

Rapid Qualitative Assessment of the Malaria Control Environment in Kenya

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Established in 1997, **CORE Group** is a membership association of international non-governmental organizations (NGOs) whose mission is to improve the health and well-being of children and women in developing countries through collaborative NGO action and learning. Collectively, CORE Group members work in more than 180 countries. Since 2001, CORE Group, Inc. is a 501[c] 3 charitable organization based in Washington, DC. For more information, see www.coregroup.org.

CORE Group has a subcontract with **Johns Hopkins Bloomberg School of Public Health Center for Communication Programs (JHU CCP)** for the **VOICES for a Malaria-Free Future** project. The VOICES project aims to educate policymakers about effective programs and strategies for malaria control by highlighting successful anti-malaria efforts and evidence-based results, while at the same time breaking down policy barriers that hamper effective prevention and control in Kenya, Mali, Ghana and Mozambique. Under the subcontract, CORE Group provides supervisory support for the Kenya and Mali programs. For more information, see www.malariafreefuture.org.

For the VOICES projects in Kenya, CORE Group works with the Kenya NGO's Alliance Against Malaria (KeNAAM) to develop a coordinated advocacy strategy, build capacity of malaria advocates and implement targeted communications and mobilization efforts. Specifically, KeNAAM works to increase community access to ACTs, the malaria budget in the Ministry of Health and CSO access to Global Fund funds. They also have the objective to develop a system to ensure better quality data on malaria mortality and morbidity. For more information, see <http://www.kenam.or.ke>.

The qualitative interviews and research that support this report were conducted by Mary Anne Fitzgerald, a consultant for CORE Group in fall 2008. Participants included representatives from: the National Malaria Control Program (NMCP), donor organizations; national, regional and district level health staff; community level; international NGOs; local NGOs; news media; pharmacists (distributors and vendors); net distributors and vendors of nets and ACTs in Kenya. Report edits compiled by Shannon Downey, Malaria Program Manager, CORE Group. The questionnaire used for the interviews was adapted from a JHU CCP template.

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LIST OF ACRONYMS

AL	Artemether-Lumefantrine
ACT	Artemisinin-based combination therapies
ANC	antenatal care
BCC	behavior change communication
CCM	Country Coordinating Mechanism
CHW	community health worker
DFID	Department for International Development
DOMC	Division of Malaria Control
DMO	District Medical Officer
GTZ	Gesellschaft für Technische Zusammenarbeit
HMIS	health management information systems
IPT	intermittent preventive treatment
IRS	indoor residual spraying
ITN	insecticide-treated net
JHU CCP	Johns Hopkins Bloomberg School of Public Health Center for Communication
KDHS	Kenya Demographic Health Survey
KeNAAM	Kenya NGO's Alliance Against Malaria
KEMRI	Kenya Medical Research Institute
KEMSA	Kenya Medical Supplies Agency
LLIN	long-lasting insecticide-treated net
M&E	monitoring and evaluation
MCH	maternal and child health
MICC	Malaria Inter-agency Coordinating Committee
MIS	Malaria Indicator Survey
MoH	Ministry of Health
MSH	Management Sciences for Health
NGO	non-governmental organization
NMS	National Malaria System
PLWHA	Person Living with HIV/AIDS
PMI	President's Malaria Initiative
PMO	Provincial Medical Officer
PSI	Population Services International
RDT	rapid diagnostic test
SP	Sulfadoxine-Pyrimethanine
TWG	technical working group
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
U1	children under one year of age
U5	children under five years of age
WHO	World Health Organization

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PURPOSE

To conduct a qualitative assessment of the malaria control environment in Kenya through key in-depth interviews, analyze the information, and produce a final report. Specifically, a consultant was asked to conduct approximately 10 in-depth interviews with key informants in each of three sites: Nairobi, Western Kenya and Coastal Region using the attached Interview Guide template. The analysis and report were to summarize changes in the past 1 – 2 years that have occurred in the malaria control environment and their impact on Kenya's ability to provide households with access to malaria prevention and treatment options; and to identify continuing bottlenecks that require further advocacy.

EXECUTIVE SUMMARY

The overall goal of Kenya's National Malaria Strategy (NMS) 2001-2010 is to reduce the level of malaria infection and consequent death by 30% by 2006 and to sustain this level of control through 2010. This is being pursued through a variety of interventions.¹

- The distribution of Artemether-Lumefantrine (AL) to all public health facilities and training of health workers in its use so that 80% of health facilities have reliable and adequate supplies of essential drugs which are used knowledgeably to achieve successful case management
- Malaria prevention and vector control through the distribution of insecticide-treated nets (ITNs), retreatment campaigns and education in net usage so that 60% of at risk populations sleep under ITNs
- The management of malaria and anemia in pregnancy so that 60% of pregnant women at risk of malaria receive at least two doses of intermittent preventive therapy (IPT) for pregnant women during the 2nd and 3rd trimester and sleep under an ITN
- Epidemic preparedness and response so that 60% of confirmed epidemics are contained through indoor residual spraying (IRS) and community awareness as well as the above interventions
- IRS vector control now being implemented as a policy in endemic areas
- Information, education and communication on the above interventions that reaches 80% of households nationwide at least twice a year
- Monitoring and evaluation to include operational research so that progress against NMS targets can be monitored in communities and health facilities in sentinel districts

Kenya has made considerable but uneven strides towards achieving the set targets for these interventions. For instance free net distribution of ITNs and subsequently long-lasting insecticide treated nets (LLINS) has been strong and consistent, but behavior change to accommodate correct usage has not kept pace with the inroads made by national mass distribution to

¹ www.health.go.ke, DOMC web page

pregnant women and children under five years of age (U5s) and retreatment campaigns. The preliminary findings of Kenya's first Malaria Indicator Survey (MIS) conducted mid- 2007 show that only 31.6% of pregnant women sleep under an ITN, but in Nyanza Province, one of the major endemic regions, 39.8% sleep under an ITN.

A 2006 mass net distribution impacted positively on malaria indicators. There was a 44% reduction in U5s mortality in four sentinel malaria endemic districts according to data analysis released in September 2007 by the World Health Organization (WHO). Malaria out-patient attendance was reduced by at least 13%.² Hospital admissions for malaria in the sentinel districts were down by 50%.

Distribution of LLINs to children under one of age (U1s) through maternal and child health (MCH) clinics started mid-2008. A policy for two nets per household is being developed and is likely to be implemented in 2009. Development of International Development (DFID) will assist in the two-net program subject to Department of Malaria Control (DOMC) mapping out the methodology.³

Kenya switched to ALs as the first-line drug for malaria treatment with the release of The Global Fund funds in February 2006 under Round 4. The uptake went according to plan in the first year. However, subsequent serious disruptions in the supply chain meant the opportunity to adequately serve endemic areas was missed. Consumption faltered during 2007 and 2008 due to procurement disruption, inadequate reporting systems throughout the supply chain and a push system that fails to take into account actual need. This is being addressed. Meanwhile, even though monotherapies were withdrawn from health facilities, they continue to be used for want of another alternative.

While the supply of SP for IPT is adequate, uptake has undershot expectations because of historically low re-attendance at antenatal care (ANC) clinics with 70% (80% according to DOMC) of pregnant women attending only once. According to preliminary findings of the 2007 MIS, only 12.3% of pregnant women received two doses of IPT.

