

**Roll Back Malaria Consultative Meeting on the Role of  
Medicine Sellers in the Management of Malaria:**

***What's worked and where do we go from here?***

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**Meeting Report**

***Roll Back Malaria / Malaria Case Management Working Group***

*26-27 May 2004 – Accra, Ghana*



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## ACRONYMS

ACT	Artemisinin-based Combination Therapy
ARI	Acute Respiratory Infections
BCC	Behavior Change Communication (also known as IEC: Information Education and Communication)
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
HMM	Home Management of Malaria
LGA	Local Government Area (Nigeria)
NGO	Non-Governmental Organization
OTC	Over-the-Counter (usually drugs, licensed for sale without a prescription)
PMV	Patent Medicine Vendor (also known as Patent Medicine Seller or Dealer)
PPAM	Pre-Packaged Antimalarials: tablets enclosed in sealed sachets or blister packs, not loose
RBM	Roll Back Malaria
RDT	Rapid Diagnostic Test
WHO	World Health Organization

## SUMMARY

In many settings in Africa, over 50% of fever cases in children are treated with drugs obtained from private retailers, including pharmacies, medicine shops, or general provisions shops. In the majority of cases, the attendants dispensing drugs have little or no medical training, and the service (e.g., recognition of the illness, choice and regimen of drugs recommended for treatment, instructions to the client) and drugs provided are poor quality. Drug sellers will almost certainly continue to play a significant role in treatment of many childhood and other illnesses in Africa. This has led to a growing recognition that Medicine Sellers represent an important human resource for reaching underserved populations. This document reports the outcome of a Consultative Meeting held under the auspices of Roll Back Malaria's Malaria Case Management Working Group in Accra, Ghana on May 26–27, 2004 to review and glean lessons learned from interventions designed to improve Medicine Sellers' management of malaria in children in Africa. The focus of the meeting was on information collection and use, since the Working Group had highlighted the lack of information needed to move forward on improving the role of informal private providers.

A pre-meeting literature review that included an extensive search of the gray literature provided key information on 15 identified interventions implemented in Africa to improve Medicine Sellers' management of malaria. All interventions targeted either medicine shops only or medicine shops and general provisions shops. Thirteen of the interventions were implemented in the past five years. Generally the interventions show that they offer immediate and practical opportunities for improving management of malaria in children. Unfortunately, content and quality of information on process and outcome varied greatly across these reports, making it impossible to draw general conclusions about relative value of the overall interventions or of the common components across interventions.

The Consultative Meeting included plenary presentations and work group discussions with the intention of formulating recommendations to guide the Roll Back Malaria (RBM) partnership's approaches in working with Medicine Sellers to improve management of malaria at the community level. Two overarching recommendations came from the meeting:

- In those countries where a large part of the population obtains malaria treatment from "Medicine Sellers," the Ministries of Health and RBM partners should engage the private sector as soon as possible to undertake and/or strengthen implementation of programs to improve access to effective anti-malarial treatment.
- Program managers should compare approaches across the spectrum—from relatively rapid, malaria-focused training to longer-term, resource intensive franchising—to determine the most suitable approach in light of their program objectives and of the particular situation in their country.

The meeting work groups and plenary sessions also provided a set of recommendation for each of the following areas:

- 1) Gaps in knowledge/experience with Medicine Sellers that should be priorities for RBM partners supporting applied or operations research;
- 2) Identification of available sources of information that can be used to develop a situation analysis on the role of Medicine Sellers in home management of malaria; and
- 3) Identification of process and outcome indicators that should be included to provide information that would be useful for project managers and ultimately for comparisons with other interventions



# 1. INTRODUCTION

## 1.1 Rationale

Surveys from across Africa have reported that between 15–80% of caregivers utilize informal private sector medicine shops for treating childhood illnesses, including fevers and malaria. This figure may be even larger since different survey methodologies may obscure the use of medicine shops under the broad heading of “home treatment,” which often involves using drugs purchased earlier from shops. While there are regional and national variations, the reality is that these medicine shops are a large potential resource for improving case management of malaria. The Consultative Meeting was undertaken to review current knowledge of interventions to improve the role of informal private providers in management of malaria in children under 5 years of age. It was convened by the Roll Back Malaria (RBM) Case Management Working Group, which had identified the issues as being of crucial importance in scaling up access to effective treatment. The meeting agenda and participants are shown in Annexes 1 and 2. A review paper “Interventions to Improve the Role of Informal Private Providers in Malaria Case Management for Children in Africa” was prepared as a guide for the meeting. Its Executive Summary is included in Annex 3.

## 1.2 Meeting Objectives

The objectives of the Consultative Meeting was to develop a menu that can be used at the national and sub-national level to identify situation-appropriate interventions to improve Medicine Sellers’ practices for case management of malaria in children under 5 years of age:

- Using the review as a guide, prioritize a list of research topics that will guide the RBM Partners’ investments in operations research to improve Medicine Seller services.
- Identify the essential components of a situational analysis for Medicine Seller interventions, which will be developed as a companion piece to this activity.

## 2. OVERARCHING ISSUES

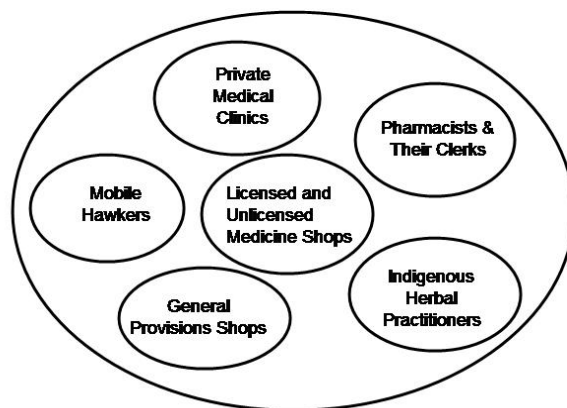
A primary assignment for the participants of the Consultative Meeting was to determine whether evidence presented in the pre-meeting review and during the course of the meeting is sufficient to recommend that Roll Back Malaria partners actively engage informal private providers as partners to achieve the Abuja targets. A concomitant task was to define “informal private providers.” These fundamental issues were addressed in working group and plenary sessions.

On the basis of review of the evidence presented and the risks associated with non-intervention, the participants of the Consultative Meeting recommend that, in those countries where a large part of the population obtains malaria treatment from “Medicine Sellers,” Ministries of Health and RBM partners engage the private sector as soon as possible to undertake and/or strengthen implementation of programs to improve access to effective antimalarial treatment.

The Consultative Meeting participants also recommend using the term “Medicine Sellers” to capture the disparate groups of interest to the RBM partners as they seek to improve the delivery of timely, appropriate treatment for malaria. What “Medicine Sellers” are commonly called and the laws regulating them differ somewhat across Africa. Figure 1 portrays the universe of private providers who sell medicines in Africa.

