIVER'S AGREEMENT TO PARTICIPATE

	Observation Number	M / F	Type of specie Pf, Pm, Po, Pv	Parasite count or density	Comment
Slide 001					
Slide 002					
Slide 003					
Slide 004					
Slide 005					
Slide 006					
Slide 007					
Slide 008					
Slide 009					
Slide 010					
Slide 011					
Slide 012					
Slide 013					
Slide 014					
Slide 015					
Slide 016					
Slide 017					

Slide 018					
Slide 019					
Slide 020					

B-1: Ante-Natal Care Facility Audit

FACILITY IDENTIFICATION	
Name of Region: _____`	FACILITY CODE ☐☐☐☐☐☐
Name of District: _____	FACILITY TYPE ☐
Name of the facility_____	
Date: _____	OPERATING AUTHORITY ☐
Name of Interviewer: _____	
Type of Health Facility : (1 = Teaching Hospital 2=Regional hospital; 3 = District Hospital; 4=Other Hospital 5=Polyclinic 6=Health Center 7= Maternity Home 8=Clinic 9=CHPS 10=Other _____)	
Operating Authority: 1= Government; 2=Mission/Religious 3 = Private for profit 4 = Other _____)	

NO.	QUESTIONS	CODING CLASSIFICATION	GO TO
700	Does this facility offer antenatal care?	YES, ANTENATAL ..... 1 NONE OF THESE SERVICES . 2	 ➔END

ASK TO GO TO WHERE THE MATERNAL HEALTH SERVICES ARE PROVIDED AND ASK TO TALK WITH THE MOST SENIOR HEALTH WORKER INVOLVED IN THE DELIVERY OF ANTE-NATAL HEALTH SERVICES.

I am representing the Ghana Health Service and the Quality Health Partners for this survey. We are collecting information that will help us to better understand how malaria treatment services are provided. This information will be used to design programs to improve these services. This part of the survey will ask questions about the services offered at this facility, the equipment that is available and staffing levels. It will take about 45 minutes – 1 hour to complete. All information from this survey is confidential and participation in answering questions for this survey is voluntary. You can refuse to answer any question or all the questions. We are asking for your help to ensure that the information collected is accurate. If there are sections where someone else is the most appropriate person to provide information, we would appreciate your introducing us to that person.

Do you have any questions for me? Do you agree to participate in our survey? If Yes do you please sign below?

701	SIGNATURE OF INTERVIEWEE INDICATES PARTICIPANT AGREEMENT TO PARTICIPATE

NO.	QUESTIONS	CODING CLASSIFICATION	GO TO
702	How many days in a week are antenatal care services provided at the facility?	# DAYS .... [ ]	
703	Are antenatal care services being provided at the facility today?	YES……………………….……..1 NO………………………..……...2	
704	Is focus-ANC practiced at this facility?	YES……..............……………..1 NO……………….....................…2 DON'T KNOW….....................……8	
705	How many midwives are assigned to ANC services at this facility? WRITE IN THE NUMBER. FOR NUMBERS LESS THAN 10 – WRITE A ZERO BEFORE THE NUMBER.	[ ] [ ]	

706	**Are the following services routinely available at this facility?**				
	PART OF ROUTINE SERVICES	Routinely done / Available	Not Done Routinely	Don't Know	
	a. Routine laboratory services Blood _ mps	1	2	8	
	b. Blood HB	1	2	8	
	c. Urine for RE	1	2	8	
	d. Stool for RE	1	2	8	
	e. G6PD testing	1	2	8	
	f. Iron folate routinely distributed?	1	2	8	
707	**Are the following equipment available at this facility?**				
	APPARATUS/TOOL	Available Functioning	Available **not** Functioning	Not Available	
	g. Adult weighing scale	1	2	8	
	h. Blood Pressure apparatus	1	2	8	

708	Is Intermittent Preventive Treatment (IPT) with SP provided for pregnant women at this facility?	Yes ……………………………….1 No ………………………………...2 Don't Know……………………….8	 ➔713 ➔713
709	What type of SP do you keep in stock?	Fansidar…………………………..1 Malafan……………………………2 Don't know………………………..3 Other (Specify)…………………..4 _______________________	
710	Has there been a stock out of SP in this facility in the past **6 months**?	Yes ……………………………….1 No ………………………………...2 Don't Know……………………….8	
711	What is done when there is a shortage?	Write a prescription for patient….1 Nothing……………………………2 Others (specify)…………………..3	
712	How much does SP cost in this facility?	Nothing …………………………...1 <5 Gp……..……………………...2 5 Gp – 10 Gp…………………….3 > 10 Gps………………………….4	

