

Research Report

Interrelation of Malaria Control Interventions and
Community Health Systems Strengthening in Kenya



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The contents of this study are the responsibility of KeNAAM who conducted the assessment.

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ACRONYMS AND ABBREVIATIONS

ACT	Artemisinin Combination Therapy	NHSSP	National Health Sector Strategic Plan
ACSM	Advocacy Communication Social Mobilization	NGO	Non-Governmental Organization
AL	Artemisinin Lumefantrin	NMCP	National Malaria Control Programme
ANC	Ante Natal Care	PHO	Public Health Officer
Baraza	Public Meeting	PLWA	People Living With Aids
BCC	Behavior Change Communication	PMI	Presidential Malaria Initiative
BI	Bamako Initiative	PO	Project Officer
CBO	Community Based Organization	PSI	Population Services International
CFW	Child and Family Welfare	PWD	People With Disabilities
CHC	Community Health Committee	QSR	Qualitative Software Research
CHEW	Community Health Extension Worker	RDT	Rapid Diagnostic Test
CHW	Community Health Worker	RTI	Research Triangle International
CSO	Civil Society Organization	SBCC	Social and Behavior Change Communication
CSPro	Census and Survey Processing System	SHF	Sustainable Healthcare Foundation
CU	Community Unit	SP	Sulphadoxine Pyrethamine
DHMT	District Health Management Team	TOT	Training of Trainers
DoMC	Division of Malaria Control	UN	United Nations
EPI	Expanded Programme on Immunization	USAID	United States Agency for International Development
EU	European Union	WHO	World Health Organization
FANC	Focused Antenatal Care	WMD	World Malaria Day
FBO	Faith Based Organization		
FGD	Focus Group Discussion		
FO	Field Officers		
HF	Health Facility		
HFC	Health Facility Committee		
HH	House Holds		
HRI	Health Right International		
HSCC	Health Sector Strategic Committee		
HSR	Health Sector Reform		
HW	Health Worker		
IEC	Information, Education and Communication		
IMCI	Integrated Management of Childhood Illnesses		
IPTp	Intermittent Presumptive Treatment in Pregnancy		
ITN	Insecticide Treated Net		
JICC	Joint Interagency Coordinating Committee		
KEMSA	Kenya Medical Supplies Agency		
KeNAAM	Kenya NGO's Alliance Against Malaria		
KEPH	Kenya Essential Package for Health		
KHDS	Kenya Health Demographic Survey		
LLIN	Long Lasting Insecticidal Nets		
MCP	Malaria Community Program		
M&E	Monitoring and Evaluation		
MERLIN	Medical Emergency Relief International		
MIP	Malaria in Pregnancy		
MIS	Malaria Indicator Survey		
MOH	Ministry of Health		
MOMS	Ministry of Medical Services		
MOPHS	Ministry of Public Health and Sanitation		
MIS	Malaria Indicator Survey		

EXECUTIVE SUMMARY

Malaria is a global health problem, whereby Africa carries the heaviest malaria burden, since more than 90% of all malaria-related deaths occur in that region.

The disease is the leading cause of morbidity and mortality in Kenya. An estimated 170 million working days are lost to malaria each year (MOH 2001). Malaria is also estimated to cause 20% of all deaths in children under five (MOH 2006).

But malaria can be treated and prevented with proven measures such as prompt diagnosis and appropriate treatment; prevention of malaria in pregnancy; vector control through the use of LLINs and other control methods; and a swift response to emergencies and epidemics.

Malaria control interventions are mostly being implemented within the structures of the local health system with potential to promote the whole system. In contrary health system strengthening initiatives can benefit specific disease control interventions at the same time. In order to find out more on the mutual interrelation between malaria control interventions and strengthening of local health systems, this study was conducted in Kenya between August 2010 and January 2011 at four study sites (Embu East, Kisii Central, Pokot Central, Nyakach District) that randomly sampled a total of 1,416 households. Key-Informant Interviews were conducted with health personnel, NGO and FBO representatives and community opinion leaders to assess the respondents' views on key issues and to record key responses on implementation malaria control interventions and their interrelation with health system strengthening initiatives.



