

Feasibility of Introducing ACTs and RDTs in Private Sector Pharmacies and Medicine Shops in Montserrado County, Liberia: A Qualitative Study

April 2013



National Malaria Control Program MOHSW



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Feasibility of Introducing ACTs and RDTs in Private Sector Pharmacies and Medicine Shops in Montserrado County, Liberia: A Qualitative Study

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About SIAPS

The goal of the Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program is to assure the availability of quality pharmaceutical products and effective pharmaceutical services to achieve desired health outcomes. Toward this end, the SIAPS result areas include improving governance, building capacity for pharmaceutical management and services, addressing information needed for decision-making in the pharmaceutical sector, strengthening financing strategies and mechanisms to improve access to medicines, and increasing quality pharmaceutical services.

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Key Words

Liberia, Montserrado County, malaria, ACTs, RDTs, private sector, case management, diagnosis, treatment

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ACRONYMS AND ABBREVIATIONS

ACT	artemisinin-based combination therapy
AS/AQ	artesunate/amodiaquine
BCC	behavior change communication
CQ	chloroquine
GI	group interview
IEC	information, education, and communication
LMHRA	Liberia Medicines and Health Products Regulatory Authority
LRD	Liberian dollar
MIS	Malaria Indicator Survey
MOHSW	Ministry of Health and Social Welfare
MSH	Management Sciences for Health
NMCP	National Malaria Control Program
ORS	Oral rehydration salts
PBL	Pharmacy Board of Liberia
PMI	President's Malaria Initiative
RDT	rapid diagnostic test
SDSI	Sustainable Drug Seller Initiatives
SIAPS	Systems for Improved Access to Pharmaceuticals and Services Program
SP	sulfadoxine-pyrimethamine
SSI	semi-structured interview
UL-PIRE	University of Liberia-Pacific Institute for Research and Evaluation
USAID	US Agency for International Development
USD	US dollar
WHO	World Health Organization

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Roles and Responsibilities

At the time of the study, Dr. Joel Jones was the Program Manager of the NMCP in Liberia and provided overall leadership for the study and coordinated inputs of the NMCP for the protocol and tools and final report.

Rima Shretta provided technical leadership for development of the study protocol and tools as well as field coordination for the data collection. She conducted the training for the data collectors as well as the data analysis and draft of the report.

Mr. D. Levi Hinneh (Research Officer, NMCP) and Mrs. Jamesetta Gilayeneh-Smith (Coordinator for Private Sector, NMCP) provided inputs into the protocol and tools and supervision during the fieldwork, and they participated in the data collection, analysis and review of the final report.

Menmon Dunah provided field supervision for one data collection team and technical assistance for data collection, analysis, and coordination of all partner inputs into the tools and final report.

Kwesi Eghan was the focal point for liaison with the USAID Mission to Liberia, responsible for the programmatic management of this activity. He supported the in-country validation of tools with the NMCP and key stakeholders.

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EXECUTIVE SUMMARY

Following World Health Organization (WHO) guidelines, Liberia changed its malaria treatment policy in 2003 and adopted a more efficacious artesunate-amodiaquine (AS/AQ) fixed-dose combination as the first-line treatment for uncomplicated malaria. The Ministry of Health and Social Welfare (MOHSW), supported by the Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program with funding from the US Agency for International Development's President's Malaria Initiative (USAID PMI), is seeking to improve case management of malaria in the private sector by providing subsidized artemisinin-based combination therapy (ACT) and rapid diagnostic tests (RDTs) in the private sector. To this end, Liberia's National Malaria Control Program (NMCP) requested that SIAPS undertake a study to explore the feasibility and willingness of private sector pharmacies and medicine shops in the Greater Monrovia and rural Montserrado areas of Montserrado County, Liberia, to perform RDTs and to select appropriate products to recommend for malaria treatment for customers to purchase.

The study was conducted in October 2012, using qualitative research techniques in the community and at the provider level. Findings indicated that radio and health facilities were the most common source for health and malaria information. People generally trusted messages from the MOHSW. Most respondents seemed to respect the health messages originating from the ministry and stated that they were likely to adopt the behaviors recommended. Community members in urban areas such as Greater Monrovia were more likely to use medicine stores and pharmacies than those in rural areas such as St. Paul. The rate of use of "street sellers" or "black baggers" appeared greater in urban Greater Monrovia than in rural St. Paul. Public facilities were considered better than medicine stores and pharmacies in rural St. Paul because they were free and they were more professional. Young children are often taken to public health facilities whereas adults more often access treatment from medicine stores and pharmacies.

Chloroquine (CQ) and amodiaquine are available for sale at medicine stores and pharmacies at prices of 15–40 Liberian dollars (LRD); AS/AQ costs only 50 percent more than CQ. AS/AQ is referred to as "amodiaquine" particularly by community members and is often dubbed "I must die quick" because of the product's perceived side effects. Despite the real or perceived side effects of AS/AQ or "amodiaquine," the majority of respondents in medicine stores and pharmacies and in the community consider it as being most effective for the treatment of uncomplicated malaria.

Most providers and community members were very accepting of a test to diagnose malaria; however, some providers were not supportive of an intervention requiring a positive test before treatment. The use of RDTs found greater general acceptance in medicine stores and pharmacies in Greater Monrovia than in rural St. Paul, but training of medicine store and pharmacy workers for malaria testing was considered to be crucial.

The study concluded that medicine stores and pharmacies are a valuable source of treatment and that the MOHSW enjoys a high status among community members that should be taken advantage of by reinforcing key messages. A clear plan for supervision as well as inspection and

enforcement by the Pharmacy Board of Liberia (PBL) and the Liberia Medicines and Health Products Regulatory Authority (LMHRA) should be developed and implemented. In addition, a mechanism should be developed to determine price ceilings for ACTs and RDTs to prevent providers from overcharging. Training and messages to providers should include the potential value of their participation in the intervention and the potential benefits of inspiring trust by community members. Messages will need to focus on medicine store and pharmacy staff being trained in the use of ACTs and RDTs. The LMHRA and the PBL should regularly inspect medicine stores and pharmacies to ensure minimum quality standards, and community members should be made aware of this fact. Each medicine store and pharmacy with trained staff should carry a sign indicating staff has been trained to use RDTs and give ACTs.

“AS/AQ” is not known. Most respondents referred to the product as “amodiaquine.” An easy and commonly accepted name should be created to refer to AS/AQ. Messages for AS/AQ should be specific to AS/AQ as the recommended first-line treatment for malaria and not generally refer to ACTs. The recommended price ranges for AS/AQ are as follows: adult treatment: approximately LRD 50; pediatric treatment: approximately LRD 25; RDTs: LRD 25–75. Incentives of between LRD 10 and LRD 20 should be built into the RDT prices to include time spent on performing the test.

SUMMARY OF FACILITATING FACTORS AND BARRIERS TO ACT AND RDT USE IN MONTSERRADO COUNTY, LIBERIA

Factor	Facilitators	Barriers
General	<ul style="list-style-type: none"> • High community ownership rates of radios—potential medium for transmitting education messages • Good trust of MOHSW and health messages originating from it 	<ul style="list-style-type: none"> • Sustainability issues
General perceptions on the use of medicine stores and pharmacies	<ul style="list-style-type: none"> • Existing important source of care for malaria treatment • Good and convenient opening hours • Well accepted, especially in urban areas 	<ul style="list-style-type: none"> • Medicine stores and pharmacies less accepted as quality source of care in rural areas
General management of malaria	<ul style="list-style-type: none"> • Good knowledge of malaria signs and symptoms at provider and community levels 	<ul style="list-style-type: none"> • Some reinforcement still needed
Perceptions of antimalarials and ACTs	<ul style="list-style-type: none"> • ACTs considered most effective treatment for malaria • ACTs currently cost only 50 percent more than CQ; subsidy needed may not be as large as initially thought • Patients willing to pay for quality treatment, particularly in urban areas 	<ul style="list-style-type: none"> • CQ, amodiaquine, and artesunate oral monotherapy still used for malaria treatment • Perceived side effects of AS/AQ require information, education, and communication/behavior change communication (IEC/BCC) • AS/AQ known as “amodiaquine” and not as AS/AQ; need to build loyalty to product
Perceptions of RDTs and testing	<ul style="list-style-type: none"> • High level of awareness of RDTs • Patients likely to present for testing at medicine stores and pharmacies • High level of willingness to perform test at provider level • Providers open to training • Good level of understanding of job aids 	<ul style="list-style-type: none"> • Patients likely to demand AS/AQ with a negative RDT • Some resistance at provider level of regulation of testing before treatment • Time taken for performing test • Training needed • Some issues with space limitations

INTRODUCTION

Background

Following WHO guidelines, Liberia changed its malaria treatment policy in 2003 and adopted more efficacious ACT as the first-line treatment for uncomplicated malaria, specifically AS/AQ. With support from Global Fund to Fight AIDS, Tuberculosis and Malaria grants, the PMI, and other donors, the new policy has been widely implemented in the public sector, including training health workers on new treatment guidelines, creating community awareness, and supplying all public health facilities with ACT stocks. Data from the 2011 Malaria Indicator Survey (MIS)¹ indicate that 70 percent of Liberian children under five years of age with fever who received an antimalarial drug received ACTs, the recommended treatment. This is a dramatic increase since 2009, when just 44 percent of children who received an antimalarial received an ACT.²

Malaria is the leading cause of attendance in outpatient departments and is the number-one cause of inpatient deaths. Hospital records suggest that more than 30 percent of all inpatient deaths are attributable to malaria with children being most affected. Although curable and preventable, malaria remains a major public health problem in Liberia, where it takes its greatest toll on young children and pregnant women. Children living in rural areas are twice as likely to have malaria as children living in urban areas (35 percent compared with 17 percent). Overall, 8 percent of Liberian children are severely anemic. Severe anemia is most common in the North Central and South Central regions. Furthermore, as in many endemic countries in sub-Saharan Africa, self-treatment of malaria-like symptoms through the retail sector (medicine stores and pharmacies) is common, and treatments dispensed are not always adequate,³ appropriate, or effective for treating malaria⁴ and often result in treatment of nonmalaria illnesses with antimalarial medicines. Currently, 46 percent of the population in Liberia accesses antimalarial medications through the private sector.⁵ Presumptive treatment for malaria based on fever and other symptoms is common with little or no use of confirmatory blood tests.

Over- or undertreatment leads to a waste of limited resources and accelerates the emergence of resistance to ACTs. In addition, an incorrect malaria diagnosis could lead to delayed treatment for other serious illnesses. Studies have shown that as many as 80 percent of fevers treated as malaria are actually caused by other infections.⁶ In children, respiratory and gastrointestinal

¹ National Malaria Control Program (NMCP) [Liberia], Ministry of Health and Social Welfare, Liberia Institute of Statistics and Geo-Information Services (LISGIS), and ICF Macro. 2011. *Liberia Malaria Indicator Survey 2011*. Monrovia, Liberia: NMCP, LISGIS, and ICF Macro.

² National Malaria Control Program (NMCP) [Liberia], Ministry of Health and Social Welfare, Liberia Institute of Statistics and Geo-Information Services (LISGIS), and ICF Macro. 2009. *Liberia Malaria Indicator Survey 2009*. Monrovia, Liberia: NMCP, LISGIS, and ICF Macro.

³ V. D'Acremont, C. Lengeler, H. Mshinda et al. 2009. Time to move from presumptive malaria treatment to laboratory-confirmed diagnosis and treatment in African children with fever. *PLoS Med* 6:e252.

⁴ Manuel W. Hetzel, Angel Dilip, Christian Lengeler et al. 2008. Malaria treatment in the retail sector: Knowledge and practices of drug sellers in rural Tanzania. *BMC Public Health* 8:157.

⁵ Ministry of Health and Social Welfare, Liberia National Malaria Strategic Plan 2010–2015.

⁶ NMCP, MOHSW, LISGIS, and ICF International, *Liberia Malaria Indicator Survey 2011*.

infections are most common, and their mismanagement with antimalarials could lead to complications or even death. This provides compelling evidence for better overall case management of patients with fever by expanding access to diagnosis and treatment, in line with current WHO recommendations. RDTs for malaria are a simple technology with the potential to expand access to effective and affordable malaria diagnosis. However, the introduction of RDTs presents some challenges. For their introduction to be cost-effective, only patients with a positive result should be prescribed antimalarials.⁷ Studies have shown that despite the availability of diagnostics, antimalarials have been given to 35 to 55 percent of RDT-negative patients.⁸ For the introduction of RDTs into the private sector to have the intended effect of improving case management of malaria, behavior change of providers and recipients of the products must be emphasized to ensure adherence to treatment guidelines.



Source: National Malaria Control Program (NMCP) [Liberia], Ministry of Health and Social Welfare, Liberia Institute of Statistics and Geo-Information Services (LISGIS), and ICF Macro. 2011. *Liberia Malaria Indicator Survey 2011*. Monrovia, Liberia: NMCP, LISGIS, and ICF Macro.

Figure 1: Liberia's regions

⁷ H. Hopkins, C. Asimwe, and D. Bel. 2009. Access to antimalarial therapy: accurate diagnosis is essential to achieving long term goals. *BMJ* 339: b2606, doi:10.1136/bmj.b2606.

⁸ D.H. Hamer, M. Ndhlovu, D. Zurovac, et al. 2007. Improved diagnostic testing and malaria treatment practices in Zambia. *JAMA* 297:2227–31.

Liberia's MOHSW is committed to increasing access to prompt and effective treatment by 80 percent of the population by 2010 (2010–2015 National Malaria Strategic Plan) and to sustaining at this level to 2015 by implementing multiple interventions, including working with the private sector. ACTs, however, are generally more expensive than previously used antimalarials; thus the majority of private sector outlets stock CQ and other oral monotherapies. In this area, the MOHSW, with support from SIAPS under USAID PMI funding, is seeking to provide better case management of malaria in the private sector.

A baseline study⁹ carried out in 2010 collected basic information on medicine stores and pharmacies in Montserrado County. The supply chain in these outlets showed that CQ was still the most accessible antimalarial in private pharmacies and medicine shops in Montserrado County. AS/AQ was also available in more than half the retail outlets surveyed. Sixty percent of providers also admitted to selling the medicines based on the amount of money the clients had. This study recommended that the National Drug Service remain the custodian of ACTs procured for the private sector. Selected wholesalers would buy ACTs from the National Drug Service and distribute them to the rest of the pharmaceutical retail system.