Medicine sellers include health professionals (doctors, pharmacists, and nurses) who legally dispense prescription drugs from private medical clinics and pharmacies. However, even in those facilities, unqualified attendants frequently serve clients. Medicine Sellers also include a range of non-health professionals selling drugs from shops or as hawkers. Medicine shops and general provision shops are often major sources of frequently used drugs such as antimalarials. As the name indicates, medicine shops principally sell medicines. In countries where such shops are licensed they may legally sell proprietary, over-the-counter (OTC) drugs such as analgesics, cough syrups, vitamins, and a variety of antimalarials. These shops also often illegally sell injectable antimalarials, antibiotics, tranquilizers, and other prescription drugs. General provision shops usually do not qualify for a license to sell even OTC drugs, but they often stock antimalarials and antipyretics and occasionally a limited range of prescription drugs. Traditional medicines are sold in a variety of settings.

**Figure 1**  
**The Universe of Private Medicine Sellers**



The pre-meeting review and the Consultative Meeting focused on workers in medicine shops, and the term Patent Medicine Vendors (PMVs) was also used in the review to indicate that the drugs sold had been, or are currently, under patent. These are also called “western” or “orthodox” medicines. This focus came from a comprehensive review that uncovered 15 interventions to improve the management of malaria by informal private providers in Africa, and all targeted individuals working in medicine or provision shops. This is consistent with numerous studies showing caregivers most often go to medicine or provision shops to seek treatment for fever in children.

### 3. LESSONS FROM THE CASE STUDIES

Health professionals involved in six of the more promising interventions identified in the pre-meeting review were invited to address specific issues around implementation, scaling up, and sustainability. New information and perspectives on going to scale, the benefits of multi-strategy approaches, and sustainability are highlighted here.

#### 3.1 Going to Scale

The issue of going to scale with an intervention was examined across a spectrum of broad approaches that ranged from relatively rapid, malaria-focused training interventions to longer term, resource intensive franchising approaches that enhance the health care delivery system of underserved areas.

The feasibility of taking Medicine Seller interventions to scale was demonstrated in two projects that used the training approach: the Kilifi project in Kenya and the Abia project in Nigeria. The Kilifi training reached 285 shop owners and is being expanded by the Kenyan Ministry of Health, District Health Management Teams, and the Kenyan Medical Research Institute from one to an additional six districts over the period 2002-2005. In addition, all districts in two provinces applied for and were granted funds through their district malaria business plans to support retailer training based on the same training model, meaning that a total of 26 districts will be implementing this intervention in the near future. In Nigeria, requests from the Abia State Ministry of Health and the state patent medicine dealers association resulted in expansion of the training to use pre-packaged antimalarials (PPAMs) to an additional nine local government areas (LGAs). To date over 1,200 Medicine Sellers in 11 of the 17 LGAs in the state of nearly three million people have been trained.

Both projects relied on existing structures including Medicine Seller associations, district health teams, and local community-based organizations. Both also benefited from having a well-developed training curriculum and supportive Behavior Change Communication (BCC) materials that targeted both the caregivers and Medicine Sellers. In both projects, the Medicine Sellers were supportive of and highly interested in the training. In addition, the Abia project included a strong distribution network and social marketing of a branded PPAM, and production of danglers and stickers to identify shops of trained Medicine Sellers. Scaling up in both cases could be possibly constrained by the fact that district health workers are often few and overburdened. The significant involvement of the Medicine Sellers association and use of peer-trainers in Abia State were essential for scaling up to additional LGAs. These associations offer a viable alternative to dependence on a limited number of workers in the health system.

The franchising approach seeks to improve the overall quality of shops, products, and seller performance. Included in these interventions are enabling interventions, such as accreditation procedures and access to microfinance, and quality assurance activities such as monitoring and supervision, record keeping, and central drug supplies. There is a high degree of supervision, and shop owners who do not maintain standards can lose their accreditation and investment.

One example of franchising, the Child and Family Wellness (CFW) Shops in Kenya, has expanded from 11 shops in 2000 to 60 in May 2004, with hopes of reaching 150 by the end of 2004. At least two-thirds of the shops are run by Medicine Sellers. The remainder shops are run by nurses who, with their higher level of training and larger inventory of drugs, also serve as referral points for the Medicine Sellers.

Shops are found in four districts with hopes of reaching ten districts by December 2004. The ability to expand is enhanced by community acceptance of the high quality care provided. A limiting factor is the lack of trained managerial staff and managerial skills among the shop owners.

The second franchising case study, the CARE shops project in Ghana, opened over 50 shops in 2003 and will have more than 200 opened by the end of 2004. Both the Ghanaian and Kenyan franchise project staff recognized that there is need to achieve a critical mass of franchisees in order to achieve maximum benefit from economies of scale. The CFWshop<sup>TM</sup> project estimated that they could become self-financing when they have franchised 500 shops. As of now, with a relatively small number of shops and without subsidies,

the franchises may not be able to sell drugs at lower prices than other retailers. Competition may slow progress or cause some to go out of business. On the positive side, both franchise schemes offer an opportunity for training and membership of a group viewed by the public as providing relatively higher quality products and service.

With highly focused and short training sessions, it is possible to reach hundreds of medicine shops in a state or province in less than a year. The emphasis on wider performance and operating standards in the franchise approach means a slower expansion of the intervention. The meeting noted that while RBM does emphasize health system development as a foundation for tackling malaria, there is also an urgent need for achieving Abuja targets and saving lives. The meeting recognized that both approaches have merit and may complement each other. The focused, short training yields immediate improvements in treatment for children with fever, while the more complex and slower expansion of the franchising approach builds the momentum necessary to ensure the better regulation and quality assured service delivery that are required to achieve sustained improvements in child survival. The relatively rapid, malaria-specific training of Medicine Sellers will provide greater impetus for achieving the Abuja targets.

### 3.2 Multi-Strategy Interventions

The review document<sup>1</sup> made it clear that none of the 15 projects relied solely on training, and the six case study presentations highlighted the synergies involved in engaging in multiple strategies and levels of intervention. Several projects emphasized the need to attend to broader systems issues such as drug supply and quality control. Prepackaging of drugs was one way of addressing quality.

The need for BCC materials to support both the supply-side and demand-side strategies was stressed. Consumer awareness of drug quality issues was seen as valuable not only for generating demand, but also for creating accountability among the Medicine Sellers. The Vendor-to-Vendor training component of the project in Bungoma, Kenya addressed the knowledge and performance of Medicine Sellers through mobile vendors and wholesale drug sellers who were trained to be educators and advocates of the national guidelines. These wholesale vendors distributed customized job aids to small rural and peri-urban retailers. The companion intervention, Neighbor-to-Neighbor, used health education to help create demand for services. The Abia project addressed supply not only through training but also the provision of the PPAMs. The demand-side included more traditional mass media (radio, billboards) and counseling outreach by community health promoters.