713	Does this facility have copies of the following: If yes, ask to see a copy	Observed or Reported Available	Not available	Not determined
	a. Standard treatment guidelines	1	2	9
	b. New anti malaria drug policy (Nov 2004)	1	2	9
	c. IPT Training Manual	1	2	9
714	How many staff have been trained in the use of IPT ?	☐☐ Don't know……99		
715	Do CHNs dispense SP in the community for IPT2 and IPT3?	YES……1 NO……2 → 717 DON'T KNOW……8 → 717		
716	How are doses given in the community reflected in the ANC register? CIRCLE ALL THAT APPLY OTHER: _____	RECORDED IN NOTEBOOK AND TRANSFERRED LATER TO ANC REGISTER……..1 A TALLY FORM IS USED AND TRANSFERRED TO ANC REGISTER……..…2 ANC REGISTER (FOR OUTREACH) USED……..3 NOT RECORDED IN MAIN REGISTER…… 4 A LIST OF MOTHERS IS TAKEN TO THE FIELD AND DOSES ARE CHECKED AGAINST NAMES….5 OTHER (SPECIFY)……6		
717	Has there been a supervisory visit for ANC services in the past **6 months** at this facility?	YES……..1 NO……2 DON'T KNOW……8		
718	Was the supervisor from this facility or from outside this facility?	THIS FACILITY……..…1 OUTSIDE THIS FACILITY……2 BOTH……...3		
719	Have you (person providing services) received any in-service training in ANC in the last **3 years**?	YES……..1 NO……2 DON'T KNOW……..…8		

Statistics (from monthly returns)

720	**Month(1)**	**ANC Registrants(2)**	**ANC Attendance(3)**	**IPT1(4)**	**IPT2(5)**	**IPT3(6)**	**# with HB at 36 weeks**	**# with HB < 7gm/dl at 36 weeks**
A	October 2007							
B	November 2007							
C	December 2007							
D	January 2008							
E	February 2008							
F	March 2008							

ANC Record Review

721	Is there a register where client information from ANC visits is recorded? IF YES, ASK TO SEE REGISTER.	YES, REGISTER SEEN……..1 YES, REGISTER NOT SEEN……2 NO REGISTER KEPT……..3	 ➔END ➔END
722	How recent is the date of the most recent entry for ANC?	WITHIN THE PAST 7 DAYS……1 > 7 DAYS……2	
723	INTERVIEWER: Does the ANC register in this facility have records on IPT services offered?	YES ……1 NO……2	 ➔END

ANC RECORD REVIEW METHODOLOGY

Take the total number of ANC registrants for the period Oct 2007 – Mar 2008 from Question 718G above. Then divide this number by 10. This is your sampling interval and will give you exactly 10 records from the register.

Then select a random number between 1 and your sampling interval. That is where you start. Record the information from that record. Then from that record, count down the number of records in your sampling interval and record the information from that record. Then count down again the number in your sampling interval and record the information from that record. Continue until 10 records from the period Oct – Dec 2007 have been sampled.

Fill in the information from your facility in the charts

Month	Number of ANC registrants	Number of ANC registrants at your facility
Oct 2007	450	
Nov 2007	275	
Dec 2007	125	
Jan 2008	250	
Feb 2008	312	
Mar 2008	157	
Total	1569	
Total / 10	1569/10 = 157	
Sampling Interval	157	

	Number to be selected in example	Your number to be selected
Record 1	(Random number between 1 and 157) = 87	
Record 2	87+157 = 244	
Record 3	244+157 = 401	
Record 4	401+157=558	
Record 5	558+157=715	
Record 6	715+157=872	
Record 7	872+157=1029	
Record 8	1029+157=1186	
Record 9	1186+157=1343	
Record 10	1343+157=1500	

No	Date of ANC1 dd/mm /yy	Age	Parity	Gest (in weeks)	Total number of ANC visits to date	FHt at last ANC visit	IPT1 If no writing indicate by --		IPT2 If no writing indicate by --		IPT3 If no writing indicate by --		ITN if there is a date or a tick in this column circle 1 for Yes if no date 2 for no.	
							Date	FHt	Date	FHt	Date	FHt	Yes	No
1													1	2
2													1	2
3													1	2
4													1	2
5													1	2
6													1	2
7													1	2
8													1	2
9													1	2
10													1	2

B-2: Ante-Natal Care Observation and Client Exit Interview

FACILITY IDENTIFICATION	
Name of Region: _____`	FACILITY CODE ☐☐☐☐☐☐
Name of District: _____	
Name of the facility_____	FACILITY TYPE ☐
Date: _____	
Name of Interviewer:_____	OPERATING AUTHORITY ☐
Type of Health Facility : (1 = Teaching Hospital 2=Regional hospital; 3 = District Hospital; 4=Other Hospital 5=Polyclinic 6=Health Center 7= Maternity Home 8=Clinic 9=CHPS 10=Other _____)	PROVIDER ☐
Operating Authority: 1= Government; 2=Mission/Religious 3 = Private for profit 4 = Other _____)	OBSERVATION ☐☐ (Number the patients sequentially as they are observed)
Provider Type: Midwife = 1, Community Health Nurse =2, CHO = 3, Other =4.	