Fact findings from the study sites give evidence that:

- Access to prevention and treatment measures has been significantly improved in the last years. The net ownership ranges from 56% of households in Pokot Central to 90% in Nyakach District, though net utilization is relatively lower. Intermittent Presumptive Treatment for pregnant women ranged from 13% (Nyakach, Embu East) to 31% in Pokot Central and remains far below the target of 60% of all pregnant women. In 95% of all health facilities ACTs were available, whereas only 36% of all malaria cases were treated with ACTs within 24 hours from the onset of symptoms (target: 80%). Albeit the improvements access to all interventions remains below envisaged targets and more needs to be accomplished in order to reach the Millennium Development Goals and Roll Back Malaria Partnership targets.
- The quality of health services was often hampered by lack of supplies and health personnel, particularly at community level. This as well as the attitude of the health personnel towards patients significantly influenced the treatment-seeking behavior of patients.
- Major funders of malaria control interventions in the country have been the government through the Global Fund with main support from donors (Bilateral and multilateral), NGOs (both local and international), UN agencies, and private companies.
- NGOs in the study sites supported governmental facilities to increase coverage of malaria control interventions and other medical services. Therefore, NGOs essentially contributed to an augmented availability of health services including malaria control interventions, hence contributing to strengthen local health systems particularly at community level though skills and knowledge imparted to the health workers as well as the infrastructure provided in the form of equipment and construction of clinics.
- Increased availability of malaria control interventions automatically strengthens local health systems.
- The stronger the health system the better the quality and coverage of malaria control interventions which leads to less malaria cases and deaths.
- Strong community health systems are key for significant impact of malaria control interventions as well as reaching and sustaining universal coverage.

- Funding for malaria control and health system strengthening need to be increased and efforts need to be scaled up to reach the RBM universal coverage targets as well as the UN Millennium Development Goals.
- Access to malaria prevention and treatment should be made available for all people at risk from the disease in order to significantly reduce the malaria burden and strengthen local health systems particularly at community level.
- Governmental efforts to provide drugs, medical equipment, health education, adequate payment of health staff and to build infrastructure should be scaled up in order to improve the quality and coverage of health services, strengthen local health systems with particular regard to community health services and reach universal coverage of malaria control interventions. The efforts should be complemented by NGO activities.
- Malaria control and health system strengthening initiatives should go hand in hand and target the community level in particular.

1.1 MALARIA

Malaria is a preventable, treatable and curable disease. In 2009, according to the World Malaria Report (WHO, 2010) there were 225 million cases worldwide. Malaria accounted for 781,000 deaths, 91% of which occurred in the African region. Each day approximately 1,950 Africans die from malaria, 85% are children under five years of age. Malaria slows the pace of economic development in affected countries. The disease has been estimated to cost Africa more than US\$ 12 billion every year in direct economic losses, even though it could be controlled for a fraction of that sum.

1.2 MALARIA CONTROL STRATEGIES

Combating malaria in the long-run requires continued efforts to implement a comprehensive malaria control strategy. This strategy follows a four-pronged approach and includes, access to prompt diagnosis and appropriate treatment; prevention of malaria in pregnancy; vector control through the use of LLINs and other control methods; and a swift response to emergencies and epidemics.

1.3 HEALTH SYSTEM

The national health system which according to WHO consists of all the organizations, institutions, resources and people whose primary purpose is to improve health, plays an important role in the fight against malaria. A country's health system is central to the delivery of health services to the most needy communities, more so in regions where the burden of specific diseases ravages the most vulnerable groups. To function effectively, a health system must find a balance between primary (community services), secondary (specialized services) and tertiary (highly specialized services) health care. Without a reliable and accessible primary health care, the health system will not reach the whole population. At the same time, secondary and tertiary care, mostly in hospitals or specialized units, is necessary to save lives and support the primary health care system^[1].