The strategy of branding was evident in several projects. The PPAMs used in Abia State carry a recognizable RBM logo. The franchises used a brand name for their shops. The projects that stressed appropriate antimalarial drug use indirectly promoted the stocking and sale of appropriate branded medicines. Branding was seen as an important way of communicating messages of quality and appropriateness to the public, and provided trainees with a sense of common identity.

Advocacy with district, state, and national governments was seen as a means for guaranteeing both access to appropriate medicines and an appropriate role for Medicine Sellers. However, it was often only the project staff that engaged in advocacy. As pointed out from the negotiation approach used in Uganda, project staff are time limited and may be absent for routine monitoring activities and for taking the program to scale. For sustainability and expansion of interventions, local non-governmental organizations (NGOs) need to be engaged.

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<sup>1</sup> Brieger W, Unwin A, Greer G, and Meek S. 2005. *Interventions to Improve the Role of Informal Private Providers in Malaria Case Management for Children in Africa*. London, UK and Arlington, Va., USA: the Malaria Consortium and BASICS for the United States Agency for International Development; prepared for Roll Back Malaria's Sub-group for Communication and Training and Malaria Case Management Working Group

### **3.3 Sustainability**

The case studies demonstrated the important lesson of incorporating self-sustaining mechanisms in interventions. The Abia project recruited master trainers among the Medicine Sellers who became peer-trainers for implementation of the program and later served as a resource for refresher training and program expansion. The Vendor-to-Vendor project also trained medicine wholesalers in what could be termed a peer education process that has the potential for perpetuating the training process if supportive mechanisms can continue. The potential sustaining role for Medicine Seller associations was broached in several presentations.

The issue of sustainability for the franchising models was especially salient. Much investment goes into training and supervision, supply systems, micro-credit support, and of creating the franchise identity. To date, none of the franchise projects have reached that critical mass of members that would make the system sustainable without external support. The Child and Family Wellness Shop program in Kenya demonstrated the importance of a locally based NGO that seeks and coordinates initial funding until the franchise system is self-sufficient.

The challenge of involving government health systems in scaling up and sustaining projects was addressed in several presentations. In Kilifi, Kenya, difficulties for local health systems in terms of regular financial support and health worker time commitment for supervision and follow-up activities were observed. In Uganda, local government health services were enthusiastic about the negotiation processes with Medicine Sellers, but also had limited resources for sustaining supervision afterwards.

## 4. MEDICINE SELLERS AND THE INTRODUCTION OF ARTEMISININ-BASED COMBINATION THERAPY

Rapidly increasing drug resistance is possibly the greatest threat to achieving the objectives of Roll Back Malaria. Artemisinin-based Combination Therapy (ACT) could be a breakthrough, as it has a higher efficacy than currently used antimalarials, and the combination of drugs with different modes of action may delay development of resistance. The World Health Organization (WHO) recommends that countries, in revising malaria treatment policies, should opt for a combination treatment, preferably an ACT. The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) has given countries the confidence and means to introduce ACTs, and countries are changing policies more quickly than ever before.

Major issues in changing to ACTs, which have implications for their use by Medicine Sellers, include drug supply, regulation, ensuring rational use (including improved diagnosis), decisions on the level of the system where ACTs are deployed, cost containment, sustainable financing, and communications. It is essential that countries determine a policy on use of ACTs by private providers at the outset to address these issues, but should remain open to updating the policy relatively soon, as experience in use is obtained. While many people rely on Medicine Sellers for access to treatment, the generally low quality of service becomes even more problematic with the probable increased costs and more complex dosages required for ACTs. The degree to which policies should restrict ACTs for sale only in pharmacies and clinics—as for antibiotics—needs careful consideration. Several countries are planning phased introduction, beginning with government health facilities and specific facilities such as mission hospitals and “recognized” NGO facilities. This will allow time to address any initial problems of supply and use in a more controlled environment.

A major practical issue to be addressed, beyond the issue of proper use of ACTs in the private sector, is the issue of how to make highly subsidized treatments available through the private sector. In many countries CoArtem is already registered and so will be available through the private sector, as is artesunate. Private providers who are already prescribing artesunate should be encouraged to co-prescribe another recommended antimalarial to achieve ACT.

Given that ACTs will inevitably be accessed by Medicine Sellers, the major risks and benefits were outlined to promote discussion of strategies for managing the risks effectively. The major *risks* of enabling use of ACTs by Medicine Sellers include:

- Overuse – in the absence of diagnosis, especially by adults
- Misuse – retailers may give wrong dosages
- Splitting CT into component monotherapies (where they are not co-formulated)
- More rapid development of resistance if one of the components is also used as monotherapy
- Patients who should be seen by a qualified health worker may delay presentation (increasing the risk of severe complications and death) if there is a perception based that Medicine Sellers provide more highly effective treatment than before. This will need careful framing in communications.
- Cost of subsidies would divert funds from potentially more cost-effective interventions, if the subsidies were misused
- Inequity of access if treatment is unsubsidized

*Benefits* include:

- Much greater access to ACTs in areas where the formal health system is inadequate
- Minimizing use of monotherapy by allowing all outlets to use ACT
- Limiting development of a black market and fake drug market by reducing the incentive to the private sector to obtain drugs illegally from the formal sector or purchase fakes to meet demand
- Avoiding complex communication messages for a policy recommending one drug in the public sector on the basis that it is better than others, then recommending other drugs in the private sector

- Avoiding overload of an already overstretched public sector, if the patient load currently handled by Medicine Sellers all turned to the public sector
- Potential cost savings to patients and governments from treating cases effectively at first onset of illness

If Medicine Sellers are excluded from formal access to ACTs, it is unclear what they and the patients who use them will do. They may obtain ACTs unofficially, which could stimulate leakage from the public sector or spread of fake and substandard products, or they may continue to offer less effective monotherapies. When they become aware of the efficacy of ACTs, patients may turn in greater numbers to health facilities, which may lead to better management as long as the facilities can cope with the extra patient load. The alternative scenario is that patients may continue to buy what the sellers offer, because they prefer to use Medicine Sellers.

A key question is whether it is ethical to promote or permit drugs with poor efficacy for use in home care and for sale by Medicine Sellers, when it is known that they are a major source of treatment and while effective drugs are available in health facilities.

#### **4.1 Drug Supply**

Given the large number of countries intending to change their policy to ACT, there may be short-term limits in global ACT supplies, so that immediate introduction to cover all current consumption of drugs by formal and informal sectors may be difficult. Measures, including better forecasting and prequalifying more manufacturers, are being taken to ensure supply meets demand, so that this would only be a short-term problem. It will be important to implement policies for rational use, including regulation and improved diagnosis to make best use of available supplies. A phased introduction as planned in some countries could address the supply constraint.