In line with the Technical Coordination Committee on private sector ACT initiatives, the NMCP and MOHSW have recently reached an agreement to allow the introduction of RDTs in the private sector. To this end, the NMCP requested that SIAPS undertake a study to explore the feasibility and willingness of private sector pharmacies and medicine shops in Liberia to perform RDTs and to select appropriate products for malaria treatment to recommend for customers to purchase.

Objectives of the Study

Overall Objective

The overall objective of the current study was to explore the feasibility and willingness of private sector pharmacies and medicine shops in Montserrado County to perform RDTs, to select appropriate products according to national treatment guidelines, and to determine factors necessary for feasibility, sustainability, and effectiveness.

Specific Objectives

1. Describe the current process by medicine store and pharmacy owners and dispensers of selecting appropriate products for malaria treatment to recommend for clients to purchase.
2. Describe the pharmacy and medicine store infrastructure to handle RDTs and ACTs.
3. Assess the awareness, perceptions, and acceptance of ACTs and RDTs among medicine shops, pharmacies, and communities.

⁹ A. Mwansasu, D. Sumo, and J. T. Harris. 2010. *Situational Analysis of the Pharmaceutical Sector and Access to Antimalarial Medicines in Liberia*. Submitted to the U.S. Agency for International Development by the Strengthening Pharmaceutical Systems (SPS) Program. Arlington, VA: Management Sciences for Health.

4. Explore the basic training needs on ACTs and RDTs among medicine store and pharmacy staff and inform current treatment curriculum as needed.
5. Assess the affordability of ACTs and RDTs among providers and end users.

Research Questions

1. What types of training currently exist for providers?
2. What would motivate medicine stores to perform RDTs and select appropriate products for malaria treatment?
3. What are the factors that help and hinder appropriate case management in the private sector?
4. How willing are patients to receive RDTs before a recommendation of appropriate products for malaria treatment in the private sector?
5. How much will medicine shop clients be willing to pay for RDTs?

Study Design

The study was predominantly qualitative in nature. Individual and group semi-structured interviews (SSIs) were triangulated in an iterative, cumulative process to limit structural bias.

Methodology

Preparation phase: The study protocol was developed and validated with partners (NMCP, PBL, University of Liberia–Pacific Institute for Research and Evaluation [UL-PIRE]) and other relevant stakeholders in a one-day meeting in Monrovia. The protocol, complete with draft data collection tools, was submitted for ethical clearance to the UL-PIRE Internal Review Board.

Field phase: SSIs and group interviews (GIs) were conducted at the provider and community levels in Montserrado County. Findings from the study are expected to inform the current efforts to introduce RDTs and ACTs in medicine stores and pharmacies in the private sector.

Data Collection at the Provider Level

SSIs were conducted with private providers to determine responses to the specific objectives 1, 2, and 3 above as well to determine strategies for sustainability, cost-recovery, and incentives.

Data Collection at the Community Level

GIs were conducted with communities (potential patients and caretakers) to determine responses to specific objectives 3, 4, and 5 and to research questions 3 and 4 above. Perceptions were ascertained about using RDTs and particular treatments recommended for malaria.

SSIs were conducted with communities (potential patients and caretakers) to determine responses to the specific objectives 3, 4, and 5 and research questions 1–5 above.

Table 1: Summary of Information to Be Collected with the Various Methods

Method	Study objective	Research questions
Individual SSI	3, 4, 5	1–5
GI	3, 4, 5	3, 4,5

Data Collectors

Six data collectors were recruited for 10 days (including training and time required for travel). Two people conducted each interview (one to ask questions and the other to transcribe). The data collectors were trained in the tools and guides using interactive methodologies over two days. Role-play was used in the process. They were also trained in administering the informed consent form.



Figure 2: Training of data collectors

Pretesting

The tools were modified into “Liberian English” and pretested in the community and at provider level after which minor adjustments were made to language.

Sampling

The study focused on Montserrado County (see figure 1) because of its large number of medicine stores and pharmacies compared with other counties and because the pilot intervention would begin in this county. Located on the coast in the northwestern third of Liberia and home to the capital, Monrovia, Montserrado is the smallest county by size but the largest by population, with about 1,118,241 (approximately 33 percent) of Liberia's total population.¹⁰ Montserrado is densely populated and divided into the Greater Monrovia area (urban Montserrado County) and rural Montserrado County, and outlets are well dispersed across the county. Most pharmacies are located along major highways, while medicine stores are clustered within communities. The medical stores and pharmacies are the most common point of health access for much of the population in Montserrado County, thereby presenting an important opportunity to scale up access to effective malaria treatment. Such an intervention will increase the technical capacity of the outlets to provide appropriate treatment for uncomplicated malaria and strengthen referral for severe malaria cases.

A mapping of private outlets in Montserrado County March 2012 by the Sustainable Drug Seller Initiatives (SDSI) program in collaboration with the PBL and the LMHRA showed the county has 750 outlets: 113 pharmacies and 637 medicine stores. The database created from this mapping exercise was considered the source for selection of medicine stores and pharmacies for this feasibility study.

These outlets were randomly selected from the Greater Monrovia area and rural Montserrado County in collaboration with the NMCP. The PBL's regulations require that only pharmacies are allowed to operate in central Monrovia, and therefore all of the pharmacies considered during the feasibility study were randomly and geographically selected from central Monrovia. The number of outlets from each of the towns was purposefully selected based on the size of the towns. From these 637 medicine shops and 113 pharmacies, 30 facilities and 30 communities (based on Sample Size Calculator by RaoSoft, Inc., www.raosoft.com/samplesize.html) were selected. Considering the geographic distribution of the medicine stores, 9 medicine stores were randomly selected from St. Paul River District to reflect rural Montserrado County. The remaining medicine stores were randomly selected from the rest of the zones of Montserrado County, excluding the West Point and Bushrod Island zones, which were not considered under this feasibility study.

Thirty SSIs were conducted with the owners and dispensers in each of the outlets: 21 in Greater Monrovia and 9 in St. Paul District. This selection is based on three factors: the large number of medicine stores compared to the pharmacies, the number of clients who access the medicine stores, and the population and number of stores in each district.

Neighboring households and community members located in a 100- to 200-meter radius buffer around the outlets were purposefully selected and asked to participate in the study. Inclusion criteria included—

¹⁰ National Malaria Control Program (NMCP) [Liberia], Ministry of Health and Social Welfare, Liberia Institute of Statistics and Geo-Information Services (LISGIS), and ICF Macro. 2008. *Liberia Malaria Indicator Survey 2008*. Monrovia, Liberia: NMCP, LISGIS, and ICF Macro.

- Caregivers of children age under five years of age
- Men
- Women of reproductive age
- Pregnant women

Thirty interviews were conducted with community members (21 in Greater Monrovia and 9 in St. Paul). Six GIs were conducted: two in St. Paul and four in Great Monrovia. Each GI consisted of 9–12 participants. Four teams of data collectors (tables 2 and 3) were responsible for data collection, each accompanied by a supervisor who checked the information for completeness at the end of each day.

Tables 2 and 3 summarize the sampling and schedule for data collection of GIs and SSIs.

Table 2: Schedule for Data Collection: GIs

Day	Community	District/Area	Number of participants in GI
1	12th Street, Sinkor	Central Monrovia District, Greater Monrovia Area	10
2	Tusafield	Gardnersville District, Greater Monrovia Area	11
3	Barzoa Town	St. Paul River District, Rural Montserrado Area	10
	St. Kizito community, Gobachop	Paynesville District, Greater Monrovia Area	12
4	Kpallah, Brewerville	St. Paul River District, Rural Montserrado Area	13
5	Kings Grey Town, Paynesville	Paynesville District, Greater Monrovia Area	11

Table 3: Data Collection Sites for SSIs

Day	Team 1		Team 2		Team 3		District Area
	Facility	Community	Facility	Community	Facility	Community	
1	I.F.K. Medicine Store	Siafa Town Left Bank Hotel Africa 1	William Medicine Store	VOA Road, Brewersville	J.K.K. Medicine Store	Parker Corner, Brewersville 1/1	St. Paul River District, Rural Montserrado
2	Queens Medicine Store/	Fendell	Regesa Medicine Store	Kingsville	Ma Finda Community. Medicine. Store	Cadwell, Upper Johnsonville	Careysburg, Todee, St. Paul River District, Rural Montserrado
3	A.B.K. & Son Medicine Store	VOA Camp 1, Brewersville	Queen Medicine Store	Mt. Barclay, Johnsonville	Kenneth Medicine Store	Youth camp, Bensonville	Careysburg, Todee, St. Paul River District, Rural Montserrado
4	D & Sue Medicine Store	Joe Bar	Favorite Medicine. Store	Duport Road	Good Service Medicine Store	Dwuazon	Paynesville District, Greater Monrovia
	IFAB Medicine Store	GSA Road	Motoroma Medicine Store	Gobachop, Red-light	Helena's Medicine Store	ELWA Market	
5	M. Sesay Medicine Store	Boleva Rd 72nd	True Medicine Store	Jacob Town	Ma J. Medicine Store	Pipeline Road	Paynesville District, Greater Monrovia
	D. Sack Medicine Store/	New Georgia Estate	F.T. Kambo Medicine Store	Barnesville Estate, Johnsonville Rd	E K'S Medicine Store/	Chicken Soup Factory	Gardnersville District, Greater Monrovia
6	Good Neighbor Medicine Store	Jallah Town, Sinkor	J. Kollie Medicine Store	Sinkor 12th Street Copper Hospital	New Life Medicine Store	Central Lakpazee, Sinkor	Central Monrovia District, Greater Monrovia
	B. K. Pharmacy/	Broad Street	Carvai Medicine Store	Chugbor, Sinkor Old Rd	Angel Medicine Store	Sinkor, Fiamah	Central Monrovia District, Greater Monrovia
7	Eamamah Pharmacy	Newport & Randall Streets, Monrovia	Konkpama Pharmacy	Mamba Point, Monrovia	G & G Pharmacy	Maternity Community, Monrovia	Central Monrovia District, Greater Monrovia

Data Management

Audio recorded data were transcribed daily: experienced staff transcribed the data into a Microsoft Word document that was backed up daily. All recorded and transcribed data were anonymized using a study code so that confidentiality was protected. Supervisors and field coordinators were responsible for maintaining privacy and confidentiality. GIs were conducted in the two districts at an appropriate, central location. Refreshments were provided to participants during group discussions.

Data Analysis

Audio-recorded data from the GIs were transcribed daily into a Microsoft Word document, which was backed up daily. All recorded data and transcribed data were anonymized using a study code so that confidentiality was protected. Transcripts were read alongside notes taken during the interviews that might not have been captured. A rolling data analysis method was used with findings and perceptions being discussed daily among the study team. SIAPS and the NMCP further analyzed data on a daily basis. Data analysis was carried out manually and using Microsoft Excel. The process of analysis involved familiarization with the data, development of initial codes based on the research questions and issues emerging from the data, refinement of codes, and their allocation to broad common themes. These were categorized and summarized into key factors related to the introduction of subsidized ACTs and RDTs into retail outlets. Any seemingly discrepant findings were interpreted as contradictory yet valid perspectives and experiences in the study population. The transcripts of these interviews were analyzed using Giorgi's phenomenological method, which uncovers meanings through the identification of essential themes.

Data obtained from the SSIs and GIs in the communities were compared for purposes of triangulation. This process of triangulation ensured completeness and validity of the findings from each source.

Ethical Considerations

Prior to the study, ethical review and approval was received by the University of Liberia–Pacific Institute for Research and Evaluation Internal Review Board (UL-PIRE IRB) in accordance with title 45 of the *US Code of Federal Regulations*, part 46. All potential interviewees were informed before the start of the interview about the project goals, the topics and type of questions, and their right to refuse, interrupt the conversation, or withdraw from the interview at any point. They were informed of the intent to use results for scientific publications and reports to the health authorities. Confidentiality of the respondent was respected, and participation was voluntary. Ethical consent forms were issued and signed before interviews commenced (annex 1).

Expected Application of Results

Information gathered from this study will provide data that will further inform the introduction of subsidized ACTs and RDTs into medicine stores and pharmacies.

Information on the use in medicine stores and pharmacies and perceptions toward the introduction of ACTs and RDTs in this sector may be submitted to peer review publications after the necessary approvals from funders. Results will further inform and strengthen the development of appropriate training and communication materials to evaluate the uptake of subsidized ACTs and RDTs among the target population.

Specifically, the findings will inform the future intervention in the following areas—

- Reviewing training materials for providers
- Strengthening design of IEC/BCC materials for providers and the community
- Documenting challenges that may be faced during the project
- Designing appropriate pricing strategies for subsidized ACTs and RDTs
- Generating information that will provide evidence for future policy changes in malaria case management

Study Limitations

Given that the study was conducted in Montserrado County, the findings will not be representative of Liberia in general. Broad inferences will be derived from the information collected on willingness to pay, but a specific price will not be set solely on the basis of this information. The study team understands the limitations of observing how the provider understands RDT instructions without actually performing the test.

Proportions or percentages are sometimes used to indicate magnitude and trends. These should not be taken to represent percentages in the entire population.

Timeline

This study commenced immediately after receiving the ethical approval on October 15, 2012. Training and data collection were done in two weeks and completed on October 26, 2012, followed by analysis, and reporting and dissemination.

Organization of the Report

This report summarizes the main findings from the feasibility study in Liberia. The next section presents some background information with general characteristics of the counties, context, and populations interviewed, including the use of public channels for health education. General perceptions and use of medicine stores in the community as well as their suitability for the intervention are then discussed. The following section summarizes the general management of malaria at the provider and community levels. Perceptions of ACTs in stores and the community including acceptable price points for the subsidy and training needs are summarized next. The final section summarizes perceptions of RDTs in stores and the community, including acceptable price points for the subsidy and training needs and safe disposal of sharps.

Each section is organized as follows—

- Summary of main findings
- Program implications and recommendations
- Detailed discussion of findings



Figure 3: Research team

GENERAL INFORMATION

Summary of Findings

- More men were available for interviews in Greater Monrovia because men worked in nearby schools or clinics whereas more women were available in rural Montserrado County.
- The radio was the most common source for health and malaria information as well as announcements and recommendations on treatment from the MOHSW. The other most common sources of information were health facilities and posters or billboards, particularly in public health clinics and the community, as well as community “animators” who pass door-to-door health information.
- Messages from the MOHSW were generally trusted. Most respondents seemed to respect the health messages originating from MOHSW and stated that they were likely to adopt the behaviors recommended.
- In rural St. Paul, the registrar of the public clinic held a daily devotion and awareness of health issues and was an important source of health education and information in this district.
- Most medicine stores obtained their products from pharmacies that served as wholesalers, as well as other local distributors.
- The level of education of providers in pharmacies was higher than in medicine stores.
- There was no significant difference in education between men and women in medicine stores and pharmacies or among the districts.
- There was some concern among community members that providers may overcharge for the subsidized products; they recommended that the MOHSW set maximum prices.
- Providers were concerned about the sustainability of the intervention and that frequent stock-outs may cause customers to lose confidence.
- Many providers in medicine stores and pharmacies treated side effects of medications with oral rehydration salts (ORS), antibiotics, or steroids.
- Street vendors were a common source of medicines.