1.4 HEALTH SYSTEM STRENGTHENING

Strengthening health systems means addressing key constraints related to health worker staffing, skills and knowledge, infrastructure, provision of health services, procurement and delivery of health commodities (such as equipment and medicines), logistics, health information systems, governance and effective financing. Nevertheless there is no single set of good-practices for strengthening health systems since they are highly context-specific.

1.5 STRENGTHENING COMMUNITY HEALTH SYSTEMS

Community organizations and networks have unique ability to interact with affected communities, react quickly to community needs and issues and engage with affected and vulnerable groups. They provide direct services to communities and advocate for improved programming and policy environments. This enables them to build a community's contribution to health, and to influence the development, reach, implementation and oversight of public systems and policies (CSS Framework, 2010).

Community systems strengthening initiatives have the aim of achieving improved outcomes for interventions to deal with major health challenges such as HIV, tuberculosis, malaria and many others. An improvement in health outcomes can be greatly enhanced through mobilization of key affected populations and community networks and an emphasis on strengthening community based and community led systems for: prevention, treatment, care and support; advocacy; and development of an enabling and responsive environment.

1 Health action (1991): Strengthening the district, 1st issue, June.

1.6 THE KENYAN HEALTH SYSTEM

A hierarchical structure, the Kenyan health system is administered from the top down by the Ministry of Health (MOH), an institution which remains split into two sister Ministries since the post-election turmoil of 2007: the Ministry of Medical Services, and the Ministry of Public Health and Sanitation.

Health facilities are spread regionally, with the most sophisticated services available in the major cities or only at the national level. At the peak of the service spectrum are the National, Referral, and Teaching Hospitals (NRTH) such as Kenyatta National Hospital in Nairobi. The provincial hospitals offer the next best level of care, followed by sub-district hospitals. Health centres, dispensaries, and at the bottom of the heap, community health organizations are below the sub-district level. There were 6,190 health facilities in Kenya in 2008, the equivalent of 16 facilities per 100,000 people, or 11 facilities per 1,000 km² [2].

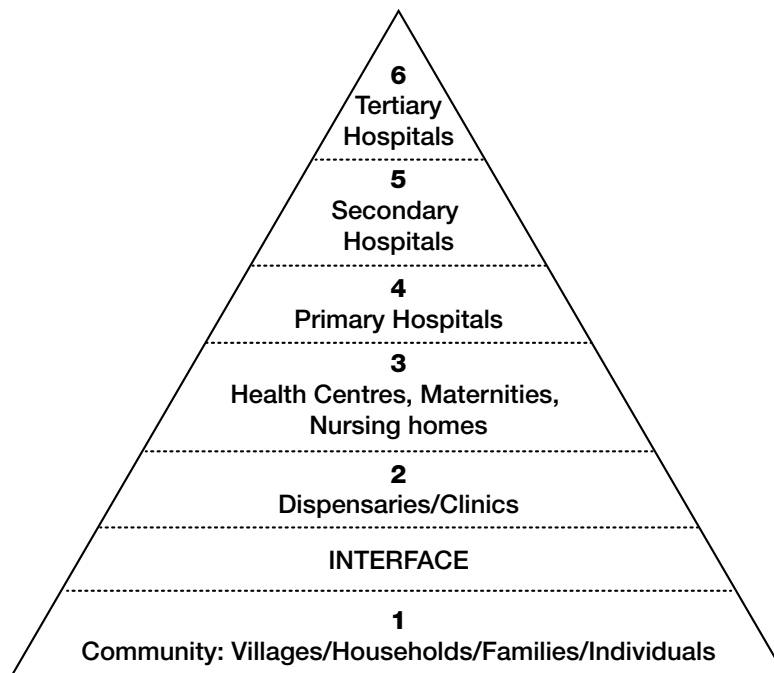


Figure 1: Levels of service delivery

Access to health and medical care is unequally spread across the country, as is the fertility rate and the level of education. Generally speaking, the Central Province and Nairobi are estimated to have the best facilities, whereas the North-Eastern Province is found to be the most underdeveloped. Poor people in rural areas who are sick and choose to seek care, usually only have the option of treatment at primary care facilities. These facilities are often under-staffed, under-equipped and have inadequate medicines.