In 2007 an IRS prevention campaign sprayed 1.17 million structures, mainly rural homes, in 16 districts, achieving 78% of the target. Spraying in 2008 fell far below the desired target because of a funding gap.⁴

Development partners underwrite all of the implementation of interventions. New systems to meet the funders' rigorous reporting demands, specifically the Global Fund's time- and performance-bound requirements, are still in their infancy and fall short of expectations. Governance for national procurement of drugs and transparent communications between the various levels of the supply chain continue to be problematic and are a considerable barrier to establishing a consistent and reliable supply of commodities, particularly ALs, to facilities.

² Reversing the Trends:the Impact of Malaria Control Interventions in Kenya, Dr. James W. Nyikal, Director of Medical Services, 16 August 2007

³ Mark Rotich, Senior Programme Officer, DFID Kenya and Somalia

⁴ James Sang, IRS Officer, DOMC

Monitoring is conducted at six⁵ sentinel sites in endemic regions. Generally inadequate diagnosis and reporting in facilities means that malaria trends and advances are not represented. An MIS was conducted mid-2007. At the time of preparing this report the data analysis had not yet been finalized and released by DOMC. The previous nationwide survey of malaria indicators was conducted in a household survey in 2003.⁶

A more effective monitoring and evaluation (M&E) system is being developed. Meanwhile, raw data are not collated or disaggregated sufficiently well to be able to accurately assess the impact of interventions that could and should provide information to satisfy donors for ongoing and future programs. Neither is the data easily available to inform good program management.

In 2006 there were an estimated 11.3 million malaria cases of which an estimated 27,000 resulted in death. Of these, just under 8 million cases were actually reported as probable or confirmed. Malaria mortality is not known as malaria is not reported as a cause of death in any vital statistics register.

National guidelines dictate that all U5s that present with a fever are treated for malaria without testing. Parasitological confirmation is recommended for all ages above five years. The majority of diagnoses for all ages is presumptive. Only 20% of facilities have laboratories⁷. Rapid Diagnostic Tests (RDTs) are not easily available as procurement and distribution awaits the formulation of policy. It is likely that RDTs will not be widely available to laboratory technicians until 2010. This obscures real trends in malaria incidence and thus the impact of AL delivery, mass ITN delivery and behavior change.⁸

⁵ John Moro, Information Officer, DOMC

⁶ Kenya Demographic Health Survey 2003

⁷ D. Zurovac, clinical researcher, Malaria Public Health and Epidemiology Working Group, KEMRI/Wellcome Trust Research Programme, Center for International Health and Development, Boston University School of Public Health

⁸ Dr. Dorothy Memusi, program officer, DOMC

INTRODUCTION

Malaria affects about 70% of the Kenyan population.⁹ It is a primary cause of child mortality in Kenya and kills more Kenyans than AIDS does. It burdens health facilities with 30% of outpatient attendance and 19% of admissions. It is estimated to cause 20% of child deaths.¹⁰

Three out of four Kenyans live in a malaria endemic area of either a low (40%) or high (36%) transmission rate. Four out of five Kenyans live in rural areas and tend to seek treatment at health facilities that are historically under-equipped and under-staffed.

Between 2001 and 2006, Kenya's reported malaria cases, primarily caused by *P. falciparum*, increased annually for 4 out of those 5 years. By 2006 Kenya had an estimated 11.3 million malaria cases. Reporting for malaria deaths was not available for that year, but estimates suggest that 27,000 died. ITN coverage was 65% of the population at risk. 7.1 million ITNs were distributed of which 6.3 million were LLINs distributed free at antenatal clinics. 5 million AL courses were dispensed, less than half the demand. Funding for malaria control was \$46 million, primarily from the Global Fund and DFID.¹¹

Against this background, the author was requested to do a rapid qualitative assessment of Kenya's malaria control environment on behalf of the CORE Group. CORE Group is a membership association of international non-governmental organizations (NGOs), which strengthens local capacity on a global scale to measurably improve the health and wellbeing of children and women in developing countries through collaborative NGO action and learning.

Since June 2006, CORE Group has been supervising the VOICES for a Malaria-Free Future (VOICES) project at the country-level as part of a subcontract from Johns Hopkins Bloomberg School of Public Health Center for Communication Programs (JHU CCP). VOICES conducts advocacy in developing countries and also targets donors. The aim is to dismantle national policy barriers while reinforcing the message to donors that malaria-specific funding must be increased and sustained.

In Kenya, VOICES works with the Kenya NGO's Alliance Against Malaria (KeNAAM) to advocate for a malaria-free Kenya. As of late 2007, KeNAAM has focused its activities in three areas:

- Advocacy to increase community access to ACTs and the MOH malaria budget
- Lobbying to increase access of civil society to Global Fund funding
- Advocacy to develop a system to ensure better quality data on malaria morbidity and mortality

⁹Dr. Ayub Many, former ITN program officer, DOMC, report on LLIN distribution in 2006

¹⁰Ministry of Health, Oct. 2006

¹¹WHO World Malaria Report 2008

METHODOLOGY

The author was asked by CORE Group to conduct a rapid qualitative assessment of the malaria control environment in Kenya through in-depth interviews and to analyze the information and collate it into a final report.

The interviews were recorded on a digital tape recorder using, as a template, an in-depth interview guide provided by CORE Group. In some instances, interviewees requested that the interview not be recorded. The author acceded to these wishes. She was asked to conduct about 10 interviews in three regions. Ultimately, she conducted about 40 interviews in order to obtain all the information as per the template. The interviews were conducted in Nairobi, Busia and its environs in Western Province and Mombasa and Kwale in Coast Province.

The topics for discussion were as follows:

- National-level supply
- Allocation of national supplies
- Distribution of supplies
- Household access to supplies
- The malaria control environment

The documentation reviewed for this rapid qualitative assessment included reports from the Global Fund, DOMC, WHO, Population Services International (PSI) and KeNAAM and the preliminary findings of the 2007 Malaria Indicator Survey.

RESULTS

National-Level Commodity Supply

Development partners underwrite more than 99% of Kenya's \$74.33 million dollar malaria program. Primary development partners for funding the malaria sector are the Global Fund, DFID and the President's Malaria Initiative (PMI).

Funding for FY 2008/09¹²

Global Fund	US\$ 34 million
DFID	US\$ 20 million
PMI	US\$ 20 million
Kenya government	US\$ 0.33 million

DFID intends to gradually introduce performance-related expenditure at the Kenya government's discretion in its next five-year program starting April 2009. Malaria will continue to be a core activity.¹³ As of 2008 PMI is beginning to support gaps in the National Malaria Business Plan not funded by other partners.¹⁴ In contrast, government recurrent expenditure increases for malaria have been modest. There is no budget line for malaria, but malaria-specific expenditure can be judged by the annual allocation to the DOMC.

The supply of ALs, ITNs and, to a lesser extent, Sulfadoxine-Pyrimethanines (SPs) have been scaled up with momentous acceleration since Kenya became a beneficiary of the Global Fund. Several respondents confided to the interviewer once the recorder had been switched off that the sudden and massive influx of funds has not allowed the government time to put in place sound program management systems.¹⁵ They also said that some of the current policies would benefit from a strategic refocus.

Kenya provides antimalarials free of charge at all government health facilities. In 2004 it changed its policy for first-line treatment from disease-resistant monotherapies to AL. The switch was not implemented until 2006 to coincide with the start of the Global Fund Round 4 Malaria Grant which has a component to provide ACTs to all health facilities.