Incidental Finding

- The use of nets for their role in malaria prevention was well understood and valued.

Program Implications and Recommendations

- IEC messages should be communicated via radios and community animators as well as posters and providers in health facilities.
- Medicine stores and pharmacies were a valuable source of treatment for many ailments.

- The MOHSW enjoys a high status among community members that should be taken advantage of by reinforcing messages in the name of MOHSW.
- Providers should be trained to refer any side effects rather than treating them with ORS, antibiotics, or steroids.
- Community messaging should include the potential harm of substandard medicines sold by street vendors.
- The sustainability issue should be addressed with the providers.
- A clear plan for supervision as well as inspection and enforcement by the PBL and LMHRA should be developed and implemented.
- There should be mechanism to determine price ceilings for ACTs and RDTs to prevent providers from overcharging.
- Training and messages to providers should include the value of inclusion in the intervention and the potential additional benefits of inspiring trust in them by community members.
- Links with SDSI outlets may be made to leverage training (a prerequisite?).
- The packs of AS/AQ sold in the private sector should be easily distinguishable from those available in the public sector.

Detailed Discussion of Findings

Demographic Characteristics of People Interviewed

Table 4: Proportion of Males vs. Females

Gender	Community SSI*	GIs
Male	2/28	20/67
Female	26/28	47/67

*Two not recorded.

Table 5: Education of Dispensers in Medicine Stores and Pharmacies

Education level	Medicine stores	Pharmacies
Proportion of respondents who did not go to school	0/26	0/4
Proportion of respondents who went to primary school	8/26	0/4
Proportion of respondents who went to secondary school	16/26	2/4
Proportion of respondents who went to college	2/26	2/4

Many respondents at the provider and community levels were women. Half (2/4) the respondents in pharmacies went to secondary school and the remainder to college. None was just primary school educated. The majority of providers in medicine stores (16/26) went to secondary school while many (8/26) went to primary school. The qualification of attendants at the provider level ranged from high school education to a nursing assistant and a physician assistant. Levels of provider education did not appear to differ significantly among the different districts. A small proportion of providers in the outlets had either gone through SDSI or NMCP training. Most respondents suggested that the intervention would be improved by increasing awareness in the community on effective diagnosis and treatment.

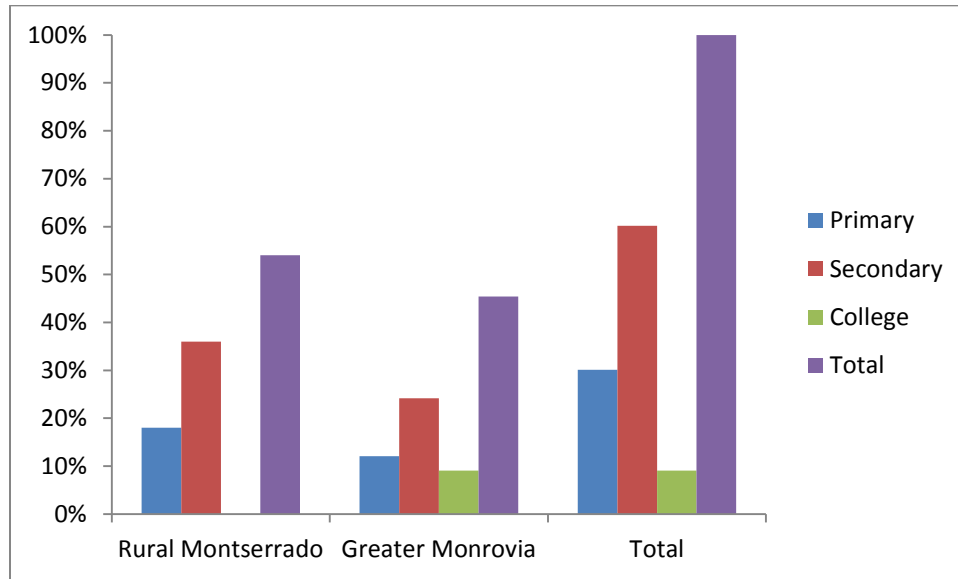


Figure 4: Education levels of dispensers working in medicine stores

Table 6: Education of SSI respondents in community

Education source	Rural Montserrado	Greater Monrovia	Total
Proportion of respondents whose highest qualification was primary school	—	—	5/30 [M: 0; F: 5]
Proportion of respondents whose highest qualification was secondary school	—	—	22/30 [M: 2; F: 20]
Proportion of respondents whose highest qualification was college	—	—	1/30 [M: 0; F: 1]
Proportion of respondents who get their health/malaria information from various sources	Radio: 1/30 TV: 0/30 Health facilities: 6/30 Other: 1/30	Radio: 4/30 TV: 1/30 Health facilities: 15/30 Other: 0/30	Radio: 5/30 TV: 1/30 Health facilities: 21/30 Other: 3/30

Most people from GIs said they get their health information from the radio and from posters located in marketplaces, schools, and work places. Some get information from clinics or hospitals and others from health workers raising awareness in the community. Drama was indicated as an effective means of communication. In Kings Grey community in Greater Monrovia, Oxfam had employed three community animators who disseminated information on health and particularly diarrhea door-to-door. While the team was in the Kings Grey community, the community leader also received a text message from Lonestar on the Cellcom network with a reminder of the polio vaccination campaign.

In the medicine stores and pharmacies, on average half the consultations were because of malaria. Medicine stores were open for longer hours than pharmacies: 75 percent of pharmacies and 67 percent of medicine stores were closed on Sundays; 100 percent of pharmacies and 84 percent of medicine stores were closed on public holidays.

Some providers were concerned about the notion of introducing a subsidy that will not be sustained and thus make the customer lose confidence in the system.

Most medicine stores obtained their supply of products from Abeer Pharmacy, Lucky Pharmacy, B-Kay Pharmacy, Panka Pharmacy, Diamond Pharmacy, Delta Pharmacy, and Sonia Pharmacy.

GENERAL PERCEPTIONS AND USE OF HEALTH FACILITIES, MEDICINE STORES, AND PHARMACIES

Summary of Findings

- Most community members do not differentiate between medicine stores and pharmacies. They refer to both kinds of outlets as drug stores or drug shops.
- Community members in urban areas such as Greater Monrovia were more likely to use medicine stores and pharmacies than those in rural areas.
- Although community members in rural Montserrado often filled their prescriptions in medicine stores and pharmacies when the public clinics did not have stock, they were not open to using medicine stores and pharmacies as the first point of care for diagnosis and treatment.
- Community members in rural St. Paul were less trusting of “drug shops” than in Greater Monrovia. They identified profit as the primary motive of medicine stores and pharmacies rather than professionalism.
- What was more important in rural areas such as St. Paul was the training of the medicine store and pharmacy workers, especially for malaria testing.
- The factor that bred trust in rural Montserrado was if the medicine store or pharmacy attendant also worked as a health worker in public sector clinics, and customers knew them from this role.
- Community members in rural St. Paul appeared to expect free treatment from public facilities whereas those in urban Greater Monrovia were used to paying for treatments in private outlets.
- The value attached to time and distance to travel to public facilities was greater in urban Greater Monrovia.
- There was a general distrust of the quality of care in public health facilities in urban Greater Monrovia.
- In urban Greater Monrovia public health facilities were perceived as often out of stock of essential medicines, and patients were commonly referred to medicine stores and pharmacies to purchase medicines. In addition, providers were perceived as referring patients to private outlets owned by providers themselves as a means to increase their profit.
- Medicine stores and pharmacies were the source of first care seeking more often by those in urban Greater Monrovia than in rural Montserrado.
- Use of “street sellers” or “black baggers” appeared to be higher in urban Greater Monrovia than in rural Montserrado.
- Young children are often taken to public health facilities whereas adults more often obtain treatment from medicine stores and pharmacies.

- Public facilities were considered better than medicine stores and pharmacies in rural Montserrado because they are free and more professional.
- Medicine stores and pharmacies, and private clinics were considered better than public facilities in Greater Monrovia.
- Private clinics were considered the best source of care for malaria treatment by many, but they were perceived to be expensive and therefore less affordable. Some community members had paid between LRD 1,275 and LRD 2,500 for a consultation, malaria test, and treatment.
- The perceived quality of private clinics was sometimes taken advantage of. One community member in Kings Grey in Paynesville, Greater Monrovia, paid LRD 500 for vitamins to treat his malaria infection.
- The profit margins added to antimalarials by medicine stores and pharmacies varied from 25 percent to 150 percent. Consensus was general that the margin on RDTs should be more than on ACTs because of the time taken to perform the test.
- Some medicine stores and pharmacies offered credit to community members.
- Some community members had concerns about drug stores selling expired medicines.

Program Implications and Recommendations

- Messages in St. Paul and the rest of rural Montserrado will need to focus on medicine store and pharmacy workers being trained in the use of ACTs and RDTs.
- The LMHRA and the PBL should implement stronger enforcement against “street sellers” or “black baggers.”
- IEC messages should include the dangers of buying medicines from of “street sellers” or “black baggers,” particularly in Greater Monrovia.
- IEC messages should include the right medicines for malaria to prevent clinics and shops from taking advantage of community members.
- The LMHRA and the PBL should regularly inspect medicine stores and pharmacies to ensure minimum quality standards, and community members should be made aware of these inspections.
- Each medicine store and pharmacy where staff has been trained should carry a sign indicating staff has been trained to use RDTs and give ACTs. The sign should also indicate that the outlet is regularly inspected by the PBL or the LMHRA.
- Operational research to document the stock-out situation in public facilities should be carried out to ascertain their existence and cause.
- Reasonable profit margins may be added to ACTs in medicine stores and pharmacies.

Detailed Discussion of Findings

Table 7: General Characteristics of Sampled Medicine Stores and Pharmacies

Characteristic	Medicine stores	Pharmacies
Proportion of respondents who had received some form of training in dispensing or health in the past 12 months	• 18/26	2/4
Average number of clients served	• 33 (range 10–300)	• 50
Average percentage of malaria cases as a proportion of total clients served	• 3–20% <ul style="list-style-type: none"> ○ 41% (Rural Montserrado) ○ 29% (Greater Monrovia) 	• 30%
Proportion of respondents who refer clients that are very sick	• 23/26	• 1/4
Proportion of respondents who refer clients that have side effects	• 7/26	n.a.
Proportion of respondents who gave another medicine to clients that have side effects	• 7/26	n.a.
Proportion of respondents who do nothing if a client has side effects	• 5/26	n.a.

Just over half the providers in medicine stores and pharmacies had received some form of training in dispensing in the previous 12 months. There was no significant difference in the proportions between medicine stores and pharmacies. About a quarter of medicine stores refer patients with side effects rather than treating them with other medicines.

Table 8: Treatment-Seeking Behaviors of Community Members

Behavior	Greater Monrovia	Rural Montserrado (St. Paul River, Careysburg, Todee Districts)	Total*
Proportion of respondents who would go to medicine store for malaria treatment	8/28 (8/19 in GM)	3/28 (3/9 in RM)	11/28
Proportion of respondents who would go to pharmacy for malaria treatment	4/28 (4/19 in GM)	2/28 (2/9 in RM)	6/28
Proportion of respondents who would go to health facility for malaria treatment	7/28 (7/19 in GM)	3/28 (3/9 in RM)	10/28
Proportion of respondents would go to [other] for malaria	0/28 (0/19 in GM)	1/28 (1/9 in RM)	1/28

treatment

Note: GM = Greater Monrovia; RM = rural Montserrado.

* No response for two respondents.

Most medicine stores and pharmacies keep longer hours of operation than public facilities, opening on evenings, weekends, and holidays. Neither community members nor providers had much understanding of the difference between a medicine store and a pharmacy. Most were of the opinion that pharmacies were allowed to sell injectables whereas medicine stores were not. Medicine stores and pharmacies were generally considered the same in the community. Whether community members were talking about a medicine store or a pharmacy was difficult to decipher, although pharmacies were acknowledged as tending to offer more services so they are preferred but they are not as common as medicine stores in the communities.

Many respondents during the GIs, particularly in Greater Monrovia, said that medicine stores charged money but gave good medicine whereas health facilities provided professional services but often did not have the medicine available, providing patients with a prescription to purchase the medicines from a drug store. In addition, there was a perception that providers referred patients to private outlets owned by them to profit; moreover, government medicines are sometimes available. Some respondents in GIs stated that they buy medicines from drug peddlers or street shops because the medicines are cheaper than those sold in other places.

Some respondents stated that private hospitals and clinics provided better treatment for malaria because the providers know all the symptoms, but the expense makes respondents seek treatment from nearby medicine stores instead. Respondents paid between LRD 1,275 and 1,385 for malaria treatment at private facilities, which sometimes included injections.

The majority of respondents went to medicine stores or pharmacies to seek treatment for malaria (17/28). About one-third go to public health facilities (10/28). Most respondents choose to seek treatment at the medicine stores for two main reasons. First the travel distance and time and as well as wait time at the public health facilities were too long, and they could not tell if the medicine given to them was expired. Second, the provider at public health facilities usually would only give them a prescription to buy the medicines. Often respondents were referred to medicines stores or pharmacies owned by the providers themselves. It was unclear whether the providers referred them to medicine stores because of stock-outs of ACTs in the facilities or to promote their own business. Some respondents said they never get medicines for the treatment of malaria but preferred herbs from the neighboring shop sometimes mixed with cane juice. A vast majority of GI participants in Greater Monrovia said they did not go to hospitals or public facilities. A few respondents in urban areas said that they prefer to go the government hospital; most seemed to access the private sector more. Most areas had only one public facility within their immediate vicinity; for example, Barzoa Town, Paynesville, only had one public facility—Bensonville Hospital.