#### **4.2 Rational Drug Use by Medicine Sellers**

If ACTs are to be made available to Medicine Sellers, strategies are needed to reduce inappropriate use by improving diagnosis (for example, exploring greater use of rapid diagnostic tests) or targeting priority users (for example, by promoting subsidized doses for children under 5). Training for providers and communication strategies for users can reduce inappropriate use and, together with major investment in regulatory capacity, limit the spread of fake drugs.

#### **4.3 Level of the System to Introduce ACT**

Strategies need to address access to ACTs by both the formal and informal private sectors. Phased introduction starting with the public sector, then the formal private sector, and finally the informal private sector may be the most practical approach, but it is important to state what drugs Medicine Sellers can use in the interim. Home Management of Malaria (HMM) includes working with Medicine Sellers or through community agents, and it is important to consider whether introduction of ACT favors one approach over another. Greater control may be possible over community agents, but this may be accompanied by lower efficiency and greater costs (e.g., for supervision). There should be opportunities to share communication and training resources for work with Medicine Sellers and other HMM agents.

#### **4.4 Strategies for Containing Costs Nationally**

The much higher cost of ACTs than of current antimalarials will impose a burden on both the governments and users. At present, the poorest patients often bear more of the cost of antimalarial treatment than the government, as they resort to self-treatment. If it is decided that ACTs should be available to Medicine

Sellers, decisions will also be needed on subsidy options. Subsidies would make the cost of the policy much higher, including time and money to manage the subsidy system. The level of subsidy would need to be high enough to ensure access to the poor and to discourage theft and forgery. Subsidy could be universal or targeted (if efficient targeting were possible) at either biologically or economically vulnerable groups, thus saving some cost to governments.

Some possible consequences of not subsidizing ACTs for Medicine Sellers include the following: only the wealthy buy ACTs, more patients turn to the public sector, patients continue to buy monotherapy, governments needing to provide different guidelines and communications for public and private sector, theft from the public sector, and increased infiltration of fake drugs. Universal subsidy could be delivered at the level of the manufacturer or importer through fixed payments or tax breaks, while ensuring that retail price is controlled. If the subsidy were delivered at the level of national distributors, it could either be universal or targeted through different packaging for different groups. At the level of the consumer or retailer, subsidy could be targeted through voucher systems, but these would be complicated.

#### **4.5 Sustainable Financing**

At present, many countries are benefiting from GFATM grants, which fully cover the costs of the drugs. Accurate costing will be essential if ACT is to be made available to Medicine Sellers at subsidized prices. In the longer term, countries need to lobby for maintenance of GFATM and also build the costs into expenditure frameworks.

Priority actions include: making decisions on Medicine Sellers in policies, beginning the process of registration for OTC use, advocating for global subsidies, forecasting needs including Medicine Sellers, sharing communication strategies and resources, investing in regulation, and investing in general systems strengthening. Priorities for research include: designing implementation research in countries with different strategies, testing diagnosis strategies, and assessing access to ACT by socioeconomic status.

## 5. STAKEHOLDER PERSPECTIVES

The Consultative Meeting addressed the consumer, Medicine Seller, and government perspectives through a series of presentations, panels, and discussions.

### 5.1 Consumer Perspective

Key points from the consumer perspective were summarized from a series of studies in Ghana that investigated what consumers do to acquire drugs, why, and what they would like to see change. Care seeking patterns were similar to reports from other African countries and showed that for 50–60% of caregivers, the first action taken for febrile illness, presumed to be malaria, was home treatment with no consultation. Findings also showed the primary reason for the use of outlets was proximity (71%), and the most commonly purchased drugs were analgesics (74%).

A key reason that clients patronize Medicine Sellers is their relatively easy access, in terms of difficulty and time required for travel. Medicine sellers may also be cheaper than a visit to a government clinic, when opportunity and travel costs are taken into account. Access in the most geographically remote regions of many African countries is bridged by the presence of itinerant Medicine Sellers. Some reports indicate that itinerant sellers are shop owners from nearby towns. Balancing the service that the medicine shops and itinerant sellers provide to otherwise underserved areas against the potential harm from poor quality drugs is difficult, but driving informal sellers underground through fear of regulation was not thought to be an effective approach.

Common complaints about Medicine Sellers were that the drugs they sold were not cheap (most often branded antipyretics and analgesics) and that many have no knowledge about the drugs they sell. Issues of access to information and drug quality are not being addressed in a systematic fashion with Medicine Sellers. More work is needed to identify the appropriate combination of training, communications, monitoring, and/or regulation needed to address these issues.

### 5.2 Medicine Seller Perspective

The Medicine Sellers' perspective was presented by three panel participants, one each from Kenya, Nigeria, and Ghana. These participants represented Medicine Sellers involved with franchises or with rapid, focused training to improve management of malaria in children. Key motivating factors cited by the panel included gaining knowledge that could lead to improved services, sales, and standing in the community. In cases where PPAMs were introduced, Medicine Sellers were pleased about the convenience and simplicity in providing the appropriate regimen, but were concerned about supplies. There was a strong feeling that continuous education and Information-Education-Communication (IEC)/BCC materials were important components for success. Medicine Sellers felt that the costs were too high for licenses from the government and/or for joining the franchise. Training was considered to be too expensive, in some cases due to charges for training, but more commonly due to lost business while attending the training.

Government relations need to be improved. In the worst situations, Medicine Sellers have felt that participation in training or other intervention activities might lead to increased monitoring or even punishment from the government. The sentiment among franchisees is that, having invested considerable resources to upgrade their services and quality, government officials should promote their shops and not continue to harass them. Better communication between Medicine Sellers and the government is needed to ensure that the improvements gained through interventions are recognized and that those who participate are not punished.

Franchisees cited some distinct concerns. There is an increased burden of following rules and keeping records, and failure can lead to expulsion and loss of their entire investment. The list of approved drugs for the franchise is generally considered too short, and the time for restocking is considered too long. However, they appreciate the benefits of cheaper, good quality drugs and the branding that improves their standing in

the community. Factors cited as helpful for sustaining interventions included ongoing or refresher courses and maintaining supplies of IEC/BCC materials (e.g., posters and handouts).

In sum, the Medicine Sellers represent willing partners who would like to increase their knowledge and abilities to care for children with malaria in ways that will both increase their standing in the community and ultimately their business. Where the sacrifice for participation in an intervention is likely to lead to an increase in business, the Medicine Sellers are willing to invest their time and, in some situations, their money in the intervention.