Kenya received a \$27.7 million malaria grant in Round 2 which runs from October 2003 to September 2008. The central commodity for this grant was ITNs distributed through a voucher subsidy system. Only \$4.64 million of this grant was spent due to erratic and unresolved reporting. A second malaria grant in Round 4 started in February 2006. Phase One is for \$81.7 million of which \$76.1 million has been disbursed. The major commodity components for Round 4 are ALs and LLINs. Procurement-related activities account for more than 70% of the program. Kenya's malaria proposal for Round 7 was rejected because it was unable to adequately account for past expenditure.¹⁶

¹² Presentation by Dr. James Gesami, Assistant Minister for Public Health and Sanitation, at the launch of KeNaam, 19 August, 2008

¹³ Mark Rotich, Senior Programme Officer, DFID Kenya and Somalia

¹⁴ Global Fund Grant Scorecard, Round 4 Malaria Grant, Phase One

¹⁵ Dr. Kahindi et al

¹⁶ Global Fund Kenya website

The national-level commodity supply system is certainly a casualty of the onset of large-scale funding. The supply of ACTs has been especially affected. DOMC is designing a new drug management system to synchronize with the Global Fund process. Unlike other diseases, malaria is not fed into Kenya's Medical Supplies Agency's (KEMSA) logistics management unit. The new system will feed monthly AL consumption data to the logistics staff so that they can assess stock levels anywhere in the country. The system provides for 6-9 months of AL stock at the central level and 3-6 months of AL stock at the facility level.¹⁷

Meanwhile, the actual situation for 2008 was that facilities in endemic areas experienced stockouts on a regular basis. Submitted projections for national demand for 2008 were 13 million doses a year with a buffer stock of 3 million. Procurement severely undershot this quantification. The malaria control system has been operating under the shadow of AL shortages since 2007.¹⁸

Poor reporting at the facility level is a major barrier to the Global Fund's prompt release of procurement funds for ALs as they are contingent to timely reporting on consumption. Districts have not been using standardized reporting tools and formats and reports are often late. Neither does data always correspond with individual health facility returns. The issuing of a tender for the procurement of the national ACT supply for 2008 was delayed because ACTs distributed in 2007 could not be accounted for. This was rectified in February 2008.¹⁹

A new reporting system is in the process of being put into place. This will serve to improve the system but does not tackle the human resource constraint of overworked facility staff that remain ignorant of the direct link between accurate returns and the supply of ALs to their facility.

Budget assumptions, particularly for ACT quantification, and a revised procurement management systems plan that contains improved forecasting and quantification of ALs are contingent to the release of funds for Phase Two of the Global Fund Round 4 Malaria Grant.²⁰

Another inhibiting factor is the procurement system. In 2006 and 2007 ACTs were procured through KEMSA using single sourcing through WHO as stipulated by Global Fund terms. The supplier was Novartis which provided weight-banded doses in color-coded packaging. The first procurement was for 20 million doses²¹, and the system worked well during Kenya's financial year 2006/7. Few if any stockouts were experienced. However, during 2007/8 systemic problems surfaced resulting in a deficit in the national supply. This situation deteriorated further in 2008.

The Global Fund Country Coordinating Mechanism (CCM) received Global Fund approval to go to open tender as three more drug manufacturers had become eligible through meeting the minimum qualification of having a WHO Good Manufacture Practice site. The decision was considered sound as it allowed for competitive pricing and delivery and payment terms.

¹⁷ Amin, MSH

¹⁸ Athuman Chiguzo, malaria project coordinator, CFWshops

¹⁹ Athuman Chiguzo, malaria project coordinator, CFWshops

²⁰ Global Fund Grant Scorecard, Round 4 Malaria Grant, Phase One

²¹ Robert Nyamweya, Procurement Manager, Crown Agents

The tendering process coincided with Kenya's general and presidential elections in December 2007 and the ensuing post-election violence. While KEMSA officials posited this as the reason why procurement fell behind schedule, it does not fully explain the long delay experienced in the tendering process. The tender was closed in February, but it was not approved until the following June when it was awarded to the Indian company, Ajanta Pharma Ltd., a C1 category company. The customary period for tender evaluation and award is two months.

The customary time lapse between ordering and delivery is 3 months. In this instance, the first delivery of the AL procurement was expected this October, five months after the tender was awarded. Procurement from a C1 category manufacturer must be approved by the Global Fund which theoretically can slow down the tender process. However, KEMSA officials conceded that the delay was largely internal²².

To cover the interim shortfall, KEMSA procured 4 million doses of AL from Novartis which was sufficient to meet national demand for three months. Ajanta is expected to deliver 5.8 million doses in October, another 3 million in December and a further 3 million in March 2009. This is sufficient to cover the national requirement of 1 million doses a month but does not provide for a buffer stock as described in policy above²³.

Governance in procurement has also been a major barrier to a reliable and constant supply of commodities, specifically ALs. It should be noted that KEMSA is currently under investigation for a \$22.8 million debt to suppliers and senior managers have been put on probation. The board investigating KEMSA on behalf of a parliamentary watchdog committee on health has been tasked with drawing up recommendations for reform. Vacancies for technical assistance were advertised this September, but whether or not reforms will be implemented remains to be seen.

The procurement of ALs is currently under the stewardship of a Procurement Consortium consisting of representatives from KEMSA, GTZ, Crown Agents and John Snow Inc. Phase Two of the Global Fund Round 4 Malaria Grant is contingent to this consortium's ongoing involvement in the procurement of ALs²⁴.

The method used to quantify national demand is decided by the drug management subcommittee of the Drug Policy Technical Working Group (TWG). Its members are representatives from DOMC, KEMSA, KEMSA's logistical management unit, Management Sciences for Health (MSH) and WHO. In theory projections should be based on consumption. In practice they are based on morbidity figures as consumption data is rightly considered to be unreliable due to the inconsistent quality of reporting from health facilities²⁵. Kenya's 4,000 health facilities have been reporting at a rate of 54%. According to consumption data, only 17% of ALs distributed was reported to have been consumed in 2007. It is very likely, however, that actual results are higher than have been reported²⁶.

²² Robert Nyamweya, Procurement Manager, Crown Agents

²³ Athuman Chiguzo, malaria project coordinator, CFWshops

²⁴ Global Fund Grant Scorecard, Round 4 Malaria Grant, Phase One

²⁵ Amin, MSH

²⁶ Global Fund Grant Scorecard, Round 4 Malaria Grant, Phase One

Quality control of ALs is monitored on a random basis by the Pharmacy and Poisons Board. DOMC proposes to strengthen the quality control system by procuring a mobile laboratory for each province and using it to test drugs at the district hospitals. The proposal for a pilot project has been submitted to PMI²⁷.

In contrast to national drug supply, the national supply performance for ITNs has been good. Kenya was one of only six African countries in 2006 to have a sufficient supply of ITNs to cover at least half of the population at risk.²⁸ In the wake of a mass distribution of 3.4 million LLINs in 2006 to U5s and pregnant mothers, ITN ownership by U5s reached 51.3%²⁹. In 2003 it was 4.6%³⁰.

Coverage for pregnant women has been ongoing, while LLINs for U1s have been distributed through MCH clinics since mid-2008. This will make considerable advances in achieving coverage of two ITNs per household. Coverage for U1s should be 60% by the end of 2008. By June 2009 there should be 100% coverage.

In 2008 Kenya needed 3 million nets to cover vulnerable groups. The Global Fund is underwriting the procurement of 1 million nets a year through 2010. DFID funded another 1.7 million nets to close the gap.

Procurement for the Global Fund funded mass distribution was done through the KEMSA Procurement Consortium, including UNICEF. It took longer than expected and the exercise was periodically postponed. DFID is also a major funder of nets which are procured through the Crown Agents. Quantification for nets is decided by the ITN Technical Working Group that comes under the Malaria Inter-agency Coordinating Committee (MICC). Quality – such as bursting strength - is monitored by the Kenya Bureau of Standards.