In Kings Grey, Paynesville, some respondents from the GI stated they seek treatment from “nearby doctors passing around.” Hospitals (private) were considered expensive, and no public clinic was nearby in the community. The medicine store was cheaper than the private clinic and had better opening hours, particularly in the evenings. Many respondents stated that the care received in the private facility was the same as in a medicine store so they preferred the latter.

The local medicine store also offered credit when they did not have enough cash to pay for the medicines, unlike the private clinics. The biggest difference noted between medicine stores and public or private facilities was that testing was available in the facilities. Medicines sold by street sellers were generally perceived to be of inferior quality.



Figure 5: SSIs in community



Figure 6: Medicine store in Montserrat County

Transportation is expensive. There is no public transport in the interior, harder-to-reach communities. People pay for a ride on a commercial motorbike. Prices of LRD 40 are charged for short distances of a few kilometers.

Almost all GI participants reported that injections were often given at medicine stores and pharmacies, especially for children and if the dispenser was a medical practitioner, except in rural Montserrat where the preferred source of care for injectables was the public health facilities. More than half (15/26) the medicine stores kept stocks of injectables, and a few medicine stores and pharmacies said they regularly gave injections. One medicine store in

Bensonville, Careysburg, administered up to 50 injections a week. The most common antimalarial injectables administered were quinine and artesunate.

A few medicine stores and pharmacies already keep registers for their sales. All the providers interviewed said that they would be able to keep registers for ACTs and RDTs if required. Most attendants interviewed at medicine stores had little or no training in dispensing.

The profit margins added to medicines by medicine stores and pharmacies varied widely among the outlets. Margins of 25 to 150 percent were added to antimalarials; 36 percent of respondents in medicine stores added margins over 100 percent. The margin on AS/AQ varied from 50 to 600 percent, with the majority between 50 and 100 percent in medicine stores. Others responded that they would add absolute profits of LRD 25 on ACTs and LRD 35 on RDTs. The general consensus was that the margin on RDTs should be more than that on ACTs because of the time required to perform the test.

Box 1: Perceptions of Medicine Stores, Pharmacies, and Facilities

“At health facilities you are examined and diagnosed but at the medicine store you tell the dispenser or you diagnose your own illness.” (GI, Kingsville, Todee District, Rural Montserrado County)

“Because they [hospitals] do the test and give treatment for free.” (SSI, Kingsville, Todee District, Rural Montserrado County)

“When I buy medicine from the hospital, just one tablet works, but when I buy medicine from the bucket, I double or triple the tablets before it can work.” (GI, Kingsville, Todee District, Rural Montserrado County)

“Free clinic services are not always good.” (GI, Gobachop, Paynesville, Greater Monrovia)

“Because with cash, you will get better treatment.” (SSI, Gobachop, Paynesville, Greater Monrovia)

“With the private clinic, you be check or diagnose before given treatment. With the drug stores, you will only be asked for symptom and be given drugs.” (SSI, Brewerville, St. Paul)

“I go to the drug store to buy medicine when the medicine is not in the hospital.” (GI, Paynesville District, Greater Monrovia)

“When I am not happy with the service at the hospital I go to the drug store.” (GI, Paynesville District, Greater Monrovia)

“No satisfaction in government clinics.” (Paynesville District, Greater Monrovia)

“No medicine in government clinics.” (GI, Gobachop, Paynesville, Greater Monrovia)

“It will be wrong to visit medicine store when I am sick because they have no test.” (Kpallah, St. Paul River District, Greater Monrovia)

“Medicine stores need to work closely with MOHSW to improve services because medicine store is close by.” (SSI, Paynesville, Greater Monrovia)

GENERAL MANAGEMENT OF MALARIA AT THE PROVIDER AND COMMUNITY LEVELS

Summary of Findings

- Most providers and community members were aware of most of the signs and symptoms of malaria but referred to fever as “hotness in the body.”
- Some community members from urban Greater Monrovia were more likely to self-treat using medicines bought from the drug store.
- Most community members acknowledged that although malaria affected everybody, young children and pregnant women were more susceptible.
- Most community members thought that malaria symptoms resembled those of typhoid and cholera.
- The awareness of malaria prevention was high although some referred to dirty water as causing the illness.
- Awareness of malaria as an illness that can have serious, even life-threatening consequences was generally very good among community members and health providers alike.
- Although most interviewed members of the community were aware that mosquitoes cause malaria, some misconceptions exist about the causes of the disease.
- No difference existed among study sites in awareness, perceived severity, or knowledge of the symptoms and consequences of malaria.
- Parents appeared to be more conscientious about finishing a full course of treatment for their young children than for themselves.
- The perception was widespread that CQ was ineffective.
- The most common medicines used for the treatment of malaria were AS/AQ (referred to as “amodiaquine” most commonly or sometimes “artesunate”), quinine, amodiaquine, quinine, artemether, paracetamol, Septrin, amoxicillin, and CQ.
- Most community members said they generally buy only the amount of malaria medicine they can afford, which is often an incomplete course.
- A few community members stated that medicine stores and pharmacies offer credit.
- Some misconceptions existed on the need for treatment of the disease and the need to prevent its recurrence with regular dosing.
- Most community members presented themselves at medicine stores and pharmacies as having malaria rather than describing the symptoms.
- Understanding was poor on the recommended first-line treatment for malaria in Liberia.
- Urban areas in Greater Monrovia had more choices of malaria products than rural St. Paul.
- Clients seeking care in medicine stores were more likely to say they had malaria and to ask for a particular treatment by name.

- Pharmacies appeared less likely to give a complete course of treatment than medicine stores.
- CQ and amodiaquine are available for sale at medicine stores and pharmacies at prices of LRD 15–40; quinine is sold at LRD 50–100 for 10 tablets, and other antimalarials were available at prices up to LRD 125.
- The price of AS/AQ is only 50 percent higher than the price of CQ.

Incidental Findings (Not Part of the Objectives of this Study but Relevant for Malaria Control)

- The insecticide on treated nets can cause the skin to burn if it touches the body.
- Net coverage was low.
- There was little understanding of the rationale for the number of nets provided per household, and net ownership appeared to be inequitable. Some households in the same community had been provided several nets while others had none.
- Many community members did not know how to use nets.
- Few people could differentiate between a treated net and an untreated net.

Program Implications and Recommendations

- Although most people were aware of the signs and symptoms of malaria, communication messages should emphasize that these are often similar to other illnesses and do not necessarily equate to malaria.
- The MOHSW seems to have been largely successful in its messaging regarding the ineffectiveness of CQ; however, it needs to reinforce this message in rural areas as well as for other medications that are not recommended.
- The susceptibility of children under five years of age to malaria, particularly the severe form of the disease, needs to be reinforced.
- The fact that malaria symptoms are similar to symptoms of other illnesses should be highlighted at the community and provider levels, as should the fact that all fevers may not be malaria requiring treatment with an antimalarial.
- The importance of finishing a full course of treatment should be reinforced for adults and children.
- Appropriate messaging should highlight the recommended first-line treatment for malaria in Liberia.
- The amount of subsidy needed for AS/AQ may not be as high as initially thought because AS/AQ costs only 50 percent more than CQ.
- Training and BCC is as important in medicine stores as in pharmacies.

Detailed Discussion of Findings

Table 9: Summary of Characteristics of Medicine Stores and Pharmacies with Respect to Antimalarials

Characteristic	Medicine stores	Pharmacies
Proportion of respondents who could name some signs and symptoms of malaria	26/26	4/4
Proportion of respondents who said that clients described symptoms when seeking treatment for malaria	8/26	3/4
Proportion of respondents who said that clients said they had malaria when seeking treatment for malaria	22/26	1/4
Proportion of respondents who said that clients asked for specific malaria medicines by name	22/26	3/4
Most common malaria treatment given in medicine stores and pharmacies	CQ	Artesunate (monotherapy)
Proportion of respondents in medicine stores and pharmacies who said they gave a complete course of treatment	14/26	2/4

Table 10: Proportion of Respondents in Medicine Stores and Pharmacies Who Named Signs and Symptoms of Malaria

Sign or symptom	Medicine stores	Pharmacies
Chills	22/26	3/4
Fever	24/26	3/4
Headache	22/26	1/4
Pain	21/26	1/4
Loss of appetite	20/26	4/4
Vomiting	24/26	4/4
Weakness	22/26	4/4

In the medicine stores and pharmacies, all respondents were able to name some signs and symptoms of malaria. Clients were more likely to describe the signs and symptoms of malaria when seeking care in a pharmacy (3/4) than in a medicine store (8/26). The majority of clients seeking care in a medicine store (22/26) actually told the provider they had malaria and asked for a particular medicine by name. In both medicine stores and pharmacies, AS/AQ was not the recommended treatment of choice. Most medicine stores still gave CQ for treatment of malaria

while pharmacies gave artesunate monotherapy. Often less than half of medicine stores and pharmacies gave complete courses of treatment, and rational use did not appear to be greater in pharmacies than in medicine stores.

Table 11: Availability and Cost of Common Malaria Medicines in Medicine Stores and Pharmacies

Medicine	Medicine stores	Cost (LRD)	Pharmacies	Cost (LRD)
CQ	13/26	44	1/4	40
AS/AQ (baby)	7/26	33	0	
AS/AQ (toddler)	8/26	40	0	
AS/AQ (child)	8/26	51	0	50
AS/AQ (adult)	8/26	75	2/4	50
Amodiaquine (monotherapy)	9/26	35	2/4	33
Artesunate (monotherapy)	9/26		4/4	
SP	7/26		1/4	
Quinine injection	0	41		
Artesunate injection	0	69		

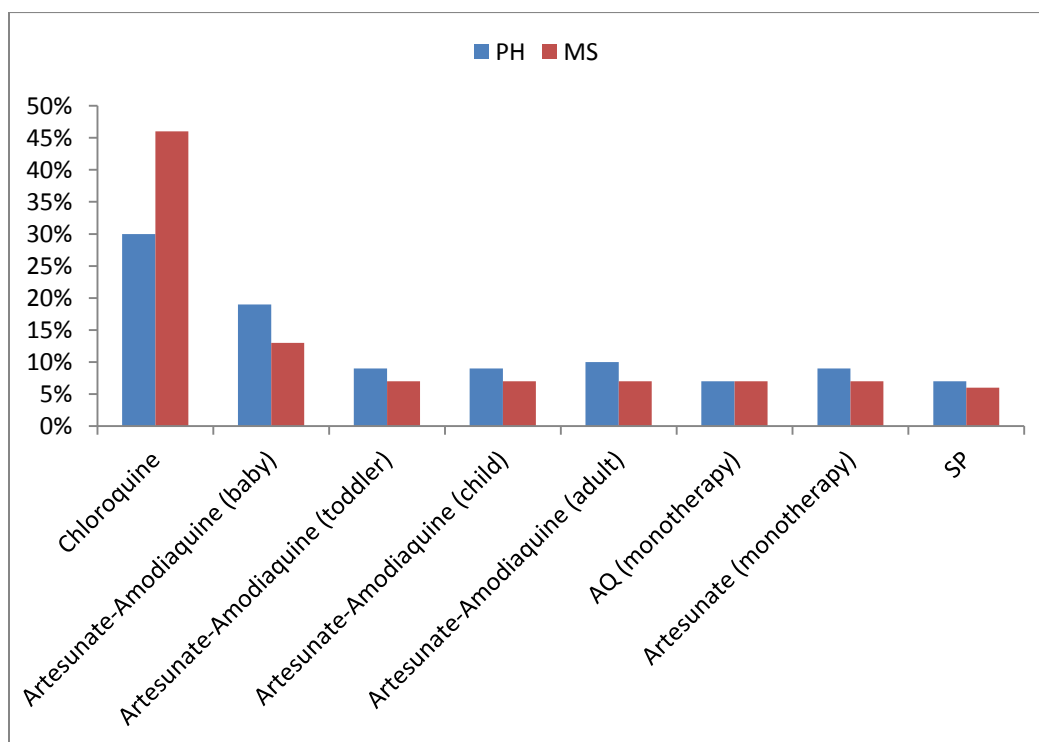


Figure 7: Availability of antimalarials in medicine stores and pharmacies

CQ was still the most commonly available antimalarial, particularly in medicine stores. AS/AQ was available in both medicine stores and pharmacies although pharmacies did not stock all pack sizes. Other antimalarials commonly available were amodiaquine, oral artesunate, and sulfadoxine-pyrimethamine (SP). In most cases, AS/AQ cost 50 percent more than CQ.

Table 12: Proportion of Medicine Stores and Pharmacies That Gave Particular Malaria Medicines

Medicine	Pharmacies	Medicine stores (recommended treatment)
CQ	1/4	3/26
AS/AQ (baby)	4/4	3/26
AS/AQ (child)	1/4	1/26
AS/AQ (adult)	1/4	1/26
Amodiaquine (monotherapy)	4/4	9/26
Artesunate (monotherapy)	4/4	1/26
SP	3/4	1/26
Other	1/4	1/26

Pharmacies did not follow the standard treatment guidelines for malaria any more than medicine stores. Neither consistently gave AS/AQ for the treatment of malaria, and treatments recommended varied from CQ and amodiaquine to artesunate monotherapy.