### 5.3 Government Perspective

The government perspective was presented in a panel that included representatives from Kenya, Nigeria, Uganda, and Ghana. Medicine Sellers were recognized as important sources for treatment of childhood illness in all four countries, and interventions to improve Medicine Seller practices related to the management of childhood illnesses have been implemented in each country. Kenya has supported three operational models: franchising, participatory training, and a cascade training involving wholesalers. Nigeria combined participatory training for Medicine Sellers with social marketing for PPAMs. Ghana has supported two interventions, franchising and Medicine Seller training. Unique among these countries, Uganda has developed a national strategy based on a persuasion/negotiation approach. In this approach moderators negotiate with the Medicine Sellers to change common but inappropriate practices. Moderators routinely visit the Medicine Sellers' shops to review the list of practices requiring change, which was agreed on during the negotiation sessions, and to reinforce the commitment to change.

A backdrop to the government perspective is that regulation enforcement is limited by small budgets compared to the relatively large numbers of Medicine Sellers. The situation is even further complicated by lack of clear lines of authority. In Nigeria, for example, for almost a decade it was unclear whether the State or Federal authority was responsible for licensing medicine shops. Nigeria is now in the process of investing the National Pharmacy Council with regulatory authority, as is the case in Ghana, and for providing rudimentary training for the Medicine Sellers.

There was general agreement in the meeting that engaging the Medicine Sellers and communities in the development and implementation of the interventions was beneficial. Medicine Seller associations are strong institutions and have been useful in supporting interventions in Ghana and Nigeria, but in Uganda the majority of Medicine Sellers are not affiliated with associations. These and other national or site-specific differences are important in determining appropriate interventions. There was also general agreement among the meeting participants on the potential contribution of Medicine Sellers to home management of malaria and on the need to incorporate interventions targeting Medicine Sellers into national HMM strategies.

A common problem area for Medicine Sellers is a lack of acceptance and support by health professionals and their associations. In some situations these have been overcome with persuasion and advocacy. A related potential problem, however, is the eventual introduction of ACTs as the first-line treatment and the health professionals' perspective on Medicine Seller distribution of the new drugs.

The high cost of ACTs raises questions about cost effectiveness of widespread presumptive treatment. A greater reliance on either traditional microscopic examination or Rapid Diagnostic Tests (RDTs) indicates that involvement of Medicine Sellers in distribution of new therapies for malaria will be problematic. Country representatives at the meeting all predicted a long lag time before ACTs will be allowed into the private sector, and an even longer period before they reach the level of the informal Medicine Sellers.

The Uganda negotiation intervention, which included training on malaria, acute respiratory infections (ARI), and diarrheal diseases, raised issues of the value of including multiple diseases in short, intense interventions. Including multiple diseases does heighten efficiency by expanding the existing training opportunity to cover other key childhood diseases. But this must be weighed against the advantage of keeping the messages simple to avoid overloading the Medicine Sellers with too much information too quickly. It has been found that the timing of introduction of different modules is important to avoid overloading the Medicine Sellers.

## **6. USING INFORMATION TO IMPROVE THE ROLE OF INFORMAL PRIVATE PROVIDERS**

It is clear that interventions improving Medicine Sellers' practices and leading to better quality of and access to malaria treatment will need to be pragmatic and tailored to the varying circumstances that exist in each context. The meeting highlighted that program managers and policy makers often lack the information they need to assess the importance of different provider and caregiver practices and to link these to intervention planning. Large amounts of data on caregivers' actions and Medicine Sellers' practices for childhood illness have been gathered in Africa, but much of this information has not been analyzed and/or is not comparable across studies. In order to maximize the usefulness of information gathered, common core indicators should be used to monitor, evaluate, and document Medicine Seller interventions. Gaps in knowledge on the interventions also need to be addressed through operations research within the programs that are already going to larger scale, during the expansion of long-term franchise systems, and any future Medicine Seller interventions.

### **6.1. Information for Planning and Management**

Existing documents provide good descriptions of sources of information, steps, and strategies that managers should consider in order to build a better understanding of the patterns of private care in their countries and the opportunities for engagement that might exist. The most successful interventions identified in the review included detailed situation analyses and reviews of national data prior to implementation. Sources of information include: household surveys, RBM country situation analyses, Demographic and Health Surveys, World Bank Living Standard Measurement surveys, Medicine Seller association membership, pharmaceutical manufacturers distribution records, national and local pharmaceutical licensing authorities, NGO records, and publication databases. In some circumstances where services provided by Medicine Sellers are less visible to health officials, rapid assessments and inventories at the local level may be required.

Internet access has improved in Africa. Linkages between information and intervention planning will be strengthened when fast, readily accessible and novice friendly websites provide original reports, journal articles, inventories of experiences, and copies of materials that have been used. Lists of potential funding agents and intervention projects they have supported will provide useful entry points. Managers will then not have to relearn expensive lessons.

### **6.2. Indicators of Process, Outcome, and Impact**

The review authors noted that comparison of interventions was compromised by the lack of consistency in indicators of both intervention processes and outcomes. While the same indicators will not be relevant to all interventions, the meeting concluded guidelines will be required to encourage planners to adopt and collect a common, minimum set of indicators so that comparisons will be possible as interventions are scaled up. Robust monitoring and evaluation plans should include process indicators for: training objectives (numbers and types of Medicine Sellers trained, numbers of training courses, training and BCC materials tested, quality of training); partner participation, information dissemination, and mass media involvement; distribution systems (quantities and availability of BCC materials, use of training materials at outlets, volumes of commodities); and costs.

It was acknowledged that measuring impact in terms of improved child survival would not be possible, but common outcome indicators should seek to capture information that will reflect likely impact. They should measure evidence for short-term and sustained change in behavior and knowledge of both Medicine Sellers and clients through tools such as mystery shopper visits, exit interviews, and drug sales records. Coverage of the interventions should be measured as availability and appropriate use of job aids, manuals,

and recommended drugs at outlets and in communities. Indicators that capture improvements in equity, although more difficult to measure, are also required.

### **6.3. Applied Research**

There is sufficient evidence to promote public sector investment in Medicine Sellers, but variance in reported results, limited cost effectiveness data for different delivery mechanisms, and the lack of evidence of improvements in equity warrant further implementation research. However, while continued examination of other models that promote early and effective management of fever is encouraged, research must not be allowed to stifle the task of increasing the availability of appropriate drugs in the home.

Successful experiences have generally combined a training component for Medicine Sellers with community mobilization or awareness campaigns. They have not attempted to determine the cost effectiveness nor the value additions of the different components. Little is known in terms of sustained behavior changes or shifts in user practices in relation to the cadre of providers that was trained, or whether combining training for different cadres increases or decreases impact. Tools are therefore required to assess the impact of communication strategies to improve antimalarial drug use, and measure the relative importance of the changes in behavior that can be achieved through different delivery mechanisms in different cadres of providers against the levels of usage that are expected.