Tax on imported nets was lifted in the wake of the Abuja Conference. Imported netting attracts taxes of up to 60% so there is no local manufacturer.

Allocation of Commodities—National Level to Districts and Communities

There are two distinctly different systems for the distribution of antimalarials and ITNs from the national level to district hospitals and health facilities. While both systems are supply driven, the outcomes are starkly different.

Antimalarials

The allocation of drugs, particularly ACTs, falls short of expectations. Interviews in the field substantiate the interviewer's conclusion that the supply of ALs bears little relation to demand and has resulted in persistent stockouts. While this can be partially blamed on procurement system problems, it is interesting to note that a demand-driven drug allocation system in Coast Province has been less affected by procurement delays than other endemic malaria regions.

²⁷ Dr. Andrew Nyandigisi, program officer, DOMC

²⁸ WHO Malaria Report 2008

²⁹ Draft Implementation Framework (for ITN working group), Jayne Webster, May 2007 (ref. CDC 2006)

³⁰ Kenya Demographic Health Survey 2003

KEMSA delivers drugs and other medical supplies directly to health facilities in pre-packed health kits. ALs are delivered simultaneously but are not part of the health kits. Deliveries to district hospitals are made every two months based on demand while facilities below this level receive health kits every quarter. Theoretically, if a facility runs out of stock, it contacts the district pharmacist or the regional KEMSA liaison officer. If there are stocks available at the regional KEMSA depot, a delivery is implemented. In reality, this does not seem to happen. Health workers in Western Province stated KEMSA representatives were unable to clarify the national supply situation or when the next delivery would take place.

Facility reporting to DOMC is channeled through the District Medical Records Office. Facility reports are submitted monthly and collated for submission to DOMC every six months. The collation is done by the district pharmacist or district medical records officer. Facilities use an AL Register and summary tools for reporting. This system started in August 2008, a move prompted by Global Fund requirements.

The training of District Health Management Teams, pharmacists and health workers on drug management needs much more focus to ensure the system works efficiently. The training of 20,000 first-line health workers in AL case management is only halfway because of reporting inadequacies which held up Global Fund money. The Global Fund and DFID have underwritten training for 9,000. Another 4,500 were trained Oct-Nov 2008³¹.

According to a staff member of Kenya Medical Research Institute (KEMRI)/Wellcome Trust³², the training curriculum covers too broad a spectrum and is ambiguous. It was said to be a cascade training which tends to distort messages in the process of reaching the grassroots.

Furthermore, there is no focal point for reporting. Again, pharmacists thought health management information systems (HMIS) would be considerably strengthened if there was a focal point within DOMC with whom hospitals could communicate. (This holds true for all aspects of malaria control³³.) For instance, the Busia District Hospital received a letter from DOMC at the end of August 2008 giving the pharmacist one week to compile the district's six-month report. Until that time, he was unaware he was responsible for reporting. Nevertheless, he managed to submit the report on time, illustrating that capacity exists but coordination is lacking³⁴.

There is a marked increment in the number of malaria cases in endemic regions from January to February which stabilizes in April. A sharper increment in cases occurs in June, peaking in July and declining in September. Another rise in cases occurs in December. These seasonal variations are taken into account during the quantification of deliveries to facilities. Theoretically the quantification of AL delivery is reached based on collated reports from district pharmacists and processed by DOMC and KEMSA. However, responses to the question about AL delivery quantities were markedly varying. It would appear that the quantity of each delivery is random.

³¹ Dr. Dorothy Memusi, program officer, DOMC

³² D. Zurovac, KEMRI/Wellcome Trust

³³ Mohamed Shembe, hospital administrator, Kwale Hospital

³⁴ Samuel Mwaniki, pharmacist, Busia District Hospital

The formula for quantification is a two-month buffer stock plus what has been calculated for the average monthly consumption. However, reporting appears to be done on assumption rather than consumption. When the pharmacist at Busia District Hospital was interviewed, it was clear that orders were dictated by presumed availability at the national level. For instance, the first order was for 32,650 doses. 19,715 doses were consumed. Despite this, the hospital's second six-month order was inflated to 151,650 doses. The pharmacist explained that he was overstocking as a precautionary measure because reporting from the rural facilities was unreliable and he is unable to supervise reporting in the field.

In 2006, 98% of facilities were stocked with ACTs, according to DOMC, and 92% of U5s received the correct dose of first line treatment. But according to a survey of health facilities in four sentinel districts conducted in May and June 2007 that was published in the *East African Medical Journal* in May 2008, facilities were experiencing stockouts 27-39% of the time³⁵.

Abundant anecdotal evidence emerged during the course of the assessment to substantiate that by 2008 health facilities, including hospitals, were experiencing regular stockouts³⁶. At the time of the interviewer's visit to the Busia District Hospital, there had been a stockout of adult doses for three weeks. Health workers were dispensing pediatric doses in the relevant quantities instead. There had been no ALs in stock at Siport District Hospital for the past three weeks. The DMO reported that the ALs received in August had lasted two weeks. The last adequate delivery of ALs was in May 2007. Even this was marred as a good proportion of the doses had 6-12 months left on their expiry date. These were distributed to satellite clinics to ensure they did not exceed their expiry date.

When stockouts occur, facilities resort to the 'make-do' approach of:

- Borrowing from another facility or the district hospital
- Prescribing whichever antimalarial was available in its store
- Writing out a prescription for an antimalarial other than an ACT for the patient to purchase in a commercial pharmacy
- Using patient registration fees to purchase an antimalarial other than an ACT in a commercial pharmacy

An exception to the national distribution system occurs in Kwale District on the south coast. It is an endemic area with a moderate to high transmission rate. Kwale operates on the decentralized supply system that has been introduced in the Coast Province. This has proved superior to the existing national supply system. According to the Provincial Medical Officer (PMO) for the Coast Province, this system is under consideration for introduction on a national basis.

The pilot project, using drugs funded by Danida, procured drugs in bulk to include a buffer stock of six months. The pilot project ended in 2007, but the system remains in place. Kwale now relies on the government for its drug supply which, in turn, depends on procurement running to schedule. During the FY 2006/07 supplies were reliable and consistent with a fill rate of 80-85%. According to the PMO, some facilities are now experiencing stockouts because the fill rate has

³⁵ Health Facility and Health Worker Readiness to Deliver New National Treatment Policy for Malaria in Kenya, *East African Medical Journal*, Vol. 85, No. 5, May 2008

³⁶ Dr. Willis Akhwale, head, DOMC, health workers in Kwale, Busia, Siport, Nyambuka

dropped to 40-50%. However, the Kwale District Hospital pharmacist stated that facilities in the district never experienced total stockouts, only occasional stockouts of one or some of the weight-band doses.

Under this demand system facilities make orders based on consumption and peak malaria periods. Orders for ACTs are based on the AL Dispenser's Book, averaging monthly consumption over the previous 12-month period plus a two-month buffer stock less ALs carried over. The district pharmacist collects these orders and sends them to the KEMSA representative in Mombasa³⁷. Because facilities have taken ownership of their supplies, they are pro-active in ascertaining from KEMSA the delivery date and quantity of supplies. There is no overstocking³⁸.

It should be pointed out that prior to the 2007 December elections, many new districts were created which in essence meant that one large district became several smaller districts. This has had the positive effect in that district officials' workload has been eased. For instance, the Kwale district pharmacist used to oversee reporting for 42 facilities. Now he is responsible for 18 facilities. On the downside, this means that health workers who have been elevated to district-level responsibility overnight must be trained on their new scope of work.