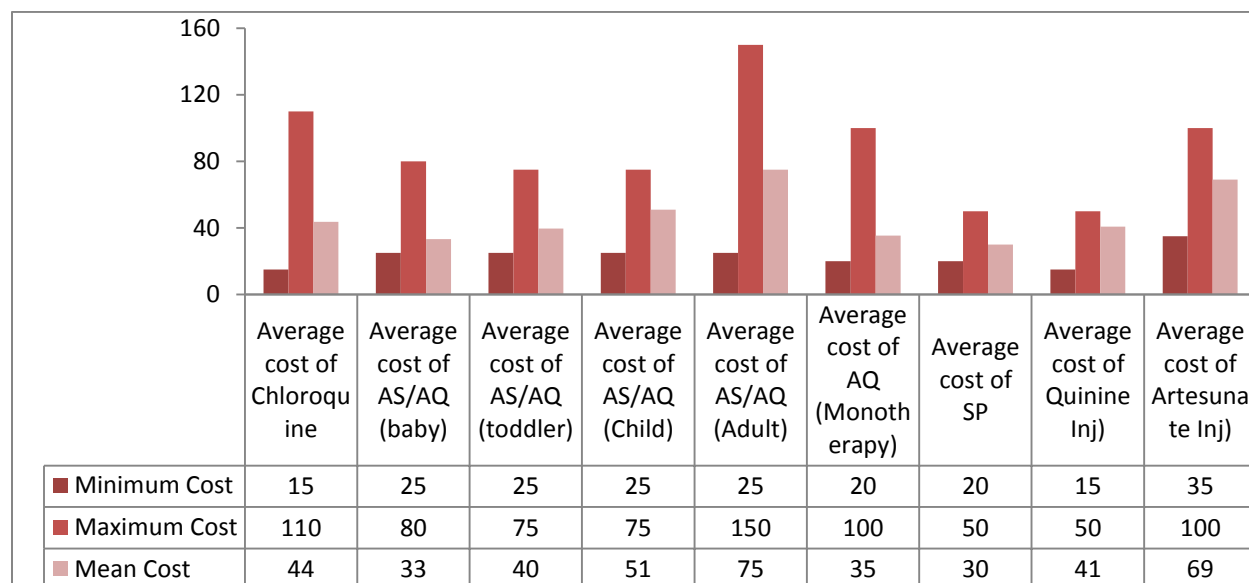


Figure 8: Average cost of antimalarials in pharmacies (LRD)

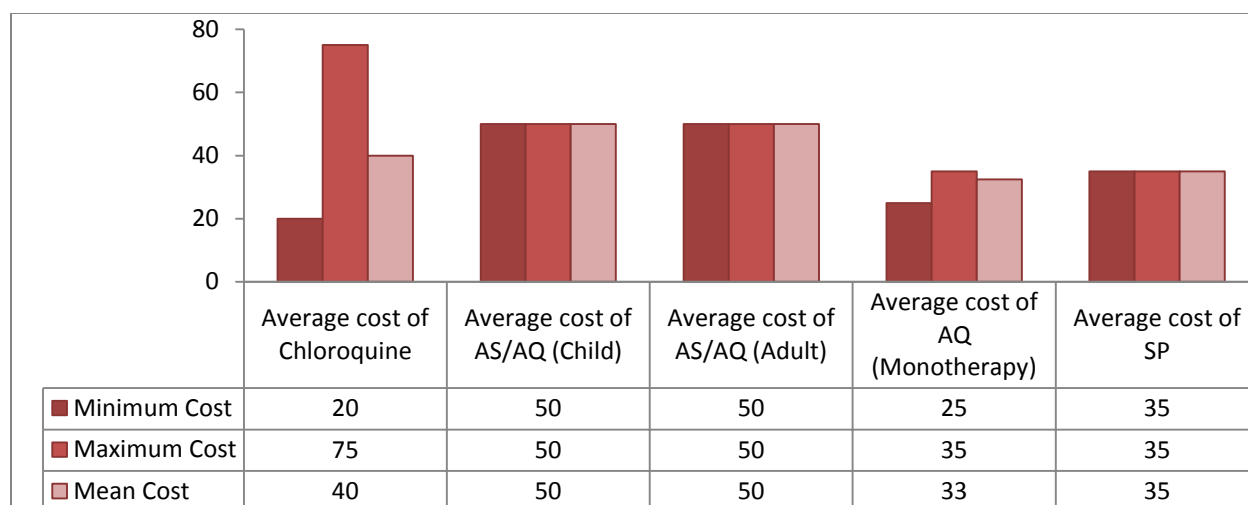


Figure 9: Average cost of antimalarials in medicine stores (LRD)

There did not appear to be much difference in the average cost of antimalarials between medicine stores and pharmacies, implying that both probably had similarly profit margins added at the point of sale.

Only about a third of respondents in the community took AS/AQ for their last malaria episode. Other treatments taken were amodiaquine, quinine, SP, CQ, or an injectable. The majority said they obtained this treatment from a medicine store while less than a quarter obtained treatment from a pharmacy. Most respondents in the community said they always finish the treatment given to them, although it appeared that pharmacies were less likely to give a complete course of treatment than medicine stores.

Table 13: Treatment-Seeking Behaviors for Malaria in the Community

Behavior	Greater Monrovia	Rural Montserrado	Total
Proportion of respondents who said they took CQ for their last malaria episode	1	0	1/30
Proportion of respondents who said they took AS/AQ for their last malaria episode	7	4	11/30
Proportion of respondents who said they took amodiquine for their last malaria episode	5	2	7/30
Proportion of respondents who said they took artesunate for their last malaria episode	0	0	0
Proportion of respondents who said they took SP for their last malaria episode	0	1	1/30
Proportion of respondents who said they took quinine for their last malaria episode	0	4	4/30
Proportion of respondents who said they took something else for their last malaria episode			2/30
Proportion of respondents who said they got an injectable for their last malaria episode	1	0	1/30
Proportion of respondents who said the treatment was recommended by a medicine store or pharmacy	MS: 8 PH: 4	MS: 8 PH: 0	MS: 16/30 PH: 4/30
Proportion of respondents who said they always finish all the medicines they were given	19	1	25/30

Note: MS = medicine store; PH = pharmacy.

Table 14: Average Prices Paid for Malaria Medicines by Community Members for Their Last Malaria Episode

Price (LRD)	Number of respondents
25–50	4/13
50–100	8/13
40	1/13

Most respondents in the community paid between LRD 50 and LRD 100 for malaria medicines during their last episode.

Most respondents in the GIs listed weakness, tiredness, inability to move, change in urine color (yellow), bone and joint pain, fatigue and sleepiness, headache, cold in body, heavy cold, trembling, “body hotness,” hot skin, vomiting, evening sweat, loss of appetite, and bitterness in the mouth as the main symptoms of malaria. A few other unconventional responses included pus from ear, convulsion, poor appetite, low blood, and thirst.

Although most respondents said that young children and babies got malaria more often than others and were the most adversely affected, many also stated that everyone was susceptible to malaria. Awareness that malaria can be serious and even life threatening, particularly in children, was generally very good among community members and health providers alike.

Although most interviewed members of the community were aware that mosquitoes cause malaria, some misconceptions persisted about the causes of the disease. For example, some believed that beer (GI, Sinkor) caused malaria and that it can be transmitted from one person to another, and one person in King Grey, Paynesville, stated that mosquitoes were not the only cause of malaria because her children got malaria even though they slept under a net. Most respondents acknowledged that they thought the symptoms of malaria were similar to other illnesses such as typhoid and cholera; however, the concept of differential diagnosis and treating one cause did not seem to resonate with community members.

Common antimalarials available in the community were paracetamol, co-trimoxazole (Septrin), “amodiaquine” (a common term also used for ACTs), amodiaquine monotherapy, SP (Fansidar), CQ (not as common anymore because it was not effective), quinine, and dihydroartemisinin. Some stated that the ACTs found in the hospital were better than those in the medicine stores. Urban areas in Greater Monrovia have more choices of malaria products than rural St. Paul. The two most effective medicines stated for malaria treatment were quinine and ACTs (although they were never referred to as ACTs). A small proportion of GI participants were of the opinion that none of the currently available medicines was effective and that the Ministry of Health needed to make available a more effective treatment for malaria. Select respondents in Chicken Soup, St. Paul, stated that SP (Fansidar) was the most effective treatment for malaria. Others felt that quinine intravenous was more effective than the tablets (King Hill). Understanding was poor on the recommended first-line treatment for malaria in Liberia.

The perception that CQ was ineffective was widespread. CQ was referred to as the least effective antimalarial in most group and individual interviews among providers and community members.

Although most communities said that CQ was no longer effective and that people no longer take CQ, a few community members in rural St. Paul and the urban slum of Kings Grey still preferred to take CQ.

Most people do not use all the medicines prescribed or recommended. Some said they forget to take them while others stop taking them when they feel better and keep the rest for another time. Most participants stated they would buy what they could afford at the time, which was often only a few tablets (Barzoa Town, Paynesville) with varied responses based on affordability on whether they return for the balance or not. One GI participant in King Hill, Paynesville, said that he took malaria medicines every week while another took a malaria treatment every two months (GI, Gobachop, Paynesville). A few community members stated that medicine stores and pharmacies would credit the amount needed in lieu of a complete course until they could return with the balance of the payment.

Although AS/AQ was commonly prescribed for malaria treatment in most public facilities, some were still prescribing amodiaquine monotherapy. In Careysburg, respondents had not heard of ACTs and were being prescribed quinine. Most clients presenting to medicine stores and pharmacies told providers they had malaria rather than describing the symptoms.

The wait time for care seeking upon the appearance of malaria symptoms ranged from two to three hours to three days (Kpallah, St. Paul). Many providers advised clients to take ORS or to eat food if they had side effects to a medication that had been given. Others were treated with antibiotics, chlorpheniramine, or dexamethasone.

Table 15 illustrates some indicative prices of antimalarials sold by medicine stores and pharmacies.

Table 15: Prices of Commonly Sold Antimalarials

Product	Pack/amount sold	Price range (LRD)
CQ tablets	10 tabs	15–40
CQ syrup		65–110
CQ injectable	1 vial	50
Quinine tablets	10 (1 tablet 3 times a day × 3/7)	50–100
Quinine injectable	1 ampoule	45
Amodiaquine tablets		25–40
Amodiaquine syrup		80–100
SP tablets	3	20–30
Artemether	ampoule	100–125
Lomaquine	3	20–75
Lokmal (artemether-lumefantrine)	3	75



Figure 10: Provider in medicine store signing consent form before SSI

Box 2: General Perceptions on Malaria

“Malaria is one of the most dangerous diseases in the community.” (GI, Gardnersville District, Greater Monrovia)

“Our children suffer daily.” (GI, Sinkor, Central Monrovia District, Greater Monrovia)

“Not all fevers are malaria.” (Provider, Kpallah, St Paul River District, Rural Montserrado)

“All my 12 children die from malaria because when I am pregnant, there is no proper treatment.” (Sinkor, Central Monrovia, Greater Monrovia)

“It takes you longer time to get sick after taking quinine/ACT.” (GI, Sinkor, Central Monrovia District, Greater Monrovia)

“ACT is good depending on how you take it”. (GI, Sinkor, Central Monrovia District, Greater Monrovia)

“CQ has expired.” (Sinkor, Central Monrovia, Greater Monrovia)

“Sometimes I feel discouraged when I go to the hospital and my son is not diagnosed of malaria and I am told it is another illness.” (GI, Kings Grey, Paynesville District, Greater Monrovia)

“Only mosquitos can give malaria?” (SSI, community, Bensonville, Careysburg, Rural Montserrdo)

“Many people are not asking for chloroquine.” (provider, Kingsville, Todee District, Rural Montserrdo)

“Quinine drip is most effective.” (Gobachop, Paynesville District, Greater Monrovia)

“I give Fansidar to my baby of 2 months based on advice from medicine store.” (Gobachop, Paynesville, Great Monrovia)

PERCEPTIONS OF ACTS

Summary of Findings

- AS/AQ is referred to as “amodiaquine,” particularly by community members (or “artesunate” in select cases), and was often dubbed “I must die quick” because of the perceived side effects of the product (Kings Grey, Medicine Store, Kingshill, Duport Road Junction).
- It was unclear whether the actual or perceived side effects to AS/AQ were caused by the amodiaquine or artesunate component.
- Although a large number of community members had taken, given, received, or heard of AS/AQ, it was not commonly referred to as AS/AQ, and when questioned about AS/AQ, they did not recognize it until they were prompted either by the color of the tablets or by identifying the package.
- Perceptions were very strong that AS/AQ or “amodiaquine” causes “weakness,” and therefore some were resistant to taking it, insisting that they felt worse after taking it.
- Other respondents who had taken AS/AQ or given it to their children said that it was effective and cured their malaria on completion of the three-day treatment and that the malaria did not resurge immediately as with other treatments.
- Despite the real or perceived side effects of AS/AQ or “amodiaquine,” the majority of respondents in the medicine stores and pharmacies and in the community considered it as being most effective for the treatment of uncomplicated malaria.
- There was a higher tendency to give AS/AQ to children than to adults. It did not cause the “weakness” in children.
- Many community members said they were advised by health workers in public facilities to take the AS/AQ with juice, ORS, or a soft drink, thereby raising the cost of the treatment.
- Some community members were also told by providers to take the AS/AQ at night to avoid the “weakness” resulting from its administration.
- AS/AQ was sold in medicine stores and pharmacies at LRD 150–175 for an adult treatment course; however, it could be bought from street sellers for less than LRD 75.
- AS/AQ was regularly prescribed at public facilities for the treatment of uncomplicated malaria.
- Quinine was still being used for the treatment of uncomplicated malaria although many respondents said that it causes ringing in the ears.
- Most respondents said they would respect the MOHSW if it were to recommend AS/AQ.
- The availability of subsidized ACTs in medicine stores and pharmacies was considered a positive intervention at both community and provider levels in most cases. In some urban communities, however, there was a general distrust of medicines that were previously sold at a higher price and then discounted because they were considered “expired.”

- The following price range was considered acceptable for purchasing AS/AQ from a medicine store or pharmacy—
 - Adult treatment: LRD 50
 - Child treatment: LRD 10–25
- Several community members were breaking the AS/AQ tablet. Dosage instructions were not clear.
- The perception that CQ was ineffective was widespread with some exceptions in rural St. Paul and the urban slum of Kings Grey.
- Some confusion existed on the recommended first-line treatment for malaria in Liberia regarding AS/AQ compared with other ACTs.

Program Implications and Recommendations

- “AS/AQ” is not known. Most respondents referred to it as “amodiaquine.” An easy and commonly accepted name should be created to refer to AS/AQ (e.g., in East Africa, artemether/lumefantrine is referred to as AL).
- Messages for AS/AQ should be specific to AS/AQ as the recommended first-line treatment for malaria and not generally speak of ACTs.
- IEC messages should address the perceived side effect of “weakness” from AS/AQ.
- Messaging to health workers and the community should include the need to take AS/AQ with a drink or snack rather than juice, glucose, or ORS.
- The MOHSW seems to have been largely successful in its messaging regarding the ineffectiveness of CQ; however, it needs to reinforce this in rural areas as well as for other medications that are not recommended for malaria treatment.
- The communication on AS/AQ should emphasize the correct dosage and the need to complete the entire three-day course of treatment.
- The “subsidy” needs to be appropriately communicated to community members to avoid the perception that prices have been reduced because of expired product.
- The recommended price ranges for AS/AQ from the interviews are—
 - Adult treatment: about LRD 50
 - Child treatment: about LRD 25
- A separate private sector pack should be used in medicine stores and pharmacies to avoid leakage from the public sector. Joint procurement with the other private sector initiatives will enable economies of scale and minimum quantities for orders.