Models for the introduction of ACTs and RDTs in Africa will differ and further complicate the market for antimalarial drugs. It will be necessary to understand how different models might affect small retailers' willingness and ability to engage with the public sector. Unanswered yet pressing questions in relation to ACTs include: the effect of restricting ACTs to the formal sector, how targeting of ACTs for children alone might be implemented in countries with dynamic retail sectors, and what impact might be achieved.

## 7. CONCLUSIONS AND RECOMMENDATIONS

The overarching conclusion is that, based on current evidence, interventions to improve Medicine Sellers' practices do offer immediate and practical opportunities for improving management of malaria in children in Africa. The evidence base from Africa comprises 15 separate pilot projects that fall into two general approaches: a rapid, malaria-focused short training approach and a longer-term, resource intensive franchise approach. All interventions reviewed came from Anglophone countries, and of these most have been undertaken recently—13 in the past five years. The information reported for these interventions for both process and outcome varies greatly in content and quality, making it impossible to draw general conclusions about the relative value of the overall interventions or of the common components across interventions.

These constraints made it difficult to achieve the meeting objectives with a high degree of confidence and detail. Instead, the meeting results are presented as recommendations that came from plenary sessions and from the three Consultative Meeting work groups. The three groups addressed: 1) gaps in knowledge/experience with Medicine Sellers that should be priorities for RBM partners supporting applied or operations research; 2) identification of available sources of information that can be used to develop a situation analysis on the role of Medicine Sellers in home management of malaria; and 3) identification of process and outcome indicators that should be included to provide information that would be useful for project managers and ultimately for comparisons with other interventions.

Two key recommendations came from the meeting:

- In those countries where a large part of the population obtains malaria treatment from “Medicine Sellers,” the Ministries of Health and RBM partners should engage the private sector as soon as possible to undertake and/or strengthen implementation of programs improving access to effective anti-malarial treatment.
- Program managers should compare approaches across the spectrum—from relatively rapid, malaria-focused training to longer term, resource intensive franchising—to determine the most suitable approach in light of their program objectives and particular situation in their country.

The Consultative Meeting identified three areas of particular focus for working groups. Key recommendations from those working groups are below.

### ***Addressing Gaps in Knowledge/Experience***

Gaps in knowledge/experience of interventions with Medicine Sellers should be addressed by:

- Determining cost effectiveness and impact on equity of different HMM delivery mechanisms: public (with extension through Community Health Workers); public/private (different cadres of Medicine Sellers)
- Determining relative effectiveness (including cost effectiveness) of the training component and of the community awareness/mobilization component of multi-strategy interventions, which will require better economic data and possible comparisons of predominantly single-strategy with multi-strategy interventions
- Evaluating effectiveness and costs of strategies for sustained behavior change among Medicine Sellers
- Developing quantitative and qualitative tools to assess the impact of communication strategies to improve anti-malarial drug use

- Collecting evidence of the impact of strategies for regulation and distribution of ACTs as they are increasingly made first line drugs, and of the effects on Medicine Sellers' practices of having ACTs restricted to the public sector and/or distributed free

### **Information for Situation Analysis**

National and sub-national managers, NGOs, donors, and others should build on previous guidelines<sup>2,3,4</sup> and take advantage of existing information to develop a better understanding of the role of different Medicine Sellers in home management of malaria:

- Suggested sources include: RBM country situation analyses, Demographic and Health Surveys and other household surveys, the World Bank Living Standard Measurement surveys, Medicine Sellers Association membership, pharmaceutical manufacturers distribution records, national and local pharmaceutical licensing authorities, NGO records, etc.
- Where services provided by Medicine Sellers are hidden, rapid assessments and inventories at the local level will be required.
- Fast, intuitive and up-to-date websites providing original reports, journal articles, inventories of experiences, and copies of useful materials are required.
- Lists of potential funding agents and intervention projects that they have supported will provide useful entry points.

### **Process and Outcome Indicators**

Intervention planners are encouraged to adopt and collect a common and minimal set of process and outcome indicators that will provide both ongoing feedback to project managers and ultimately a relative measure of success compared with other interventions. It is recommended that the following indicators be included. While all indicators listed below are important, an asterisk (\*) indicates those that are considered essential for all interventions.

- Indicators of training implementation
  - \* IEC and training materials field tested
  - \* Number training course (percentage of expected total over time)
  - \* Number Medicine Sellers trained (percentage of expected total over time)
- Indicators of effect of training
  - Measure knowledge change for Medicine Sellers (questionnaire; monitor over time)
  - Measure practice change for Medicine Sellers (simulated visits with mystery clients and/or exit interviews monitored over time)
- Indicators of partner participation
  - Planning meetings held
  - Reports providing evidence of partner inputs to decisions
- Indicators of availability and use of program materials by Medicine Sellers
  - \* IEC/BCC materials present (percentage of shop with materials present; monitor over time)

<sup>2</sup> Smith E, Brugha R, and Zwi A. 2001. *Working with Private Sector providers for Better Health Care. An Introductory Guide*. London: Options and LSHTM.

<sup>3</sup> Harding A, Preker AS. Eds. 2003. *Private Participation in Health Services*. Washington, DC: The World Bank.

<sup>4</sup> Waters H, Hatt L, Axelsson H. June 2002. *Working with the private sector for child health. Health, Nutrition and Population discussion paper*. Washington, DC: Prepared for the SARA Project and the Inter-Agency Working Group on Private Participation and Child Health.

- \* IEC/BCC materials being used (percentage shops with evidence of use; monitor over time)
- Indicators of information dissemination
  - Mass media campaign (number of message diffusions over time)
  - Handouts, other material for caregivers (number of handouts distributed)
  - Survey to determine if and where caregivers received messages
- Indicator of availability of appropriate medicine
  - \* Number (percentage) of shops in program with appropriate medicine (monitor over time)
- Indicators of geographical and equity coverage
  - Survey to determine if expected geographical area and poorest quintile are reached by program