Among those Kenyans who are ill and do not opt to seek care, 44% were hindered by cost. Another 18% were hindered by the long distance to the closest health facility.

According to the 2009 World Health Statistics Report, Kenya's total expenditure on health as a percentage of GDP was 4.6% or 29 USD per capita on health services in 2006, which is several dollars below the 34 USD the WHO recommends countries spend to provide a minimum health package for their citizens.

The under-financing of the health sector has reduced its capacity to ensure an adequate level of healthcare for the population. Thus, the provision of health and medical care services in Kenya is partly reliant on donors. More than 16% of the total expenditure on healthcare originated from donors in 2002. There are also other causes inhibiting Kenya's ability to provide adequate healthcare for its citizens. These include: inefficient utilization of resources, the increasing disease burden and the rapid population growth [3].

2 Turin, Dustin R. 2010. "Health Care Utilization: Analyzing the Kenyan Health System."

3 <http://www.allianzworldwidecare.com/healthcare-in-kenya>

1.6.1 THE KENYAN COMMUNITY HEALTH STRATEGY

Communities are at the foundation of affordable, equitable and effective health care, and are the core of the Kenya Essential Package for Health (KEPH) proposed in the second National Health Sector Strategic Plan 2005-2010 (NHSSP II). The overall goal of the community health strategy is to enhance community access to health care in order to improve productivity and thus reduce poverty, hunger, child and maternal deaths, as well as improve educational performance. This goal is to be accomplished by establishing sustainable level 1 services aimed at promoting appropriate health services across all the stages of the life cycle throughout the country, through decentralization of services; as well as enhanced accountability and responsibility among all stakeholders.

The community-based approach, as set out in this strategy, is the mechanism through which households and communities strengthen their role in health and health-related development issues, by increasing their knowledge and skills in disease control and planning for health interventions (MOH, 2007). It is for this reason that the Ministry of Health developed the Community Health Strategy to provide policy guidance for KEPH, as part of the implementation of NHSSP 2005-2010 with the involvement of communities as key actors and consumers of services.

The individuals at the household level are the primary target group as well as the implementers of level 1 services. Household heads are responsible for the day-to-day upkeep of the household affairs as well as participating in community-organized health activities. They are in contact with the Community Health Workers (CHWs) who visit them at home and the formal health system where they seek and utilize health services. The household forms the first level of care that is universally available.



1.6.1.1 THE COMMUNITY HEALTH COMMITTEE (CHC)

Formation and Composition

The lowest health governance structure is the CHC, elected in such a way that all villages in the Community Un (app. 1,000 villages) are represented. The CHC is elected at an Assistant Chief's baraza (Public Meeting) under chairmanship of the Assistant Chief. The committee is chaired by a respectable member of the community. It is recommended that a CHW should be the Treasurer while the Community Health Extension Worker (CHEW) should be the Secretary. The CHC should have 9 members who may include representatives of: Youth, Faith groups, Gender, Women's group, NGOs, People Living With Aids (PLWA), People With Disability (PWD) and any others.

Role and functions

- The role and functions of the CHC include:
- Identification of community health priorities through regular dialogue.
- Planning for community health actions.
- Participating in community health actions.
- Monitoring and reporting on planned health actions.
- Mobilizing resources for health actions.
- Coordinating CHWs activities.
- Organization and implementation of Community Health Days.
- Reporting to Level 2 on priority diseases and other health conditions.
- Leading community outreach and campaign initiatives.
- Advocating for health in the community.