Figure 11: Select antimalarials found in medicine stores and pharmacies

Detailed Discussion of Findings

Table 16: Medicine Stores' and Pharmacies' Knowledge and Perceptions of AS/AQ

Perception	Medicine stores	Pharmacies
Proportion of respondents who sell a complete course of ACTs	22/26	1/4
Proportion of respondents who say that ACTs are the most effective	23/26	3/4
Proportion of respondents who say that ACTs are the least effective	3/26	1/4
Percentage profit for a single AS/AQ treatment	50→100% 50–75%: 69 % of medicine stores	50–600%
Percentage profit for a single treatment of other antimalarials	>100%: 36% of medicine stores	0–100%
Proportion of respondents who say they give injections	6/26	1/4
Proportion of respondents who say they would refer if a patient had side effects	7/26	
Proportion of respondents who say they would give another medicine if a patient had side effects	7/26	
Proportion of respondents who say they would do nothing if a patient had side effects	5/26	

Providers in pharmacies appeared less likely to sell a complete course of AS/AQ than those in medicine stores. In both medicine stores and pharmacies, AS/AQ was acknowledged to be the most effective antimalarial. Profits on AS/AQ ranged from 50 percent to 600 percent in medicine stores and pharmacies. The majority of pharmacies and some medicine stores gave injections for malaria treatment.

Table 17: Perceptions of AS/AQ among Community Members

Perception	Greater Monrovia	Rural Montserrado	Total
Proportion of respondents who said they had heard of ACTs or AS/AQ	19	6	25/30
Proportion of respondents who said they or their child had taken ACT or AS/AQ	18	6	24/30
Proportion of respondents who knew of ACTs who said they were the most effective malaria treatment	15	5	20/30
Proportion of respondents who knew of ACTs who said they were the easiest to take	12	5	17/30

Most community members (25/30) had heard of AS/AQ or had taken it themselves or given it to their child (24/30). Almost all were of the opinion that it was the most effective treatment against malaria and that it was easy to take.

Table 18: Willingness to Pay for AS/AQ among Community Members

Price	Greater Monrovia	Rural Montserrado	Total
Proportion of respondents who said they would buy an ACT for LRD 100 for an adult treatment	12	4	16/30
Proportion of respondents who said they would buy an ACT for LRD 50 for an adult treatment	0	2	2/30
Proportion of respondents who said they would buy an ACT for LRD 20 for an adult treatment	0	1	1/30
Average price respondent said she or he would be willing to pay for an ACT	25–50: 1 40: 1 50–100: 7	25–50: 3 40: 0 50–100: 1	25–50: 4/30 40: 1/30 50–100: 8/30

Most respondents in the community said they would pay LRD 100 for a treatment of AS/AQ in a medicine store or pharmacy but LRD 50–100 would be the most likely average price they could afford to pay.

AS/AQ is referred to as “amodiaquine,” particularly by community members (or “artesunate” in select cases), and often dubbed “I must die quick” because of the perceived side effects of the product (Kings Grey, Medicine Store, Kingshill, Duport Road Junction). Whether the actual or perceived side effects to AS/AQ were caused by the amodiaquine or artesunate component was unclear. In cases where the interviewers could not verify the product taken by examining the package, they could not determine whether the respondent had taken AS/AQ or AQ monotherapy and whether the side effects respondents were referring to stemmed from the AS/AQ combination.

Most GI participants were of the opinion that “amodiaquine” caused weakness and vomiting, which made them feel sicker than before they started taking it. Clinics advise patients to take “amodiaquine” (AS/AQ) with juice or “vimto,” which makes it more expensive. Community members were of the opinion that quinine worked well but caused ringing in the ear. The medicine named as the best and most effective in Tusafeld was dihydroartemisinin. However, it was considered expensive. It was available from the pharmacy at USD 10. CQ was considered to be weak or “expired” and therefore not effective.

Some private clinics were prescribing oral artemether (12 tablets) for uncomplicated malaria as the “new treatment” for malaria.

Most respondents had heard of ACTs, but in all the communities, AS/AQ was often referred to as just “amodiaquine” and the investigators either ascertained the actual identity of the medicine referred to by asking to see the package or by showing respondents AS/AQ tablets and asking them to identify if those were the ones they took. Some respondents in Tusafeld had not heard of AS/AQ at all.

Although AS/AQ was considered to be the best medicine for treatment of malaria, it was considered too “strong.” Many respondents acknowledged that the infection did not return as quickly as with other medicines when treated with AS/AQ. A few respondents (Sinkor) said that AS/AQ worked very well on them and they experienced no side effects, particularly in children.

When asked through an iterative price-setting process how much community members would be willing to pay for AS/AQ in the private sector, most people said they could pay LRD 50. However, others could probably pay only LRD 15–40. The majority of the population would not be able to afford LRD 100. Although some respondents said they would pay up to LRD 100 for a treatment that would cure malaria, the majority identified the maximum price reasonable for an adult AS/AQ treatment as LRD 50–60 (King Hill), and LD 25–30 for a child’s treatment.

AS/AQ was currently being sold at medicine stores and pharmacies for LRD 60–150 for an adult treatment and LRD 45–90 for a child’s treatment. The medicines could be bought from a street vendor or “bucket” for LRD 75 and LRD 35, respectively. A medicine store in Chugbo was

selling at LRD 40 for an adult treatment and LRD 30 for a child's treatment. These were possibly products that had leaked from the public sector.

As a note of comparison, quinine tablets were sold at LRD 10 for a tablet. In contrast, one respondent in Tusafield had paid LRD 1,275 at a private clinic for a consultation, test, and treatment with AS/AQ. However, she was satisfied that her child had recovered from the malaria but was still "weak" from the amodiaquine. Others who visited private clinics regularly paid LRD 350–500.

A provider in St. Paul said that introducing a subsidy when the product had already been available at the outlet for a higher price may seem to the community that the ACTs were expired and hence were being sold off cheaply.

Box 3: Perceptions of AS/AQ

"It is ok whenever give it to my children." (SSI, community, Paynesville District, Greater Monrovia)

"For your health, no money is too big." (Kingsville, Todee District, Rural Montserrat)

"I prefer to buy amodiaquine for 100 LD than to buy it cheaper and I am not sure it will work." (SSI, community, Kingsville, Todee District, Rural Montserrat)

"If it was bad the government would stop." (SSI, Banjor, St. Paul River District, Rural Montserrat)

"Compare to other malaria medicines, ACT is very fact. It is qualified." (SSI, provider, Paynesville District, Greater Monrovia)

"I will prefer this because I feel that it is the best treatment for malaria." (SSI, community, Paynesville District, Greater Monrovia)

"According to people, it is better. For me, I think it is better too." (SSI, community, Brewersville, St. Paul River District, Rural Montserrat)

"To be honest with you, amodiaquine has very bad effect. Amodiaquine treats you very bad and makes you even sicker." (GI, Tusafeld, Gardnersville, Greater Monrovia)

"My father took and it treated him very bad." (GI, Tusafeld, Gardnersville, Greater Monrovia)

"Most people ask for quinine because they are afraid of ACT." (SSI, provider, Paynesville, Greater Monrovia)

"That's why they call it amodiaquine because it can treat you before you get well." (GI, Kpallah, St. Paul River, Rural Montserrat)

"Many will still buy other antimalarials due to side-effects of AS/AQ." (SSI, provider, Banjor, St. Paul River, Rural Montserrat)

"Since my daughter took amodiaquine, she does not suffer from malaria like before." (SSI, community, Kingsville, Todee District, Rural Montserrat).

"ACT and AQ are good for treating malaria." (SSI, provider, Brewersville, Rural Montserrat)

"ACT has more side effects than other antimalarial." (SSI, provider, Kingsville, Todee District, Rural Montserrat)

"I don't take amodiaquine because of its side effects." (SSI, Gobachop, Paynesville, Greater Monrovia)

"The combine AQ is more effective." (SSI, provider, Gobachop, Paynesville, Greater Monrovia)

"ACT is easy to take, is good, is quality for malaria. I don't see any side effects." (SSI, Paynesville, Greater Monrovia)

"AQ is stronger than ACT." (SSI, provider, Fendell, St. Paul River, Rural Montserrat)

PERCEPTIONS OF RDTs

Summary of Findings

- Most providers and community members were very accepting of a test to diagnose malaria.
- Testing for malaria was an accepted and common practice in public and private health facilities and clinics.
- Some in the community in Barzoa Town in St. Paul perceived that an RDT was considered an inferior test to microscopic detection of malaria parasites.
- Most respondents in the community said they would respect the MOHSW if it were to recommend testing before treatment, and they were open to it. The MOHSW was generally trusted when it came to recommendations about health.
- Few medicine stores and pharmacies were currently using RDTs for malaria diagnosis.
- Some providers were not supportive of an intervention of receiving a compulsory positive test before treatment (17/40 medicine stores and 4/40 pharmacies) and admitted to potentially treating with antimalarials even on a negative test.
- Acceptance of the use of RDTs in medicine stores and pharmacies was greater in Greater Monrovia than in rural St. Paul.
- In rural areas such as St. Paul, the level of training of those working in medicine stores and pharmacies was more important for malaria testing.
- The factor that bred trust in St. Paul was if the attendant at the medicine or pharmacy also worked as a health worker in public sector clinics and customers knew them from this role.
- Those in rural St. Paul were less trusting of “drug shops” than in Greater Monrovia. They identified profit as the motive of medicine stores and pharmacies rather than professionalism. They believed that the medicine store or pharmacy would be inclined to tell them a test was positive and sell them a malaria medicine even if in fact it was negative.
- Most providers were of the opinion that they would be able to perform the test with some training.
- Most providers understood the job aid on RDT use.
- Most providers who had been previously trained in RDTs were able to correctly describe how to perform the test.
- A few medicine stores and pharmacies regularly gave injections. One medicine store in Bensonville, St. Paul, administered up to 50 injections a week.
- Community members in St. Paul were more nonchalant about the advantages of the availability of RDTs in medicine stores and pharmacies.
- The price range considered acceptable for purchasing an RDT from a medicine store or pharmacy: LRD 25–100.

- Most providers were of the opinion that customers would not accept a negative test result and would demand a treatment.
- A provider in Greater Monrovia was concerned that the customers would think they were testing for HIV.
- Most community members said that many would accept a positive test before a negative one and said they would probably get a second test.
- Some providers concerned about the time taken to perform the test and wait for results and worried that the customers would get impatient.

Program Implications and Recommendations

- Training medicine store and pharmacy staff is key to the success of this intervention and communicating that certain providers in medicine stores and pharmacies have been trained will enable trust in these providers, particularly in rural areas.
- Providers will need to be trained to carry out a simple differential diagnosis to be able to provide treatment for other simple illnesses should the RDT be negative.
- Sharps boxes should be provided to each medicine store or pharmacy by the PBL when implementing this intervention, and a regular mechanism to enable collecting of these boxes must be introduced.
- The effectiveness of RDTs to diagnose malaria, including their ease of use, should be emphasized in communication.
- Recommended price range for RDTs is LRD 25–75.
- Price incentives should be built into the RDTs to include time taken to perform the test.
- The need for a clean surface and a dedicated space to perform the RDTs should be emphasized.
- Providers should be encouraged to show the customer the result of the test.
- Providers should be trained to place RDTs in the coolest part of the shop.
- Given that community members were open to receiving injections at a medicine store or pharmacy, the potential of their being open to receiving a blood test for malaria seemed higher.

Detailed Discussion of Findings

Table 19: Knowledge and Perceptions of RDTs among Medicine Stores and Pharmacies

Perception	Medicine stores	Pharmacies
Proportion of respondents that have heard of RDTs	26/26	4/4
Proportion of respondents that been tested using an RDT	25/26	4/4
Proportion of respondents that been trained to do an RDT	24/26	4/4
Proportion of respondents that have seen an RDT being done	25/26	4/4
Proportion of respondents that have done an RDT themselves	25/26	4/4
Proportion of respondents that say they have someone on the premises that can perform an RDT	20/26	3/4
Proportion of respondents that have enough space to perform the test	26/26	3/4
Proportion of respondents that have a clean space to perform the test	25/26	3/4
Proportion of respondents that can correctly describe how to do an RDT	25/26	4/4
Proportion of respondents that would be willing to do an RDT in the shop	26/26	3/4
Proportion of respondents that understood the job aid	23/25	1/4
Proportion of respondents that said that the job aid was unclear	10/26	2/3
Proportion of respondents that thought their regular staff could do the test with some training	26/26	4/4
Proportion of respondents that said it would be acceptable to have a regulation stating that AS/AQ could be purchased <i>only</i> following a positive RDT test	21/26	1/4 (3/4 said that it would be <i>unacceptable</i>)
Proportion of respondents that said customers would demand an antimalarial even if the test shows no malaria	17/26	4/4
Proportion that had an existing register to record the medicines sold	0/26	4/4
Proportion of medicine stores and pharmacies that said they would be able to fill in a daily register	26/26	4/4

Most providers in medicine stores and pharmacies had heard of RDTs or had been tested using one. More than half of medicine store respondents had actually been trained to do an RDT or had someone on the premises who could perform the test. When shown the job aid developed with the NMCP, most untrained respondents understood it (23/25) and could accurately describe how to perform the test. Although most providers were willing to perform an RDT and to accept a regulation stating that ACTs could be purchased only upon a positive RDT, most medicine stores (17/26) and all the pharmacies (4/4) were of the opinion that customers would demand an ACT even if the test showed no malaria parasites.

Table 20: Knowledge and Perceptions of RDTs among Community Members

Perception	Greater Monrovia	Rural Montserrado	Total
Proportion of respondents that had heard of RDTs for malaria diagnosis	18	8	26/30
Proportion of respondents that said they had had an RDT for malaria diagnosis	18	8	26/30
Proportion of respondents that said they would agree to an RDT being performed at a medicine store or pharmacy for free	16	6	22/30
Proportion of respondents that said they would agree to an RDT being performed at a medicine store or pharmacy for LRD 100			17/30
Proportion of respondents that said they would agree to an RDT being performed at a medicine store or pharmacy for LRD 50			6/30
Average price (LRD) the respondent said she or he would be willing to pay for an RDT			5–20: 4/14 20–40: 2/14 40–60: 5/14 60–80: 1/14 Other: 2/14

Most respondents said that they would pay LRD 100 for a test although the majority would prefer to pay less than LRD 60.