The disposal of antimalarials has yet to be implemented. At Kwale District Hospital, the pharmacist reported that supplies of amodiaquine had been quarantined in the stores since 2006 pending disposal instructions from DOMC. The interviewer believes that this situation exists countrywide.

DOMC has produced seven malaria case management charts which have been distributed throughout the endemic regions. Only Kwale District Hospital had an adequate display of all seven charts though this rapid assessment cannot accurately reflect the situation. According to the *East African Medical Journal* survey, only 19% of facilities had all seven wall charts on display³⁹.

ITNS

The distribution of first ITNs and now LLINs has been good with distribution reaching 85% of target. Net distribution operates on the push system. Districts submit projections but do not necessarily know the quantity that will be delivered.

PSI distributes nets under contract to the Ministry of Health (MOH) in a parallel distribution system to the KEMSA distribution system for medical supplies. Nets are transported in bulk from Nairobi to regional warehouses. From there distribution is segmented into three markets: urban and peri-urban; rural villages; and MCH and ANC clinics. Urban nets and long-lasting impregnation kits retail through shops at \$4.50. Rural nets are subsidized and sold at about \$0.40 to community groups to retail at about \$0.70 as an income-generating activity⁴⁰. Nets destined for health facilities have been free since mid-2008.

³⁷ Gift Mlagwa, pharmacist, Kwale District Hospital

³⁸ Dr. Anderson Kahindi

³⁹ Health Facility and Health Worker Readiness to Deliver New National Treatment Policy for Malaria in Kenya, *East African Medical Journal*, Vol. 85, No. 5, May 2008

⁴⁰ Jeremiah Makore, net distributor Western Region, PSI

The phase-out of subsidized \$0.40 ITNs at health facilities has caused some confusion. Health facilities were directed to run down their stock before distributing the free nets. Some facilities have found it hard to sell off their subsidized nets⁴¹.

The Global Fund funded the procurement of 3.4 million LLINs that targeted pregnant women and U5s through ANC and MCH clinics. Procurement problems meant that the exercise was periodically postponed. It was further disrupted because sporadic measles outbreaks meant that the campaign could not wait until all the nets were in the country.

During the first phase in July 2006, 1.7 million LLINs were distributed in an integrated measles, polio, vitamin A and nets campaign in Nyanza and Western Provinces and part of Coast Province, three endemic regions. There was 102% coverage of U5s. The second phase, carried out in September 2006, was a stand-alone campaign in the remaining endemic areas. Coverage was 82.9%. The lesson learned from this exercise was that LLINs needed little social mobilization for uptake. However follow-up surveys and continuous health education is needed to ensure proper net usage.⁴²

In 2007 there was a top-up distribution of ITNs for U5s. According to PSI, 900,000 nets were procured, an expenditure which KEMSA can account for. However, when PSI went to the district warehouses to implement distribution, they recovered only 350,000 nets⁴³.

Data suggests that many of the children who received ITNs through the mass campaigns in 2006 lived in households that already owned an ITN. (The delivery of 3.4 million nets increased household ownership by only 13%). It is likely that past and continued delivery of ITNs to U5s through health facilities will increase the duplication of delivery. To avoid this, ITNs are being targeted at U1s through MCH clinics while pregnant women continue to receive nets at the ANC clinics. Household ownership of at least two ITNs will be achieved through these two channels.⁴⁴

A total of 16.8 million ITNs are needed to cover vulnerable populations (including PLWHAs) between 2007 and 2010. With resource commitments of 5 million ITNs, there is a gap of 11.8 million nets⁴⁵.

A health worker interviewed in Western Province pointed out that LLIN distribution only reaches static facilities. There is no distribution to hard-to-reach populations during mobile outreach immunization programs⁴⁶.

General operational constraints

Perusal of correspondence between DOMC in Nairobi and the Kwale District Hospital indicates that communication from national to district level leaves a lot to be desired. For instance, Kwale was notified of a Global Fund disbursement for a distribution of LLINs and retreatment tabs on 23 April 2008. The check was received in Kwale on 14 May 2008. But the authority to incur

⁴¹ Anthony Kanja, PSI

⁴² Dr. Ayub Many, former ITN program officer, DOMC, report on LLIN distribution in 2006

⁴³ Manya J. Andrews, MCH Program Coordinator, PSI and Anthony Kanja, PSI

⁴⁴ Draft Implementation Framework (for ITN working group), Jayne Webster, May 2007

⁴⁵ Draft Implementation Framework (for ITN working group), Jayne Webster, May 2007

⁴⁶ Dr. Namdala, District Medical Officer, Siport District

expenditure was not received until 9 June 2008. Kwale was obliged to spend this money before the end of the government financial year on 30 June 2008. Luckily, Kwale was able to achieve this in the three weeks remaining before the close of books⁴⁷.

Another noted operational constraint was the inflexibility of Global Fund grant terms in expenditure. Funds are allotted to line items according to a national template. One line item may be short 5% in funding, but this cannot be transferred from another line item, which can mean that the project does not finish and the district fails its reporting audit. In another example, specifications may not be suitable for a certain region. An example is the provision of corrugated-iron roofing for a structure. This material is too hot for the Coast Province but there is no provision for using an alternative, cooler, roofing material⁴⁸.

⁴⁷ Mohamed Shembe, hospital administrator, Kwale Hospital

⁴⁸ Mohamed Shembe, hospital administrator, Kwale Hospital

Nambuku Dispensary, Funyula Division, Western Province

Nambuku Dispensary is a level 6 health facility not far from the shores of Lake Victoria. It is situated in a remote rural area populated by subsistence farmers who are on the margins of national development. This is in an endemic malaria region with a high transmission rate. The dispensary embodies the problems encountered in the malaria control system at the grassroots.

The dispensary is staffed by two nurses, one of whom was interviewed. She has not been trained in the case management of malaria. She and her colleague are supposed to receive supervisory visits from the District Health Management Team in Busia on a monthly basis. However, there had been no visits for the past two months. Of the seven case management wall charts issued by DOMC, three were on display.

Community health workers (CHW) were trained in malaria awareness and the introduction of ACTs in 2006. The community is aware of the importance of reporting malaria-type fevers early. Patients ask for AL as the drug of choice over quinine or amodiaquine because it has no side effects and the treatment period is short.

However, the last quarterly delivery of AL was sufficient for one month, leaving a two-month gap before the next delivery. She did not know the quantity or arrival date of the next batch of AL. Supplies of SP for IPT, on the other hand, were sufficient to meet demand.

On past occasions of AL stockouts the dispensary has 'borrowed' (on a no-return basis) from neighboring facilities or the district hospital in Busia. Because the current stockout is widespread, the nurses use the patient registration fees to buy quinine and amodiaquine from local pharmacies.

Talking about the community awareness campaign to use AL in the context of her current stockout dilemma, the nurse said:

We feel funny. We told that person not to do something and then we turn round and tell them to do it.

The nurse and her co-worker share the responsibility of filling out the AL register which is sent monthly by *matatu*⁴⁹ to Siport District Hospital. On examination, several entries in the stock column appeared confusing. When asked for clarification, she said she was unable to give it.

⁴⁹ The ubiquitous communal mini-van taxi

Household Access to Commodities

ITNS

There are 53 districts in Kenya in which the population is considered at risk of malaria. The 2005 World Health Assembly set a target of 80% ITN coverage of populations at risk. The national ITN coverage objective, aligned with the Abuja targets, is for all those at risk of malaria to be protected with an ITN, with initial preference given to pregnant women and U5s. Kenya still falls short of these indicators for success.