	OBSERVE TO SEE WHETHER THE PROVIDER CARRIES OUT THE FOLLOWING ACTIVITIES		
801	**Is this the Client's first visit?**	Yes 1	No 2
802	**Routine Treatment and services for ANC related to malaria**	**Observed**	**Not Observed**
	a. Medical History Taken at first visit	1	2
	b. Obstetrical History Taken	1	2
	c. Physical examination done	1	2
803	Which laboratory investigations are ordered during the consultation you observed?	**Observed**	**Not Observed**
	A. Blood film for malaria parasites	1	2
	B. Haemoglobin level	1	2
	C. Sickling	1	2
	D. G6PD	1	2
	E. HIV status	1	2
	F. Electrophoresis		
	G. Urine Protein	1	2

Education on Malaria in Pregnancy		Observed	Not Observed
804	Is Client educated on following effects of malaria on pregnancy during the consultation?		
	A. Malaria can cause Anaemia in the woman and the effects of anemia on pregnancy	1	2
	B. That malaria may cause a spontaneous abortion	1	2
	C. That severe malaria can endanger the life of the mother and the unborn child?	1	2
	D. That low birth weight can result	1	2
IPT USE		**Observed**	**Not Observed**
805	Does service provider determine if Client is qualified for IPT by asking if client		
	A. has received treatment of SP in less than one month	1	2
	B. is taking co-trimoxazole to treat other infections	1	2
	C. is pregnant at least 16 weeks	1	2
	D. is pregnant less than 36 weeks	1	2
	E. If woman has history of allergy or is G6PD deficient	1	2
806	Does the provider counsel the woman on the possible side effects of IPT?	1	2
807	Does the provider counsel the client on what to do if she has side effects from IPT medication?	1	2
808	Does the provider give IPT1, IPT2 or IPT3 as appropriate (using DOT)?	1	2
809	Does the provider record the IPT status on the Client ANC card?	1	2
Other Preventive Measures		**Observed**	**Not Observed**
810	Does the provider discuss client use of ITN, indoor residual spray, mosquito repellants or that she should avoid staying outside from dusk until dawn?	1	2
811	Does the provider tell the client when to return for her next visit?	1	2

When the consultation concludes – politely ask the client if you can talk with her outside the consulting room.

CLIENT EXIT INTERVIEW

	ASK CLIENT THE FOLLOWING QUESTIONS		
900	How old is this pregnancy?	____ ____ weeks	
901	Can you tell me what effects malaria can have on pregnancy? DO NOT PROMPT CIRCLE ALL THAT APPLY	Anaemia…………………………...….1 Spontaneous Abortion…………..….2 Severe malaria…..………………......3 Low Birth Weight//…………………...4 Don't know/Can't remember………..5 Other (Specify……………………….8	
902	Do you sleep under an ITN all the time, sometimes, or not at all?	All the time…………………..1 Sometimes………………….2 Not at all……………………3	➔905
903	If Sometimes or Not at all, What do you do to avoid getting malaria? DO NOT PROMPT CIRCLE ALL THAT APPLY	Indoor residual Spraying…....1 Mosquito Repellents………..2 Avoids staying outside after dark……………………......3 Has screen in the house……4	
904	What are the reasons why you do not sleep under ITN all the time?	Too hot………………………1 Prefer to put my kids under net instead…………………..2 Don't have a net……………3 No room to hang a net……4 Don't like nets………………5 Other………………………..6	
905	Do you know that there is a medicine that can prevent pregnant women from getting malaria?	Yes……………………..…….1 No……………………………2	 ➔910
906	Do you know how many doses of the medicine (SP) you are supposed to take during your pregnancy to prevent malaria?	Correct (3 Doses)-…………1 Incorrect (Not equal to 3 doses)................................2 Don't know…………………..8	
907	Were you given the medicine (SP) to prevent malaria today?	Yes……………….………….1 No……………………………2	 ➔910
908	Did you take it in front of the midwife or were you given it to take home or something else?	Given water to take in front of midwife……………………..1 Given to take at home……..2 Asked to buy at pharmacy and take…………………………3 Other……………………….…4 (Specify) _________________________	
909	What were you told about the side effects from IPT medication?	Rare, but serious skin reactions……………………1 Itching………………………2	

		Nausea or vomiting……...3 Blurred vision……4 Not told anything……5 Other……6	
910	May I see your ANC card please? Note the dose the patient has been given to date.	IPT1……...1 IPT2……2 IPT3……3 Not Noted on Card……..4 No dose given ……5	 ➔911 ➔911 ➔911
911	Ask **Only If client has had only IPT1 or IPT2**. When were you asked to return for your next dose of IPT?	In a month's time……1 More than a month……2 Can't remember……3 Was not told……4	
912	In general, were you satisfied with the care you received in this facility today?	Yes……1 No……2	➔END ➔913
913	If no, what were you unsatisfied about?	_____ _____ _____ _____ _____ _____	

Thank Client for Her Time

IF THIS IS THE LAST CONSULTATION OBSERVED. HOW MANY REMAINING ANC PATIENTS REMAIN TO BE SEEN BY THIS PROVIDER AT THE TIME YOU CLOSED?

_____