Table 21: RDT Perceptions of Community Members

Perception	Proportion
Proportion of community respondents that said they would have no problems with an RDT being performed in a medicine store or pharmacy	16/30
Proportion of community respondents that said they would have no problems with an RDT being performed in a medicine store or pharmacy if the provider had received adequate training	4/30
Proportion of community respondents that said having an RDT being performed in a medicine store or pharmacy would waste time or delay service	1/30
Proportion of community respondents that said they would be concerned about the provider in a medicine store or pharmacy not being focused on the test	1/30
Proportion of community respondents that said they would be concerned about the provider in a medicine store or pharmacy using the test more than once	1/30
Proportion of community respondents that said they would prefer going to a hospital or clinic to be tested over a medicine store or pharmacy	2/30
Proportion of community respondents that said having an RDT being performed at a medicine store or pharmacy would save them money	1/30
Proportion of community respondents that said having an RDT being performed at a medicine store or pharmacy would be beneficial	22/30

Most community respondents said that having an RDT performed at a medicine store or pharmacy would be beneficial to the community.



Figure 12: Group interview in Greater Monrovia

Most respondents in the community in individual and group interviews had either received or seen a blood test for malaria diagnosis being done, including an RDT. At government clinics the test was conducted free of charge, whereas at the private clinic, prices of LRD 145 were charged.

Most participants had seen RDTs or had been tested using one, particularly at clinics. RDTs were seen being performed at private clinics, government clinics, the Catholic hospital, and select pharmacies. Drug peddlers in Tusafeld (GI) and some private clinics in Gardnersville sold them for USD 5 while in some pharmacies RDTs were available and performed for LRD 20–150 (Paynesville, Careysburg, St. Paul, Chugbo, Sinkor, Central Monrovia). A respondent in Sinkor had actually had one performed at a pharmacy. Many were of the opinion that LRD 25–50 was the appropriate price for an RDT, and they would purchase it if the MOHSW recommended testing before treatment. Some were of the opinion that LRD 100 would be considered affordable if bundled with a treatment.

Most respondents in the community, particularly in urban areas, were receptive to the idea of being tested using RDTs in medicine stores and pharmacies. However, in Tusafeld, participants were of the opinion that medicine stores and pharmacies could perform an RDT only if professional staff or a health worker had been trained appropriately in the use of the test. They did not consider the one medicine store in the community qualified to perform RDTs. Respondents in rural St. Paul preferred to go to a hospital for tests (GI, Barzoa, St. Paul) rather than a medicine store or pharmacy.

Table 22: Perceptions of a Test Being Performed before Treatment

Perception	Proportion
Proportion of community respondents that said they would require further check-up before accepting not being treated	3/30
Proportion of community respondents that said they would go to a hospital or clinic before accepting not being treated	3/30
Proportion of community respondents that said they would get a second test before accepting not being treated	1/30
Proportion of community respondents that said they would accept not being treated after a negative test	19/30
Proportion of community respondents that said they would accept not being treated after a negative test only if the provider was adequately trained	1/30

Most respondents, particularly in the community, thought that a regulation requiring an RDT before treatment would be advantageous and it would confirm they really had malaria. Others were of the opinion that it would save time.

If the RDT turned out to be negative, but they still felt ill, most community members said they would go to another medicine store to get retested. If the second test came out negative, they would not buy an antimalarial from a street seller or “bucket.” Others said they would then go to the clinic to be tested for any other illness they may have, such as typhoid, or buy the medicine from a peddler.

Although most GI respondents seemed open to the idea of a government regulation requiring testing before treatment, many were of the opinion that the government should enforce this regulation and limit drug peddlers from selling other antimalarials. Only one participant in Tusafield said that he knew how he felt when he has malaria, and he would buy an antimalarial from a peddler despite the negative result.

Some respondents said that if they had only enough money to purchase either an RDT or an antimalarial, they would buy the ACT. Others said that they would get the test and find a way to buy the treatment by using credit or borrowing from neighbors (GI, Tusafield).

Most providers and community members felt that RDTs were a quick and efficient way to test for malaria with the exception of one provider in Jallah Town, Greater Monrovia, who was of the opinion that an RDT was not sufficient to test for severe malaria.

Several providers were of the opinion that compulsory testing before treatment may decrease the number of customers as well as waste their time and that of the clients. Many providers were of the opinion that patients would still demand treatment if the test was negative.

Some of the providers interviewed had already been trained to perform an RDT by the NMCP.

A few medicine stores and pharmacies regularly gave injections. One medicine store in Bensonville, St. Paul, administered up to 50 injections a week. Given that community members

were open to receiving injections at a medicine store or pharmacy, the potential for them to be open to receiving a blood test for malaria seemed high. Of the medicine stores, 4/40 gave quinine injections, 3/40 gave artesunate injections, and 6/40 gave any injection asked for.

One respondent in Kings Grey mentioned the need for cool storage for RDTs, which the medicine stores would not have. Others felt that MOHSW staff should regularly provide supportive supervision to medicine stores to ensure that the tests were being conducted appropriately and that the materials used were of a minimum quality.

Zoom Lion collects garbage from communities, and many medicine stores and pharmacies dispose of their waste using this service. The PBL collects expired medicines (MS, St. Paul), and it could potentially be used to provide and collect sharps containers.

A respondent in Elwa market worried that the provider in the medicine store or pharmacy would conduct an HIV test instead of a malaria test. See box 4.

Box 4: Perceptions of RDTs and Testing before Treatment

“Yesbecause it will save lives.” (Sinkor, Central Monrovia District, Greater Monrovia)

“It should be sold at a fixed price.” (Sinkor, Central Monrovia District, Greater Monrovia)

“Only qualified people should administer the test.” (Sinkor, Central Monrovia District, Greater Monrovia)

“Because it is always good to go to the hospital.” (SSI, St. Paul River, Rural Montserrado)

“Medicine stores don’t usually work for me so I prefer going to the clinic.” (SSI, St. Paul River, Rural Montserrado)

“Some of them are not trained.” (SSI, St. Paul River, Rural Montserrado)

“It will save me from spending for nothing.” (SSI, Bensonville, St. Paul River, Rural Montserrado)

“No, I will go to the hospital for further treatment because the RDT cannot lie ... maybe it is another illness so I will ask for another test at the drug store or go to hospital.” (Sinkor, Central Monrovia District, Greater Monrovia)

“RDT is the fastest test for malaria.” (SSI, Community, Kpallah, St. Paul River District, Rural Montserrado l)

“I will try to go to the hospital for further check-up.” (Sinkor, Central Monrovia District, Greater Monrovia)

“MoH should create more awareness for RDTs.” (GI, Gardnersville, Greater Monrovia)

“Just need to educate people in the community ... then burden will be reduced in the hospital.” (Sinkor, Central Monrovia District, Greater Monrovia)

“Things changing every day and we need to try the new medicine.” (SSI, Central Monrovia District, Greater Monrovia)

“RDT not sufficient for severe malaria.” (provider, Jallah Town, Central Monrovia District, Greater Monrovia)

“When test is cost low patient will not value it, so [it should be] 50–100 LRD.” (provider, Bensonville, Careysburg District, Rural Montserrado)

“...[concern] whether the materials is only use on one person.” (SSI, Kingsville, Todee District, Rural Montserrado)

“People at the clinic have more ideal.” (Kukaturnor, Commonwealth District, Rural Montserrado)

“[The test should be] absolutely free of charge...that will make people more willing to do the test.” (provider, Kingsville, Todee District, Rural Montserrado)

“The law will be alright to me because it will tell me if the child has malaria or not.” (provider, Gardnersville, Greater Monrovia)

“I will carry my child to a different hospital.” (SSI, Paynesville, Greater Monrovia)

“If I am told again it is not malaria, I will chase after the bucket.” (Gobachop, Paynesville, Greater Monrovia)

“Not all medicine stores are trained.” (SSI, St. Paul River District, Rural Montserrado)

“If the test is available and they are trained I will go there [medicine stores].” (Gardnersville, Greater Monrovia)

“For me I will not go there if the person is not a health worker.” (GI, St. Paul River District, Rural Montserrado)

ANNEX 1: CONSENT FORM FOR GROUP DISCUSSIONS AND INTERVIEWS



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National Malaria Control Program MOHSW

FEASIBILITY STUDY FOR INTRODUCING ACTS AND RDTs IN PRIVATE SECTOR PHARMACIES AND MEDICINE STORES IN LIBERIA

CONSENT FORM

GROUP DISCUSSIONS AND INTERVIEWS

Management Sciences for Health

My name is _____. I am an interviewer working with Management Sciences for Health and the National Malaria Control Program of the Ministry of Health and Social Welfare of Liberia. We are doing a study that will help to improve health care for Liberians. We are collecting information on the services that medicine stores and pharmacies offer the community. We are also interested in how to test and treat malaria.

This study involves a group discussion that will find out your views on medicine stores and pharmacies and their role in the treatment of malaria. We will use this information to help the MOHSW to improve testing and treatment for malaria in medicine shops and pharmacies. This will benefit the communities in Montserrado County in Liberia and hopefully more people around the country in future. There are no intended risks to you.

The group discussion will be approximately one hour long. It is completely your choice if you want to participate, and there will be no payment or compensation. You may leave at any time, and nothing will happen to you, and you can refuse to answer any questions without any penalty to you. All the information we get from your answers will remain private as allowed by law. All participants and interviewers will be asked not to discuss anything about the interview with people from the outside.

What is shared here will stay here.

This research has been reviewed and approved by the University of Liberia Internal Review Board.

Do you have any questions for me? Do you agree to participate in this study?

If you have any additional questions about this project, you may contact the Principal Investigator who is working with Management Sciences for Health; Rima Shretta, at rshretta@msh.org or the Program Manager of the National Malaria Control Program, Dr. Joel Jones, at jjonesdr@yahoo.com. If you have any questions about your rights as a research subject, you may contact Mr. Jemee K. Tegli of the Ethics Committee at the University of Liberia at tel: 06-583-774. You will be given a copy of this form so that you will know whom to contact.

By signing this consent form, you are saying that you fully understand the above information as it was explained to you and agree to participate in this study.

Please note, your words may be quoted directly. With regard to being quoted, please initial next to any of the statements that you agree with:

<input type="checkbox"/>	I agree that the researchers may publish documents that contain quotations by me.
<input type="checkbox"/>	I do not wish the researchers to publish documents that contain quotations by me

NB: Please remind study participants that their name will not be included with the quote.

Participant's signature _____ Date: _____

ANNEX 2: COMMUNITY GROUP DISCUSSION GUIDE

Researcher's signature: _____ Date: _____

Witness signature (if needed): _____ Date: _____

Thank you for consenting to participate in this work. May I begin?

Feasibility of Introducing ACTs and RDTs in Private Sector Pharmacies and Medicine Stores in Montserrado County in Liberia: A Qualitative Study

Community Group Discussion Guide

Total group discussion time: 1 hour–1.5 hours

Date: _____ Town name: _____ Location: _____

Discussion leader/moderator: _____

Rapporteur: _____

Number of participants: _____

Started at: _____

Ended at: _____

Hello, my name is _____ and I work with Management Sciences for Health and the Ministry of Health. We are talking to people in Montserrado to get their opinion about some health services for malaria. We would like to talk with you for about one hour.

Would you agree to participate? I can answer any questions you may have.

Note to facilitator:

- Get everyone to introduce themselves.
- Remind everyone we are not here to teach, but to listen to their views.
- We will talk for 1–1.5 hours. Snack and refreshment at the end.

Go through ground rules:

- Phones off.
- Respect each other's views—no laughing.
- Please speak up.
- Speak one at a time, and say your number.
- Explain the recording equipment. Get permission to begin and to record the discussion.

I am going to start the tape recorder. Can we begin?

INTERVIEWER, MAKE SURE THAT *EACH AND EVERY* PARTICIPANT PERSONALLY GIVES HIS OR HER CONSENT AND SIGNS BELOW.

QUESTIONS

Malaria

1. Tell me the symptoms of malaria?

2. Who gets malaria often in your area?

3. When people in this community are sick with fever or malaria, what do you do?
 - *Prompts:*
 - *Where do you go for treatment?*
 - *Ask about medicine stores/pharmacies if not mentioned.*
 - *How long would you wait before visiting a health facility/ pharmacy/medicine store?*

4. Why do you choose to go to these places?
 - *Prompt about medicine stores/pharmacies.*
 - *Prompt about opening hours.*
 - *Probe for affordability, availability, and access.*

5. What happens if you can't afford the full dose of medicine you need?

6. Any suggestions on how to improve this treatment service?

7. Where do you think is the best place to get malaria medicines? Why?

8. Is there a difference between malaria treatment given in health facilities and medicine stores?

9. How can you treat malaria?
 - What is the BEST way?

10. What other sicknesses are similar to malaria?

11. Do you ever get injections at the medicine store/pharmacy? Who administers them?

ACTs

12. Can you tell me some malaria medicines that are available in your community?

a. How do you feel about chloroquine (CQ)? Is it strong enough?

b. When you buy a treatment, do you always use up *all* the tablets?

i. Why/why not?

13. Which medicines are most effective? Least effective?

14. Why do you think this/these are more/less effective than the others?

15. Have you heard of ACT or AS/AQ (*Use best term throughout*)?

16. Have you ever taken ACT or AS/AQ?

17. What can you tell me about AS/AQ? Unexpected effects?

18. How do you think it compares with CQ or sulfadoxine-pyrimethamine (SP) (*Use best term throughout*)? Which do you think is most effective? Which is easiest to take [*prompt about quality, side effects*]?

ACT or AS/AQ is recommended by scientists and the government as the most effective medicine for malaria. Right now, AS/AQ is available mainly in health clinics and hospitals. It is possible that medicine stores and pharmacies will sell ACT or AS/AQ in the near future. However, it costs more than other antimalarials now sold in stores.

19. How much will you be able to pay for an appropriate or more effective malaria treatment?
20. If ACT or AS/AQ cost LRD 100 [*use a price higher than probable price*], which malaria medicine do you think you would buy? ACT__ non-ACT__
21. [*If chooses non-ACT, ask:*] If ACT or AS/AQ costs LRD 70 [*use probable price*], which malaria medicine do you think you would buy? ACT__ non-ACT__
22. [*If chooses non-ACT, ask:*] If ACT or AS/AQ costs LRD 30 [*use a price lower than probable price*], which malaria medicine do you think you would buy? ACT__ non-ACT__

23. How much would you be willing to pay for an ACT treatment?

- Adult dose
- Adolescent dose
- Child dose < 5 years

RDTs

24. Have you ever been tested to confirm malaria?

- *Probe for RDT and microscope*

25. Where was this test done?

26. Will you be willing to be tested in the medicine store or pharmacy?

27. Tell me what you know about rapid diagnostic tests (RDTs) for malaria (show one for the first time)

28. What are the costs of RDTs and other blood tests for malaria?

29. Would it be good if these tests were available to buy at pharmacies and medicine stores?

- Why?