1.7. PROBLEM STATEMENT

Malaria is a heavy burden for the national health system in endemic countries. In Kenya alone the disease accounts for 30-50% of all outpatient attendance and 20% of all admissions to health facilities. Malaria is also estimated to cause 20% of all deaths in children under five (MOH 2006). One reason for this is inadequate access to malaria control measures. Still 10 million Kenyans who need them do not have access to bed nets and the actual use of antimalarials on the ground is still less than 10%. This inadequacy is not only because of lack of commodities, but also due to weak local health systems and failure to involve local communities in malaria prevention and treatment. At the same time high coverage and efficacy of malaria control interventions would essentially contribute to strengthen local health systems, particularly level 1 services and help to address other public health issues.

2.1 STUDY OBJECTIVES

The objectives of this study were:

- Assessing the quality and coverage level of malaria control interventions delivered by all levels of the Kenyan health system (public, private and voluntary sector), analyzing their alignment with the National Malaria Strategic Plan and other health strategies and identifying gaps and constraints.
- Discovering major funders of malaria control interventions at all levels of the Kenyan health system and their respective beneficiaries in rural and urban areas and finding out gaps and constraints in terms of accessibility and affordability of commodities and services at community level in particular.
- Assessing the extent to which malaria control interventions contributed to strengthen the Kenyan health system and identifying bottlenecks.
- Evaluating how health system reforms contributed to effective delivery of malaria control interventions and increased access to these interventions for all people at risk of the disease and figuring out gaps and constraints.

2.2 STUDY DESIGN

Quantitative and qualitative research methods were used with the aim of increasing diversity in the data collected as well as developing a deeper perspective on the interrelationship of factors and actors in the questions.

The study was undertaken between August 2010 and January 2011 at four study sites (Embu East, Kisii Central, Pokot Central, Nyakach District) that randomly sampled a total of 1,416 households. Questionnaire interviews were carried out with household members and health personnel. Key-Informant Interviews were conducted with health personnel, NGO and FBO representatives and community opinion leaders to assess the respondents' views on key issues and to record key responses on implementation malaria control interventions and their interrelation with health system strengthening initiatives. Focus Group Discussions were done with men and women at community level to gauge the coverage level of malaria control measures and related bottlenecks. Findings from this case study formed a basis for advocacy recommendations.

Ethical Consideration

Prior to the start of the study, permission was sought from the local community leaders and other relevant authorities from the selected areas of the study sites. The respondents were fully informed about the aims and objectives of the study before included therein. Verbal or written consent was sought from each informant and they were fully informed on their right to withdraw without feeling constraint. Confidentiality of the information was ensured throughout the study.

3 QUALITY AND COVERAGE LEVEL OF MALARIA CONTROL INTERVENTIONS

Coverage and utilization of malaria control interventions

The table below indicates LLINs/ITN and IRS coverage and utilization at community/household level. Whereas ACT and IPTp availability and utilization is shown for level 2-6 services of the health system.

Table 1: Malaria Control interventions coverage by study site in percent

Study Site	ITN Coverage (households with at least one net)	Net ownership (households with 2 nets)	IRS Coverage (targeted households sprayed the last 12 months) ITN Utilization	ITN Utilization	ITN utilization (children under-five)	ITN Utilization (Pregnant women)	IPTp 2 coverage	ACT Availability in all health facilities	ACT utilization within 24hours after onset of fever
Kisii Central	81	66	37	83	55	23	21	95	36
Embu East	59	48	14	58	29	15	13	95	36
Pokot Central	56	39	25	56	46	35	31	95	36
Nyakach	90	73	91	92	68	49	13	95	36
National targets	80	N/A	80	N/A	80	80	60	100	80
National actual	54*	N/A	N/A	N/A	51*	53*	15*	94**	28**

* Source: (KDHS, 2008/9); **Source: (Quality of care survey June 2010)

The revised National Malaria Control Strategy 2009-2017 recognizes the need to involve different partners and key stakeholders to play different roles towards the control of malaria. The strategy clearly defines the types of interventions and tools that are suitable for the different epidemiological zones in the country. As this study shows four key interventions were implemented in all the sites, namely early diagnosis and prompt treatment, LLINs, ITNs, and IPT for pregnant women.