## ANNEX 1. MEETING AGENDA

### Day 1: Wednesday, May 26, 2004

8.30 – 9.30	Opening Ceremony	James Banda
8.30 – 8.45	Introduction of Chair for Morning Session	
8.45 – 9.00	Chairman's Comments	George Amofah
9.00 – 9.30	Objectives of the Meeting Process for Meeting Logistics	Sylvia Meek/ George Greer
9.30 – 10.00	Overview of "Intervention to Improve the Role of Informal Private Providers in Malaria Case Management for Children in Africa" - What's in a name: define the group we are working with - Methodology - Major findings	Bill Brieger/ Alasdair Unwin
10.00 – 10.30	Discussion	
10.30 – 11.00	Tea	
11.00 – 11.30	Home Management of Malaria – Update and Discussion	Wilson Were
11.30 – 12.30	Case Studies:	
11.30 – 11.45	• Training - Kenya, Kilifi Kenya – KEMRI	Vicki Marsh
11.45 – 12.00	Discussion	
12.00 – 12.15	• Training - Nigeria, Abia Nigeria - BASICS Nigeria – SFH	Leila Madueke Michael Alagbile
12.15 – 12.30	Discussion	
12.30 – 1.30	Lunch	
	Chair for Afternoon	Kojo Yeboah- Antwi
1.30 – 3.00	Case Studies	
1.30 – 1.45	• Franchising – Kenya and Ghana Kenya - SHEF/CFW Ghana – SEAM	Liza Kimbo Kwesi Eghan
1.45 – 2.00	Discussion	
2.00 – 2.15	• Negotiation/Persuasion – Uganda Uganda – MOH and SEAM Project	Jesca Sabiiti/ Youssef Tawfik
2.15 – 2.30	Discussion	
2.30 – 2.45	• Vendor to vendor – Kenya, Bungoma Quality Assurance Project	Steve Harvey
2.45 – 3.15	General Discussion	
3.15 – 3.30	Tea	
3.30 – 3.45	Group Work Assignments	George Greer/ Sylvia Meek

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3.45 – 5.00	Group Work Session	
5.30 – 6.00	Report back to plenary	
		Rapporteur Day 1: Gladys Tetteh
7.00	Official Dinner	

## Day 2: Thursday, May 27 2004

8.30 – 8.45	Recap Day 1	Rapporteur
8.45 – 9.15	Working Group report out	
9.15 – 10.15	Informal Private Providers Panel: <ul style="list-style-type: none"> <li>National Chemical Sellers Assn – Ghana</li> <li>PMV Association – Nigeria</li> </ul>	Djan Mantey Chief M.O. Nwogwugwu
10.15 – 10.45	Tea	
10.45 – 11.15	Issues around the introduction of ACTs	Sylvia Meek
11.15 – 11.45	IPP Panel (cont.; adding questions regarding ACTs)	
11.45 – 12.15	Consumer Perspective	Irene Agyepong
12.30 – 1.30	Lunch	
1.30 – 2.30	Panel: Govt. Perspective Presentations	
1.30 – 1.45	<ul style="list-style-type: none"> <li>Inspector Pharmacy Council of Ghana</li> </ul>	Robert Kojo Puni
1.45 – 2.00	<ul style="list-style-type: none"> <li>Abia State Pharmacist Nigeria</li> </ul>	M.C. Uzuegbu
2.00 – 2.15	<ul style="list-style-type: none"> <li>Kenya</li> </ul>	Lisa Kimbo
2.15 – 2.30	<ul style="list-style-type: none"> <li>IMCI Focal Point Uganda</li> </ul>	Jesca Sabiiti
2.30 – 3.15	Panel Discussion	
3.15 – 3.30	Tea	
3.30 – 4.30	Group work	
4.30 – 5.30	Review/Finalize recommendations	

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## **ANNEX 3. EXECUTIVE SUMMARY OF MEDICINE SELLER REVIEW DOCUMENT**

[NOTE: Full report will be available at [www.rbm.who.int/workinggroups](http://www.rbm.who.int/workinggroups) under Malaria Case Management.]

### **Interventions to Improve the Role of Informal Private Providers in Malaria Case Management for Children in Africa**

*Prepared for The Sub-group for Communication and Training, The Malaria Case Management Working Group, Roll Back Malaria. Presented at a Consultative Meeting on Interventions to Improve the Role of Medicine Sellers in Case Management of Malaria (Fever) in Children Under 5, Accra, Ghana, 26-27 May 2004. Prepared by: a team from BASICS II and the Malaria Consortium (William Brieger, Alasdair Unwin, George Greer and Sylvia Meek).*

#### **Executive Summary**

This document reviews 15 interventions to improve child health and malaria-related activities of Medicine Sellers or Patent Medicine Vendors (PMVs) in Africa. Medicine Sellers are a major source of health care for many communities in sub-Saharan Africa (SSA). Reports in the literature on the use of Medicine Sellers in SSA during recent child illnesses range from 15–82% with a median around 50%. These statistics in themselves do not justify the use of Medicine Sellers, but indicate the importance of ensuring that Medicine Sellers have the capacity to provide safe and appropriate medicines in correct amounts in the communities they serve. This review addresses those capacity building questions.

The review is part of the work of the Roll Back Malaria (RBM) Subgroup for Communication and Training within the Malaria Case Management Working Group (MCMWG). The Private Provider Task Force of this Subgroup was charged with the goal of providing guidance and recommendations to the RBM partners via the Working Group on promising and appropriate strategies for engaging the informal private providers to improve management of malaria in children.

The review has the following objectives: 1) guiding a consultative meeting on the issue of how well interventions to improve the role of Medicine Sellers have worked, where and under what circumstances they worked and, of those interventions, which have potential for going to scale, and 2) identifying important gaps in the present knowledge and experience with Medicine Sellers and identifying research topics which have the potential to achieve the greatest impact.

The study of Medicine Sellers broadly included three elements: 1) the consumers' perspective, i.e. health-seeking behavior, 2) the providers' performance, and 3) intervention studies to enhance the quality of both. Numerous studies that have addressed health-seeking behavior from non-formal sources and a smaller number of studies that have documented the provider's performance are briefly summarized. What was missing was a systematic review of interventions that were undertaken to address the problems documented in the first two types of study. This review attempts to address this gap by focusing on documented interventions geared primarily for the Medicine Sellers themselves.

Since the review's objective is to provide lessons from existing interventions that can inform health and malaria program managers in Africa, it must address the following key questions about those interventions:

- What are the nature, scope and components of available interventions?
- What evidence is available from monitoring and evaluation to determine appropriateness and effectiveness of the interventions?
- What elements of the interventions are unique to the local cultural, political, and economic climate, and which can be generalized to other communities and countries?

- Is there evidence that the interventions have been sustained and how was this achieved?
- Are the interventions affordable as implemented and, therefore, can communities and countries afford to scale them up for wider implementation?

Three elements comprised the inclusion criteria for the interventions covered in the review. The first addressed the definition of the Medicine Sellers. The second concerned the geographical scope (Africa). The third was the health condition on which the intervention was focused (malaria), although other child health issues were considered.

The challenge was to find examples of studies and projects that actually intervened with Medicine Sellers to enhance or improve on their roles in community health care generally and in the control of malaria in African children specifically. Internet searches formed the first level of inquiry and PubMed/Medline was the first port of call. It soon became evident that most work was done very recently and had not yet been formally published. Thus, key terms were used in general search engines, and “grey” literature libraries were searched. In addition to extracting available information from these searches, the team obtained contact information about each project and made direct inquiries to fill in gaps in project descriptions and information. Follow-up contact was made with colleagues in various health and development agencies that work in Africa. This search process spanned two months.