Universal ownership of an ITN in malaria endemic areas increased dramatically from 21.6% in 2005 to 63.3% in 2007 with little difference in indicators between rural and urban areas. By contrast, data for untreated bed-net ownership demonstrates a significant bias towards ownership in urban areas (78.7% to 83.8%) compared to rural areas (51.4% to 78.4%). This indicates that coverage during mass distributions of ITNs has been effective. By 2007 approximately 36% of households owned at least two treated nets even though the two-nets per household policy had not been introduced.

According to a PSI survey conducted in 2007, 42.7% of U5s in malaria endemic regions slept under an ITN the night before the survey. This shows that there is still much work to be done to ensure consistent ITN use among U5s. The same survey showed that usage by pregnant women also fell short of the target. 44.6% of households with a pregnant women reported that she had slept under an ITN the previous night. But the large discrepancy between urban usage (70.2%) and rural usage (34.6%) underscores the need for greater behavior change communication (BCC) campaigns⁵⁰.

This data demonstrates the onset of a net culture among the lower social and economic strata of rural endemic areas. There was no significant difference in the knowledge of malaria among rural populations. It was consistently high at between 84.2% and 89.5% for modes of transmission and methods of prevention. Knowledge of transmission and prevention were highly significant determinants of net ownership. It was higher among net owners (90.9% and 88.7%) than those who did not own a net (84.3% and 76.8%). The data from the study provides evidence that in malaria endemic areas, knowledge of malaria transmission and prevention are more persuasive factors for net ownership than the perceived severity of malaria as an illness.⁵¹

Despite the mass distribution of nets, routine surveillance data does not yet show unequivocally the expected impact through a considerable reduction in mortality and morbidity. Even so, data from Kwale District indicates that net usage has had a positive impact on the incidence of malaria. 13,236 U5s received out-patient treatment for malaria between July 2005 and June 2006. During the same period for 2007 to 2008 that figure had nearly halved. The difference for out-patients over five years was less dramatic, falling from 16,773 to 10,036. Malaria cases among pregnant women fell from 117 to 40 over the same period even though IPT uptake remained fairly constant⁵².

⁵⁰ Kenya (2007): Malaria TraC Study, Evaluating Bed Net Ownership and Use among Pregnant Women and Children Aged Below 5 Years in Kenya: 3rd Round

⁵¹ Kenya (2007): Malaria TraC Study, Evaluating Bed Net Ownership and Use among Pregnant Women and Children Aged Below 5 Years in Kenya: 3rd Round

⁵² Kwale District Hospital records

Interviewees consistently emphasized that BCC is of paramount importance in achieving net uptake. Data on behavior change was not available at the time of the interviews, but DOMC estimates that behavior change has occurred in about 50% of the population⁵³.

Campaigns before and after mass distributions were acknowledged as key to proper net usage and the experience of Kwale District's mass distribution of LLINs in 2006 bears this out. Distribution was good with 94.9% coverage. However, funds for awareness raising were disbursed behind schedule. Mass distribution campaign dates are set nationally. This meant that community mobilization and training for dippers could not be executed properly. As a result, even though the ITNs were received at household level, usage was poor because the nets were associated with ghosts and became known as 'the talking nets'. Many of the ITNs were thrown into the sea or used as fishing nets. In other instances where BCC has not been sufficiently implemented, ITNs have been used variously as mesh for chicken coops, curtains and chair covers. Usage is difficult to verify. In Kenya's male dominant culture, ITNs are often used by the husband rather than the wife or child. They are also kept in a drawer and kept for visitors. ITNs were changed from white to blue and green because white is associated with death (as in Kwale). DOMC is aware that BCC needs more focus⁵⁴.

Programs for community health workers to sell subsidized ITNs at \$0.70 within the community have not got into its stride. They are scheduled to be rolled out the last quarter of 2008. CHWs work as volunteers. A daily stipend would remove the temptation to sell the nets and encourage performance. A CHW interviewed in Western Province said that she traveled to outlying villages on the back of a bicycle taxi carrying a sack of 20 nets on her lap. She paid for the transport out of her own pocket⁵⁵.

The Kenya Demographic Health Study (KDHS) 2003 indicated that the retreatment rate for nets was only 2%. On 8 October 2008, DOMC launched a national stand-alone one-week treatment campaign in the wake of a policy change to distribute treatment tablets free of charge. There are 13 million nets in the community of which 30% are not LLINs. DOMC intends to convert all nets to LLINs by issuing K-O 1,2,3 tabs which last three years or 15 washes⁵⁶.

The treatment campaign was preceded by two weeks of social mobilization to reassure people it is alright to display their 'bed linen' in public. This was done through:

1. mass media announcements on national and vernacular radio 3xday before the news
2. talk shows to disseminate policy messages
3. posters and IEC leaflets for school children to take home to parents
4. announcements by public health officials at churches, funerals and other public gatherings

⁵³ John Moro, information officer, DOMC

⁵⁴ Dr. Anderson Kahindi, PMO, Coast Province; Rebecca Muendo, Kwale District Public Health Officer; Mr. Dima, Kwale District Public Health Nurse

⁵⁵ Regina Oguba, community health worker, Funyula Division

⁵⁶ John Moro, information officer, DOMC

Nets are not easily available in the more remote rural areas. Where they are available, they tend to be white, made in China and sold with a treatment kit inclusive. They retail at about \$4.50. According to shop owners, very few are sold.

Antimalarials

According to preliminary findings of the MIS only 38.8% of people interviewed had knowledge of ACTs. Awareness of pregnant women being at higher risk was very low at less than 25%.

The same MIS found that in endemic areas 27.7% of U5s with a fever were treated with an antimalarial of which 17.3% were treated within 24 hours. Among U5s treated, 68.7% were treated at a health facility.

Anecdotal evidence suggests patients are seeking treatment more promptly in the wake of public awareness campaigns. To support this, Busia District records show that between July 2007 and June 2008 the number of U5s treated for malaria exceeded projections by 50%. At the same time, records for the same period show that the number of children over five years of age treated for malaria (who theoretically were treated after parasitological confirmation) was one third of projections. This would indicate that prevention measures, specifically sleeping under an ITN, were having an impact.

However, conflicting viewpoints emerged during the course of interviews. Some of the health workers in Busia, Sioport and Kwale districts said that patients did not seek treatment promptly for economic reasons. People can live five to eight kilometers from a health facility. The cost of the patient registration fee and transport to a facility combined with the interruption to the working day was a deterrent, they said. They also said that patients sought treatment if the fever persisted.

There is anecdotal evidence of people being treated with monotherapies both at health facilities and through commercial pharmacies⁵⁷.

The interviewer was told at the Busia District Hospital that when there are AL stockouts, amodiaquine and SP is used. The pharmacist also said that patients are sometimes prescribed amodiaquine because AL treatment for adults and children over five requires a positive blood slide. This entails two patient visits to the health worker. Amodiaquine requires one patient visit which lightens the workload.

A nurse at Sioport District Hospital stated that if a blood slide is negative but there are moderate signs of malaria, the patient is treated with an alternative antimalarial on the basis that if the health workers prescribed ALs to all out-patients who presented with malaria symptoms, they would quickly run out of stock. At the time of the interview, Sioport had been experiencing a stockout for three weeks. As quinine was also out of stock, patients bought quinine at a commercial pharmacy with prescriptions written by the health workers.

Amodiaquine was withdrawn as first-line treatment in public health facilities in 2006. Pharmacists interviewed in Sioport and Kwale districts did not know why they had not yet received a directive on the disposal of their quarantined amodiaquine stocks. According to the

⁵⁷ Health workers in Sioport, Nyambuka and Busia; shop owners in Funyula and Kwale

Director of public health services, amodiaquine has not been banned and so stocks can only be disposed of legally when they expire. In a phone discussion on the subject, he conceded that amodiaquine is sometimes used for treatment when there is a stockout of AL.