The above table shows the gaps in national coverage for all the malaria interventions in the study sites. Nyakach has the highest figures in terms of achievements especially in ITN ownership and IRS coverage. This is probably due to the early establishment of the level one health services (community strategy) that utilizes community level structures for malaria intervention implementation as compared to other study sites. According to the revised NMS (2009-2017), Kisii, Embu and Pokot Central are not eligible for the use of IPTp since they are not malaria endemic zones and this probably explains the low coverage figures. However Nyakach should promote the use of IPTp in pregnancy since it falls in the malaria epidemic zone.

Quality of malaria control interventions and respective gaps and constraints

Table 2: Malaria control interventions as perceived by communities per district

Site	Prompt Diagnosis & Treatment		Advocacy Communication
	Community	Health Facility	Social Mobilization
Kisii Central	Majority of respondents did not rush to hospital even though they recognized the symptoms of malaria but sought to purchase self-medication over the counter.	Lack of malaria diagnosis equipment and infrastructure like electricity leads to patients being given medication without testing. This is done with the assumption that the case presented is malaria.	The main source of information was through health talks given at health facilities and through barazas. The CHWs also go from house to house giving malaria and health education.
Embu East	<p>Women play a leading role in recognizing malaria symptoms and seeking treatment for their families.</p> <p>The Community also recognizes health facilities as the best option for malaria treatment. This however follows preliminary over the counter medication.</p> <p>Traditional medicine for treating malaria was only listed as an option for the elderly.</p>	<p>High coverage of health facilities leads to early treatment-seeking behavior among community members (24 hrs after onset of symptoms).</p> <p>Some of these facilities offer admission.</p> <p>The health care workers' attitude is perceived good.</p>	The main channel was through community outreaches as well as health talks given to patients.
Pokot Central	<p>Community either purchases malaria tablets from retailers or take traditional herbs when recognizing symptoms of malaria. Seeking medical care comes after these options fail.</p> <p>CHWs do antenatal and post-natal care at community level. They also follow up on mothers with children under 5 and remind them on the importance of sleeping under an ITN. The CHWs also assist malaria patients to get to the nearest health facility.</p> <p>Treatment received in health facilities is considered as high-standard.</p>	ITN supply of government facilities does not cover the needs. HRI has been supporting the MOH facilities through the provision of ITNs.	Good knowledge of communities on ITN use. CHWs were mentioned as the main providers of this information.
Nyakach	CHW played an active role in educating the community on malaria signs and symptoms, but this did not hinder the members from using traditional herbs initially. Most respondents in both male and female FGDs opted for self-medication. Going to the health facility is the last option for the majority of community members.	<p>Malaria treatment at the health facilities is perceived as good by community members.</p> <p>The attitude of the CHWs towards the patients has improved.</p>	The use of door to door and village barazas is the most common method of informing and educating community members (through CHWs). This resulted in a high level of knowledge about malaria prevention in the community and constant demand for ITNs.

Key constraints in the utilization of these malaria interventions are inadequate information among the community members as well as access to medicines and prevention tools.

Discussions with health workers highlighted the lack of supplies and equipment as the key barriers to providing quality malaria services. It was mentioned that the lack of microscopes and rapid diagnostic test kits (RDTs) to confirm malaria cases contributed to the use of malaria medicines for any suspected fevers. This approach contributes to irrational use of malaria medicines which is against the NMS calling for parasitological confirmation of malaria cases before prescription of ACTs.