Fifteen projects met inclusion criteria for this review. They varied in scope and were based in Kenya, Nigeria, Uganda, Ghana, Tanzania, and Zambia. It is notable that none were found outside of Anglophone Africa. These projects ranged in size from involving less than ten Medicine Sellers to over 1,000. There were three broad types of projects; all projects had donor support, and all served as potential demonstration efforts. Five were research trials that tested training interventions to change Medicine Seller behavior. Three involved systematic activities to create a management support network through a franchising process. Seven were donor-sponsored community health program interventions either as short-term projects or as a foundation for scaling up into larger scale public health programs. An annotated bibliography with all project documents is found in Annex 1.

From this process, two major conceptual dimensions emerged as organizing principles. The first was the nature of intervention, and the second was the evaluation design. The former would have implications for which projects might be replicable and expandable in scale. The second would enable judgments about what worked under what circumstances. The key variable concerning the nature of the intervention was the centrality of Medicine Sellers to the process. Medicine Sellers could be the central or only focus of the project, they could be one of the major components of a broader community health intervention, or they could be an adjunct to the main intervention.

A second variable of the nature of the intervention was the range of components, with four major components emerging from our review: 1) Training/Capacity Building, 2) Creating an Enabling Environment, 3) Demand Generation, and 4) Quality Assurance. All projects had an element of training and capacity building, 11 included some aspect of quality assurance, ten addressed demand generation, and six addressed the enabling environment.

All interventions had the purpose of improving home-based care in order to reduce the subsequent morbidity and mortality associated with poorly managed illness episodes. The monitoring and evaluation procedures reflected varying objectives of the different interventions. Research trial interventions had the most rigorous standards of reporting and evaluation. These few scientific or quasi-scientific interventions provided the best evidence base for effectiveness and cost effectiveness. Those concerned primarily with program service delivery tended to concentrate on monitoring the process and outputs in order to develop the intervention, but some attempted to evaluate impact at the level of changes in shopkeeper behavior.

All interventions were preceded by a thorough situation analysis and collection of baseline data using methods such as key informant interviews, community or household surveys, focus group discussions, shop surveys, and mystery shopper or simulated visit questionnaires. The level of reporting from the interventions in general and the baseline data collection activities in particular varied considerably. Thus, direct comparison of specific indicators and interventions is not possible. Evaluations have been completed in 11 of the interventions and are planned for the remaining four. All of the interventions have used both quantitative

and qualitative methods for evaluation. Intervention trials have sought to define outcome indicators more clearly and have developed tools such as shop survey checklists, pre- and post-training knowledge tests, simulated visit questionnaires, shopper role plays, and community survey questionnaires.

Interventions to change Medicine Sellers appear to focus at two levels: behavior change and role change. Behavior change interventions focus on improved sales practices such as selling an effective antimalarial drug or not selling antibiotics. These interventions can provide short-term and relatively rapid responses to a focused problem—such as ensuring that children get the correct antimalarial drug promptly—and may be most helpful in achieving the Abuja goals in the short term. Role change interventions train Medicine Sellers to be active health care providers, as evidenced in the various franchising studies. The choice of level depends on public policy needs. If the policy goal is to ensure that Medicine Sellers complement the formal health sector, behavior change interventions may be most appropriate. On the other hand, if there is desire to increase access to quality health care to under-served populations, role change interventions may be more appropriate. In the latter case, enabling legislation may be needed in order to legitimize an expanded role for the Medicine Seller.

There is insufficient evidence to conclude that any one approach to working with drug retailers is superior to any other. Similarly, it is not possible to quantify any additional benefits of adding community-based activities such as demand creation or the distribution of behavior change communication (BCC) materials to an intervention to train shopkeepers.

It is clear, however, that training alone can improve drug retailer knowledge about malaria, but the impact that this knowledge has on practice is uncertain. Where training, monitoring, supervision, and refresher training are provided, changes in practice can be observed and even maintained: the proportion of retailers who stock approved drugs, ask about the age and condition of the child, dispense age appropriate dosages, and advise caregivers about referral can be increased. Yet, despite the impressive changes possible, there are limits to what can be achieved with vendor and community education alone. After these interventions, large numbers of children with fever still will not get adequate early treatment because, even in areas where Medicine Sellers are numerous, 40–50% of fever cases do not seek treatment from Medicine Sellers, and, of those that do, a large percentage do not receive appropriate care. Part of the reason for this persistence of inadequate treatment is that drugs are often of poor quality. So, we should not undervalue those interventions that have sought to increase the availability of Good Manufacturing Practice (GMP) drugs through managed supply chains.

For Medicine Seller interventions to be taken to regional, provincial, or national scale, financial costs will need to be minimized. In the reported interventions, cost reduction has generally been achieved by minimizing the expectations for *per diems* and remuneration and by using existing local government health officials as facilitators and supervisors. The real opportunity costs are thus offset for the government by potential reductions in treatment costs at health facilities and for the vendors by anticipated increases in profits. The involvement of local government health management teams is also crucial if large-scale funding is to be obtained.

The review has shown that engaging with Medicine Sellers, providing training, and generating demand for recommended antimalarial drugs offers both short- and long-term opportunities to improve child survival. The evidence to support best practices is incomplete, but there are lessons that policy makers must be made aware of, if progress towards Millennium Development Goal (MDG) and the Abuja targets is to be made. The lessons should also be taken into account when planning the best way to introduce artemisinin-based combination therapies (ACT) into national formularies, given the significant role of Medicine Sellers in access to current antimalarials.

Medicine Sellers offer a service to patients that is widely used but generally of poor quality. Well-planned and targeted interventions to train drug vendors can increase the chances that, when drugs are bought from a shop, a patient will receive the correct dose of a recommended antimalarial drug. Therefore, when considering national plans to improve the home management of malaria, it would be imprudent to ignore any commonly used cadre of drug retailers.

Client knowledge is a strong determinant of the outcome when drugs are bought from a retailer, so concurrent community information and education programs should increase the chances of children receiving

appropriate treatment for malaria after Medicine Seller interventions. The role of Medicine Sellers in community education must not be overlooked, as they have been found to be a major source of information.

Three key partners need to be involved in these interventions: the consumer/community, the Medicine Sellers, and the government planning and regulatory agencies. These key partners can be supported by donor agencies and non-governmental organizations (NGOs). Specific lessons for these partners are outlined in the report. What is most important to realize is that the different projects reviewed herein represent different levels of commitment and resources in both the short and long term, and range from short behavior change courses on malaria case management to long-term role and system changes in the form of developing a franchise movement. Obviously, lessons from these 15 studies need to be adapted to the resources and policy goals in the countries and communities concerned.