It is the intention of the MOH to deregulate ACTs to make them more widely available⁵⁸. Three pilot projects on alternative methods are being conducted from late 2006 through the end of 2009. According to DOMC, it is possible that ACTs might be deregulated mid-term based on results. The methods are:

1. A franchise system for clinics and nurses
2. Shopkeepers are trained in diagnosing uncomplicated malaria
3. CHWs do home visits, diagnose and prescribe

Pharmacy owners sell antimalarials across the counter without a prescription – except for ACTs – through presumptive diagnosis. They say that AL – retail price c. \$6.40 - is the customers' antimalarial of choice, but that it is well beyond the range of customers' budgets. Customers buy fansidar, quinine or metaquelfine. They shun amodiaquine because of its side effects⁵⁹.

Retail prices at pharmacies:

Dio-Cotexcyn (an ACT from China) - c. \$4.30

Amodiaquine – c. \$0.30

Fansidar – c. \$0.85

Quinine – c. \$0.07 per tab

Metaquelfine - c. \$1.15

Malaria Control Partnership Environment

Between 2005 and 2007 malaria messages were delivered through national television and radio, newspapers, posters, billboards, public health and community health workers, mobile cinemas, village theatre, market promotions and the World Malaria Day. Uptake and retreatment of ITNs increased dramatically after the introduction of World Malaria Day in 2004 and supports anecdotally, evidence that media coverage holds greater sway over behavior change.

In 2002, the former Minister for Health, Charity Ngilu, began to champion malaria, an example which has been followed by subsequent ministers and ministry officials. Partially thanks to Ms Ngilu, public perception of malaria has changed from a disease that kills to one that can be prevented, contained and treated.

KeNAAM has held media workshops on malaria which have gone a long way to raise the disease's public profile. Subsequently, informed articles on malaria have been appearing regularly in the press.

KeNAAM also uses the media as leverage to encourage government action on Global Fund issues and to articulate civil society positions to the government through the press. When

⁵⁸ Dr. Willis Akhwale, head, DOMC

⁵⁹ Shop owner, Funyula; commercial pharmacist, Kwale

national AL stocks were on the point of running out at the end of 2007, the KeNAAM board lobbied ministry officials and also allowed the issue to surface at a journalists' training session, which led to media coverage. As a result, a report on consumption was sent to Geneva and the Global Fund released funds for an emergency procurement from Novartis.

In another instance, on 5 September 2008 KeNAAM hosted editors at a breakfast forum on malaria issues. This included the Global Fund Round 2 Malaria Grant, which was scheduled to end that month even though only 16.75% of the funds had been spent⁶⁰. KeNAAM was calling for government preparation of the no-cost extension application to be speeded up. The result was headlines blaming the government for not accounting for donor money in a transparent manner. This issue raised tempers in the Ministry of Health and DOMC and was commented on specifically by the head of DOMC during his interview. Ministry of Health officials took exception to the fact that KeNAAM had not given the government notice of what it intended to do⁶¹. KeNAAM reports that the outcome is that the newly appointed permanent secretary for public health is seeking an explanation for unreported expenditure. The Round 2 grant has been closed, but KeNAAM hopes that by putting the matter into the public arena, officials will no longer be allowed to act with impunity⁶².

Generally, collaboration on malaria is adequate. Civil society is represented on the malaria TWGs that come under the MICC. There are quarterly meetings of the steering committee for the provincial health systems. Inter-ministerial communication and cooperation between health, finance, planning and the presidential office fall short of expectations.

This rapid qualitative assessment could not do justice to gathering opinions on VOICES and its activities. Some two thirds of interviews were conducted among ministry health workers in the rural districts. Expectedly, these people fall beyond the ambit of VOICES projects and did not know about either VOICES or KeNAAM. On the other hand, KeNAAM and, to a lesser extent, VOICES appeared to be known and respected in civil society circles through Nairobi.

⁶⁰ Website: Kenya and the Global Fund, GRANT: Malaria – Round 2

⁶¹ Dr. Willis Akhwale, head, DOMC

⁶² Gerald Walterfang, Chief Executive Officer, KeNAAM

CONCLUSION

This report has attempted to assess the strengths and weaknesses of Kenya's malaria control efforts. It has its limitations, because it aimed to provide a general overview versus an analysis of the actual control system, which would require comparable studies and need much more data analysis. Actually evaluating the impact of interventions for malaria prevention and control is challenging and expensive. Ideally, the data necessary should include biological parasitaemia measured at baseline and follow-up in the at-risk populations (U5s in endemic areas and all the population in epidemic zones or hybrid zones). This assesses changes in the population level of malaria infection but not the level of morbidity or mortality related to malaria. As an interim measure, malaria programs usually measure the process or outcome (not impact) indicators such as ITN use in at-risk populations, the IPT distributions and the IRS households at risk sprayed. Data for these indicators come from periodic surveys or specially designed household surveys and the measures serve as proxies for evaluating programs.

In addition, information gathered through interviews on practice was sometimes contrary to what is believed to be existing policy. Furthermore, interviewees also at times provided conflicting information on the same subject. Referencing the DOMC website did not resolve this as most information was for the time period 2003-2005. In the above instances, the author of this rapid qualitative assessment revisited other sources for verification and clarification. Where she was unable to do this to her satisfaction, she omitted the information.

In some respects Kenya's malaria control environment has demonstrated significant results since 2006. ITN penetration into communities, particularly among the most vulnerable sectors of the population, has been good. BCC has improved uptake and usage and the impact is beginning to be felt. IRS coverage for 2007 was good but fell far short of its target due to an absence of procurement funds for insecticide.

The provision of ACTs started out well, but seemed to have faltered in the second and third years leading to confusion among health workers and communities who had been trained and educated in ACT case management and acceptance. In some cases, tuckouts have prompted the re-emergence of monotherapies as first-line treatment. The provision of IPT, on the other hand, was constant and reliable. However, poor service at ANCs was noted as a barrier to uptake.

It is clear that while the first procurement and distribution of ACTs appears to have been successful, the follow-up has been weak due to a retarded procurement schedule, a weak reporting system and little-exercised channels of communication from the national level down to the facilities. In part, this is the end result of large funding flows landing on a weak health system, particularly with regard to procurement and HMIS. Even so, the health system does not necessarily require total reform. In some instances, policy is in place, but just needs to be adhered to. In other instances, the policy is still being formulated.

RECOMMENDATIONS

Advocacy:

Communication to be strengthened at all levels:

- At donor level – the strengths and weaknesses of financing mechanisms (one-offs, ongoing, commodity purchases)
- At government level – how best to work with civil society
- At district level – their voices should be heard
- At health facility and community level – their voices need championing
- At civil society level – how best to work with government

Other:

- That the Coast Province demand supply system be replicated nationally
- That an early warning system for drug stockouts is put in place
- That a system is put in place to ensure that the policy on buffer stocks can be followed
- That a Global Fund module is included in the malaria training curriculum
- That despite donor perception that parallel vertical reporting systems should be dismantled, advocate for either a cluster reporting system for malaria, AIDS and TB or for the position of district pharmaceutical facilitator for all diseases which would serve to strengthen the entire health system
- That funding should be increased for BCC through civil society
- That ANCs provide improved services as an incentive for greater IPT uptake
- That civil society and government work jointly on a country strategy for malaria
- That advocacy be directed towards the Global Fund to ease systemic restraints and misunderstandings
- That national support and lines of communication to the districts and communities is strengthened for supply, policy, reporting, guidelines and case management
- That reporting methods are strengthened to improve the flow of data to the central level
- That community involvement is strengthened through education and awareness on the causes of malaria and prevention measures such as home management of fevers, net usage and re-treatment and compliance to medication
- That the recommendations for reform put forward by the board investigating KEMSA on behalf of the parliamentary watchdog committee on health be implemented

For KeNAAM:

- That civil society and government work jointly on a country strategy for malaria
- Advocate for either a cluster reporting system for malaria, AIDS and TB or for the position of district pharmaceutical facilitator for all diseases which would serve to strengthen the entire health system
- That national support and lines of communication to the districts and communities is strengthened for supply, policy, reporting, guidelines and case management

ANNEX 1

VOICES for a Malaria-Free Future Qualitative Assessment of the Malaria Control Environment

In-depth interview guide

INTRODUCTION

Good afternoon and thank you for taking some time to talk with me. I am representing _____ [name of organization]. We are talking to various people involved with malaria control in [Name of Country] to understand issues associated with a household's access to and use of malaria prevention and treatment.