Conclusions

- The net ownership has improved in reference to the national coverage (54%) though net utilization is relatively lower, but more needs to be accomplished in order to reach the Millennium Development Goals and Roll Back Malaria Partnership targets. The availability of ITNs in the rural areas will go a long way in promoting net coverage at the household's level.
- The provision of IPT in pregnancy is still low, while it is also being given out in areas where the policy does not recommend its use.
- The quality of services offered in health facilities is not only determined by the availability of the services but by how the services are perceived by the beneficiaries. If health workers do not treat the patients humanely then the services are not perceived as quality services. As long as members of the community delay in seeking treatment, the perception of quality services will still be elusive because patients seek treatment when the condition has become chronic or advanced hence the prognosis will not be good and the perception that the services offered are not good.
- The lack or the absence of supplies and equipments in health facilities determines the level and quality of services offered to the communities.
- The information disseminated by community health workers to members of the community goes a long way in changing the communities' perception and utilization of health services. The community health systems linkages through CHEWs in Kenya has taken root in areas where this study was conducted.

Recommendations

- Therefore, Kenya needs to put an aggressive effort towards universal coverage in line with its strategic plan. To achieve this, community mobilization for mass nets distribution should be launched in all malaria endemic regions as well as actively engage the CHWs in the distribution and marketing.
- IPT usage guidelines should be reviewed per region and the appropriate information of its actual use disseminated to all stakeholders and beneficiaries.
- A positive attitude among health workers should be created to enhance positive health seeking behavior from community members so as to improve on demand and utilization of malaria control and prevention services. At the same time the community health system using CHWs should be strengthened to empower households to take appropriate positive health behavior in response to services offered for malaria control and prevention interventions at the community and health facilities levels.
- Infrastructure and skills performance by health workers should be strengthened so as to improve the quality of malaria case management and to mitigate against irrational drug use.
- CHWs should continue playing the pivoting role of promotive and preventive activities carried out at the household level.

4 MAIN FUNDERS AND BENEFICIARIES OF MALARIA CONTROL INTERVENTIONS

It has been accepted internationally that malaria control cannot be achieved through a government's or a specific ministry's effort single handedly and hence the need to allow for the participation of other actors. This has enabled the initiation of efforts to mobilize resources to support governments' in the fight against malaria (RBM, 2000). The Kenyan National Malaria Control Strategy takes cognizance of this and has allowed the involvement of many other stakeholders including International NGOs, Bilateral and multilateral partners. The strategy requires that all partners in malaria control adhere to leadership by the health sector, invest in high impact and quick win measures and to follow the principles of the three ones (one strategic plan, one coordinating mechanism, and one M&E plan).

Findings from this study indicate that in all the study sites there are close working relations between NGOs and the Ministry of Health and they (the NGOs) submit monthly and evaluation reports to the respective offices.

The study established that the main funders of malaria control interventions in the four regions were USAID which provided support through local NGOs like AED; Health Right International; PATH; Pathfinder; JHPIEGO; UNICEF; Exxon Mobil; GAVI; Merlin; SHF and Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria through the Ministry of Health.

The main beneficiaries of the malaria control interventions offered in the project sites were mentioned as the general community, pregnant women and children under five years. This is in line with the national malaria control strategy which aspires to ensure that by 2013, 80% of the most at risk groups have access to the most appropriate malaria control tools provided by the government and other partners. In the FGDs and in-depth interviews it was felt strongly that all these interventions were available both in public and private facilities although there were costs involved in accessing some of them.

In all four study sites, large distances to the health facilities were mentioned as the main barrier to accessing services offered in these facilities. In one site, Kisii, the insufficient number of health workers was mentioned as a barrier, few health workers meant long queues while waiting for the few available health workers to provide the services. On affordability, most of the respondents felt that the main barrier was the user fee charged for services but on the overall they felt services were more affordable of late with the changes taking place in the country.