30. Do you have any concerns about RDTs being sold in pharmacies and medicine stores?

31. Do you have any concerns about pharmacies and medicine stores performing an RDT on you?

32. What is a good price to buy RDTs at in pharmacies and medicine stores?

33. If you thought you had malaria but got a negative RDT test, would you still ask to buy an antimalarial? Which one?

34. Would it be good or bad if the government made a rule that says if you or your child has a negative RDT test, you *cannot* buy an antimalarial treatment?

35. And what if the government made a rule so that you *must* buy an RDT test before you can buy an antimalarial treatment?

36. If the medicine store or pharmacy told you that you did not have malaria and did not give you a treatment, what would you do and where would you go?

37. Where do you get health information? [Prompt [*and malaria information?*]]

- Posters? Where do you see them? Banners?
- Radio? Which station? What time?
- Community leaders?
- Newspaper?
- Community health volunteers?

[Prompt [*Which of these do you think is most effective? Can you give an example of a situation where one of these sources of information motivated you to change your behavior with regard to your health.*]]

End of GI

Closing remarks

Thank the participants

ANNEX 3: RETAIL INTERVIEW GUIDE



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National Malaria Control Program MOHSW

Feasibility of Introducing ACTs and RDTs in Private Sector Pharmacies and Medicine Stores in Montserrado County in Liberia: A Qualitative Study

Retail Interview

Date: ____ October 2012 Community Name: _____

District: St. Paul/Greater Monrovia

Shop name: _____ Type: Pharmacy Medicine Store

Address/Location: _____

[Observations about shop [e.g., size, cleanliness, likely clientele]]:

My name is _____ and as I mentioned, I work with Management Sciences for Health and the Ministry of Health and Social Welfare.

We would like to talk with you for some time as explained, but please feel free to attend to customers as necessary.

Would you agree to participate? I can answer any questions you may have.

Interviewer: sign if the vendor agrees to participate: _____

[remember to get vendor to sign consent form]

Respondent's name: _____ Position: _____

Telephone: _____

Part 1: General

First I'd like to ask about some general questions.

1. What is the difference between a medicine store and a pharmacy?

2. What is the highest qualification of the dispenser working in the shop?

3. What days and hours is the shop open?
 - Mondays to Fridays _____ mornings____ evenings_____
 - Saturdays ____ mornings____ evenings_____
 - Sundays _____ mornings____ evenings_____
 - Public holidays _____ mornings____ evenings _____

4. What do most of your clients or customers come to your shop for? What services do you provide?

5. Have you had any training in dispensing? [*Specify*]

Part 2: Typical process for determining malaria and recommending a treatment

I'd like to ask about your customers who think they have malaria or who have malaria symptoms.

6. What are some of the signs and symptoms of malaria that you know?[*List all*]

7. Do clients usually tell you they have malaria, or do they usually describe the symptoms?

8. On average how many clients do you serve in a day?

- Of these clients, how many are malaria clients?

9. What do you do if a client is very sick?

10. Do people ask for a malaria medicine by name?

11. [If yes] What are the most common malaria medicines people ask for?

12. When you recommend a malaria medicine, what do you usually recommend? How do you decide what to recommend?

13. Could I see the malaria medicines you sell? [Check each type sold and ask selling price of each.]

<input type="checkbox"/> CQ	cost: _____	pack size _____
<input type="checkbox"/> AS/AQ (baby)	cost: _____	(3) (25/62.5 mg)
<input type="checkbox"/> AS/AQ (toddler)	cost: _____	(3) (50/135 mg)
<input type="checkbox"/> AS/AQ (child)	cost: _____	(3) (100/270 mg)
<input type="checkbox"/> AS/AQ (adult)	cost: _____	(6) (100/270 mg)
<input type="checkbox"/> Amodiquine (monotherapy)	cost: _____	pack size _____
<input type="checkbox"/> Artesunate (monotherapy)	cost: _____	pack size _____
<input type="checkbox"/> SP (Fansidar)	cost: _____	pack size _____
<input type="checkbox"/> Injectables (e.g., quinine inj or specify _____)	cost: _____	pack size _____
<input type="checkbox"/> Other: _____	cost: _____	pack size _____

14. How much of each do you sell to a patient (what dosage and for how long)?

CQ _____
AS/AQ (baby) _____ (3) (25/62.5 mg)
AS/AQ (toddler) _____ (3) (50/135 mg)
AS/AQ (child) _____ (3) (100/270 mg)
AS/AQ (adult) _____ (6) (100/270mg)
Amodiquine (monotherapy) _____
Artesunate (monotherapy) _____
SP _____
Injectables (e.g., quinine inj or specify) _____
Other: _____

15. What do you do when a customer does not have enough money to pay for a full course?

16. Which antimalarial drug do you think is:

Most effective? _____

Least effective? _____

17. Where do you usually get your supply of antimalarials?

18. Do you give injections in this medicine store or pharmacy? Y N

a. What type of injections do you give?

b. How do you decide to give injections?

c. Do people ask for them, or do you recommend them?

d. How many injections do you give per week?

19. What do you do if someone has problems or an unexpected side effect to a medicine or injection that you gave?

Part 3: ACTs

20. **Perception of ACTs.** What do you think about **AS/AQ**? [*Show sample*]

How do you think it compares with other antimalarials? [*quality, ease/difficulty of dosing, unexpected effects, cost*]

21. **Price.** You probably know that AS/AQ is the first-line treatment for malaria in Liberia recommended both by scientists and the government. Other medicines such as CQ are not supported by the government. AS/AQ is currently available mostly in health facilities; however, it costs more than other antimalarials. It is possible that the government will work with some programs to reduce the cost to make it more affordable to people if it is sold through medicine stores and pharmacies such as this one.
If you bought an AS/AQ box of 25 strips, at a price LRD 1,000, for how much would you be willing to sell a strip to your clients?

How much profit would you need to make for a single AS/AQ treatment? In percentage? [Prompt [*what profit margin do you currently make on malaria medicines?*]]

What do you think would be the most acceptable price for a treatment of AS/AQ that would encourage the community to buy it?

For an adult?

For a child < 5?

22. **Advantages/Disadvantages.** Let's say the price was [*insert acceptable price just mentioned*]. Thinking of this store, what do you think the *advantages for this store* would be of carrying AS/AQ?

[make sure they think of advantage/disadvantage from perspective of their business, not the patient]

What do you think the *disadvantages to this store* would be of carrying AS/AQ?

[If not mentioned:] Would selling AS/AQ at a subsidized price reduce the sales of other antimalarials such as chloroquine or SP for malaria treatment?

Do you see that as a problem?

23. What other incentives do you think the government should offer (other than reducing the price)?

Part 4: RDTs

24. **Awareness/Experience.** Now I'd like to talk about RDTs—rapid diagnostic tests for malaria.

Have you heard of them? Y N

[If no, skip to Q. 25]

Have you had one yourself? Y N

Have you been trained to do one? Y N

Have you ever seen one done? Y N

Have you ever done one yourself? Y N

[If no] Is there anyone in this medicine store or pharmacy that who does it? Y N

Who? _____

25. **Understanding instructions.** It is possible that stores like this will be able to do this test for malaria in the future, using this kit.

[Show kit along with instructions and draft job aids. Allow respondent to examine.]

25a. *[If the respondent said in the previous question that he or she was trained to do an RDT, ask respondent to explain to you how it is done]:*

Is there enough space in the store to perform the test?	Y/N
Is the space being used clean?	Y/N
Does the provider describe the process correctly?	Y/N

25b. *[If the respondent said in the previous question that he or she has not been trained to do an RDT, ask respondent the following]:*

Looking at the instructions, would you be willing to do an RDT in this shop or pharmacy?

Do you understand the job aid?

26. Is there anything about these instructions that is unclear? How could they be improved?

27. Thinking about your regular staff who serve customers, do you think it suitable for them to do this kind of test, if they had some training? *[Find out what "level" of staff they feel appropriate to do test, and what kind of training is needed.]*

28. *[Show picture of positive and negative results. Allow respondent to examine.]* How would you interpret the results?

29. **Advantages/Disadvantages.** Thinking about doing this test in this store, what *problems or disadvantages* do you see?

Now what about the advantages or benefits to your store of offering this testing?

How do you normally dispose of your medical waste or sharp instruments such as needles? Any there any problems?

30. **Acceptance of regulatory restrictions.** It is possible that there would be a regulation stating that AS/AQ could be purchased *only* following a *positive* RDT test. How acceptable or unacceptable would this be to shop owners like you?

How acceptable or unacceptable do you think this would be to customers?

Do you think a customer will demand that you give an antimalarial even if the test shows no malaria?

If customers still demanded an antimalarial, what would you do?

What would you do about a patient with a high fever who did not have malaria according to the test?

[Explore confidence in recognition of danger signs and treatment failure, whether and where would refer]

31. **Price.** What should be the price for RDT?
- a. Free of charge?
 - b. Price of RDT included in the ACT treatment if RDT is positive?
 - c. What about the price if RDT is negative?
 - d. What do you think is an acceptable price, so that the community will buy them?

Other

32. How do you think this intervention (AS/AQ and RDT) would fit in with existing medicine store or pharmacy supply chains?

- a. Do you think there will be any problems?

33. Do you think you need additional training?

34. Do you have a register to record the medicines sold?

Y N

[Ask to see it if Y]

35. If you were provided with a register to record the tests performed, the treatments given for malaria, and any problems or unexpected effect experienced by your customers, would you be able to fill it in daily?

Do you have any questions for me?

END

Thank the participant as appropriate.

ANNEX 4: CUSTOMER/CLIENT INTERVIEW GUIDE



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National Malaria Control Program MOHSW

Feasibility of Introducing ACTs and RDTs in Private Sector Pharmacies and Medicine Stores in Montserrado County in Liberia: A Qualitative Study

Customer/Client Interview

Date: ____ October 2012

Community Name: _____

District: St. Paul/Greater Monrovia

Address/Location: _____

My name is _____ and as I mentioned, I work with Management Sciences for Health and the Ministry of Health and Social Welfare.

Have you or your child had fever or malaria in the last three weeks?

We would like to talk with you for some time as explained.

Would you agree to participate? I can answer any questions you may have.

Interviewer: sign if agrees to participate: _____

[Remember to get the interviewee to sign consent form]

Respondent's name: Mr./Mrs./Ms _____ Age: _____

Gender: M__ F__ Highest grade level completed: _____

General

1. Where do you get information on health or malaria and its prevention and treatment [*prompts: posters, radio, TV, health facilities, other*]? [*Write down all the responses given.*]

2. If you wanted to buy a medicine for malaria, where would you go? [*Find out if medicine store or pharmacy or other*]

MS__ PH__ Health facility__ Other:_____

2a. Why?

3. Have you or anyone in your family ever had an injection of any kind at [*place*]?
N__ Y__

4. Do you have a child under 5? N__ Y__ [*If has child under 5, ask the rest of the questions about child. If not, ask about respondent.*]

ACTs

5. There are different medicines available for malaria. The last time you/your child had malaria, what medicine did you take/give?

[*Ask to see the package if they have it*]

5a. Why did you take/give that medicine instead of another one?

Who told you to take/give it?

5b. What is the cost of each?

5c. Do you always finish all the medicines you were given?

N__ Y__ Other_____

6. *[If medicine not ACT or AS/AQ, ask:]*

Have you heard of ACTs/Artesunate-Amodiaquine? This medicine can either be yellow and white together in the same pack or combined tablets yellow and white tablets.

N__ Y__

[If yes: ask the questions below]

[If no: skip to COST]

Have you ever taken/or given your child ACT/AS-AQ?

N__ Y__

[If yes: ask the questions below]

[If no: skip to COST]

How do you think it compares with *[medicine named]*?

Which do you think is most effective?

Which is easiest to take *[prompt about dosage, quality, side effects]*?

COST

ACT or AS/AQ is recommended by scientists and the government as the most effective medicine for malaria. Right now, AS/AQ is available only in health clinics and hospitals. It is possible that medicine stores and pharmacies will sell ACT or AS/AQ in the near future. However, right now it costs more than other antimalarials sold in stores.

7. If ACT or AS/AQ costs LRD 100 for an adult dose, which malaria medicine do you think you would buy?

ACT__ non-ACT__

[If chooses ACT, skip to RDT section]

[If chooses non-ACT, ask:]

If ACT or AS/AQ costs LRD 50, which malaria medicine do you think you would buy?

ACT__ non-ACT__

[If chooses ACT, skip to RDT section]

[If chooses non-ACT, ask:]

If ACT or AS/AQ costs LRD 20, which malaria medicine do you think you would buy?

ACT__ non-ACT__

[If response non-ACT]

What price would you be willing to pay?

What would change your mind?

RDTs

8. Have you ever heard of a blood test using a rapid diagnostic test to tell if a person has malaria? Y__ N__

[If NO, give simple explanation and show kit.]

[If YES, ask:] Have you had one yourself? Y__ N__

[If NO:] Have you ever seen one done? Y__ N__

9. In the future, it is possible that this test will be available in medicine stores and pharmacies so that people can know if their illness is really malaria. If you thought you/your child had malaria and this test were available *free* in the medicine store or pharmacy you usually go to, do you think you would agree to do the test?

Y__ N__

Why? *[Explore reasons.]*

10. Just so I understand, what *problems or disadvantages* do you see of being tested in a medicine store or pharmacy?

11. And what *advantages or benefits* do you see of being tested in a medicine store or pharmacy?

I asked about getting the test for free. It is possible that the test will cost something.

12. If you thought you had malaria and the test cost LRD 100, do you think you would get the test? Y__ N__

[If Yes: Skip to next section]

[If No:] If the test cost LRD 50, do you think you would get it? Y__ N__

[If No:] If the test cost LRD 20, do you think you would get it? Y__ N__

What price would you be willing to pay?

RESPONSE TO NEGATIVE RESULTS

13. What if you thought you/your child had malaria, but the test showed that you/your child did not. What would you do? *[Ask for details]*

14. It is possible that there would be a regulation from the MoHSW stating that malaria medicine could be purchased only if the test showed the patient had malaria. What would you think of this regulation if you/your child was still sick? [*Ask for details*]

[*If response is negative:*] What would make you change your mind?

What if the medicine store or pharmacy offered another medicine (not malaria medicine)?

Do you have any questions for me?

END