I would like to hear your thoughts and opinions about the malaria control system in [Name of Country] and its ability to provide households with access to malaria prevention and treatment options. I hope that you feel free to provide frank and honest answers. Everything that you tell me will be kept confidential. We are interviewing several individuals and we will only present aggregate findings and we will not identify who provided their views.

The national malaria control strategy is based on the use of several commodities, including: [Insert specific commodities included in national malaria control strategy, possibly including insecticide-treated bednets, pesticides for indoor residual spraying, ACTs for treatment, SP for IPTp, and Rapid Diagnostic Tests for malaria infection.] An individual's access to these commodities depends on four main issues:

- the extent that a country procures a sufficient number of these commodities to meet its needs,
- the allocation of these commodities based on the district and community-level need for these commodities,
- the distribution of the allocated commodities from central storehouses to districts and communities,
- and, finally, the ability of households to obtain the commodities that are available in their community.

I would like to hear your thoughts and opinions regarding each of these levels.

National-level supply

First, I would like your opinion about the national supply of these commodities. To what extent do current national supplies meet the national requirements for these items?

[Probe for all commodities included in the national strategy]

How does this compare to the situation in the country a couple of years ago - have national supplies for malaria prevention and treatment commodities changed? For what commodities has the national supply increased? Decreased?

Who monitors the quantity and quality of the national supply of these commodities? How do they monitor the quantity and quality of this supply? How well does this monitoring system work?

What do you think are the reasons for these changes in the national supply of these commodities?

Probe for very specific reasons supported by tangible examples. Suggested questions include:

What changes to government policy may have increased the supply of these commodities? **If unmentioned, probe further on tax/tariff policy; policies on procurements.**

Has the national government received more donor funding for malaria?

Is malaria given a higher priority in budget decisions?

Have any changes occurred in the process for clearing these commodities through customs?

How has the private sector contributed to an increase in national supplies?

For any reasons mentioned, probe: Why do you think these changes occurred?

In your opinion, what are some of the reasons why national supplies for some/all malaria prevention and treatment commodities still do not meet the national requirements?

Allocation of national supplies

Now I would like to talk about the process for allocating the available national supplies of these commodities to districts and communities throughout the country. Who decides how many supplies are needed by districts and communities?

Who decides how many commodities will be allocated to specific districts and communities?

PROBE: Does a single group decide or do multiple groups decide separately?

PROBE: What role do district and community officials play in deciding how many commodities they receive?

What are the criteria used to determine how many commodities will be allocated to specific districts or communities?

PROBE IF UNMENTIONED: To what extent are supplies allocated based on the relative malaria burden in districts and communities?

How do program planners at the central level monitor the need for commodities in the districts and communities?

PROBE IF UNMENTIONED: amount of supplies past their expiration date, stock-outs

How does the need for commodities in different areas of the country vary by season?

Follow-up question: How do program planners account for seasonal variation in needs when they are allocating commodities to districts and communities?

What sources of information do planners use to decide how to allocate these commodities to districts and communities?

In your opinion, how has the allocation of malaria prevention and treatment commodities changed over the past couple of years?

Probe for very specific changes supported by tangible examples. Suggested questions include:

Have the criteria used to allocate supplies changed?

Has the data used to allocate supplies changed?

Has the process used to make decisions related to the allocation of supplies changed?

For any changes mentioned, probe: Why do you think these changes occurred?

In your opinion, what are some of the reasons why malaria prevention and treatment commodities may still not be targeted to the districts and communities that most need them?

Distribution of supplies

Now, I would like to talk about how these supplies, once they are allocated, are distributed to districts and communities.

Can you describe the process by which supplies allocated at the national level are distributed to districts and communities?

Probe: Who pays for supplies to be delivered to districts/communities? Are supplies delivered to districts/communities or do districts/communities have to arrange for transport?

How is the quality of these commodities monitored once they are distributed to the districts and communities? How well does this monitoring system work?

How has this process for distributing supplies changed over the past couple of years?

Probe for very specific changes supported by tangible examples. Suggested questions include:

What policy changes have occurred that affect how well these commodities are distributed from the national level to districts and communities?

How has the private sector contributed to how these commodities are distributed?

For any changes mentioned, probe: Why do you think these changes occurred?

In your opinion, what are some of the reasons why districts and communities may still have a difficult time receiving their allocated supplies?

Household access to supplies

Finally, once malaria prevention and treatment commodities reach a community, access to these commodities depends on a household's ability to obtain these commodities. So, let us consider people's ability to obtain these commodities under the assumption that they are available in their community:

How easy is it for a household to obtain an ITN if they decide that they need one?
How easy is it for a household to get their child treated for malaria with an ACT once they decide to seek treatment?
How easy is it for a pregnant woman to get IPTp when she receives antenatal care?
[Also ask for any other commodities]

How have peoples' ability to obtain these commodities changed over the past couple of years?
For which commodities has it become easier? For which commodities has it become more difficult?

What do you think are the reasons for these changes in people's ability to obtain these commodities when they need them?

Probe for very specific reasons supported by tangible examples. Suggested questions include:

Have the cost of these items changed?
Have health providers become more effective distributing these commodities to those individuals that need them?

For any changes mentioned, probe: Why do you think these changes occurred?

In your opinion, what are some of the reasons why some households may still have difficulties obtaining these commodities even after they decide that they need them?

Malaria control environment

Now, I would like to ask your opinion about malaria control in general.

How has the visibility of malaria changed over the past few years?

Probe if unmentioned:

Has the media coverage of malaria changed? How?
Have government officials started speaking publicly about malaria? Who? What have they been saying publicly?
Have prominent members of society started speaking publicly about malaria? Who? What have they been saying?

How have perceptions of malaria in this country changed over the past few years?

How would you describe the level of collaboration that exists in the malaria control community here?

To what extent do national, regional, and district level officials collaborate?
To what extent do officials in the malaria control system collaborate with officials from other sectors of government?
To what extent do officials in the malaria control system collaborate with non-governmental organizations and civil society?

How has this level of collaboration changed over the past few years?

Probe for very specific examples.

Have you ever heard of a project called: “Voices for a Malaria-Free Future”?

How would you describe this project? What are its objectives? What activities have you heard about? What activities have you personally seen or heard?

Finally, I would like to ask you about some specific materials. **Describe the Voices materials that have been developed and used in the specific country.**

How often have you seen these materials/spots?

How often have you discussed these materials/spots with others?

How have these materials/spots contributed to any of the changes in the malaria control system that we have discussed?

Probe for very specific examples of how these materials/spots contributed to these changes.

Thank you very much for your time.