Table 3: Funders and beneficiaries of malaria control interventions per district

Area	Funder	Beneficiaries	Accessibility	Affordability
Kisii Central	Global Fund, USAID/AED & MCP	General community through the health facilities supported, pregnant women and children under 5 years	Insufficient number of medical doctors, long distances to health facilities and the presence of only one ambulance to serve emergencies (which if absent results to loss of lives) are major barriers to access health services in the region.	Paying the minimum user fee of less than 100kshs was a challenge for some of community residents. This fee was higher in the Sub district and district hospital. With this knowledge, some residents deliberately deferred going to level 1 or 2 facilities especially if they anticipated referral.
Embu East	Global Fund, UNICEF KCO, Exxon Mobil Foundation	General community	The majority of patients was pleased to clinics within the villages since they only needed to walk in most cases.	A user fee of less than Ksh 100 could not always be paid by some respondents. However, a waiver was given sometimes to those needy, or extension of credit in some cases.
Pokot Central	USAID/MCP	General community through the health facilities supported, pregnant women and children under 5 years	The FGD revealed that the community prefers the MOH facilities since they are cheaper, however they are far and those who are old cannot walk there. The medical procedures of testing and waiting for long before getting the results discouraged some people from accessing these services.	The community felt that the services offered at the Health facilities supported by HRI were affordable.
Nyakach	GAVI/GOK	General community	Long queues on certain days of the week acted as a barrier to accessing services, some FGD respondents cited distance to the health facilities and the incurring of additional transport expenses as a barrier.	Respondents from the FGD felt that the services were cheaper than before, they now pay 80kshs.

Conclusions

- The major funders of malaria control interventions in the country have been the government through the Global Fund with main support from donors (Bilateral and multilateral), NGOs (both local and international), UN agencies, and private companies.
- As the national malaria strategy envisions the main beneficiaries of the malaria control interventions were the general community but with focus on pregnant women and children under five years.
- The various barriers associated with access and affordability influenced how the services offered in the various levels of health care were consulted and consumed by the beneficiaries.

Recommendations

- Level of malaria funding is inadequate and more funders need to come on board especially for universal coverage of all interventions.
- With focus now shifting to universal coverage of all interventions, efforts need to increase in providing resources to implement this shift.
- Services should be integrated at all the levels of health care in order to leverage on the available resources.

5 HOW MALARIA CONTROL INTERVENTIONS HAVE CONTRIBUTED TO STRENGTHEN THE KENYAN HEALTH SYSTEM

The availability of health services at the different levels of health care demonstrates the presence of an existing health system albeit existing constraints in its hierarchy. In the four study sites, it was established that health care services were available in facilities from levels, 1 to 4 and level 5 only in Kisii district. In Pokot Central, level one service were none existent or just beginning. Given the harsh terrain in Pokot Central and the poor road networks, the availability of level one service would really help to ease the burden of accessing health services since the community health workers would address some of these problems and provide possible solutions i.e. prompt referral or home management of some of the simple ailments.

The health services provided at the different levels ranged from health education at community level given by community health workers to ITN distribution at antenatal clinics, IPT, hospital treatment and admission at the health facility level by health professionals. Other services provided by CHWs include treatment of minor ailments, distribution of nets to pregnant women and children under five at the village level. The health workers at the facility level also supported the training of community health workers to ensure that they were skilled and able to manage simple health problems at the village level. The NGOs supporting the delivery of these interventions also supported trainings to enhance the capacity of health workers to diagnose and treat malaria using the correct algorithms and diagnostic tools.

The lack of supplies or equipments necessary for the delivery of health services hampers the functionality of the health system. As soon as the beneficiaries learn about these gaps they don't turn up at health facilities and those who turn up end up getting frustrated because they leave the facilities without getting the services they required.

This cycle of events impacts negatively on the health system. Consequently, a functioning supply chain has not only positive effects for prevention and treatment of malaria, but for the perception of health services and therefore the health system as a whole.

Looking forward, malaria control interventions will have great impact on the health system particularly at level one and already has. In malaria national policy 2010, Kenya has now moved to diagnosis based treatment policy. This means that future investment by malaria programs will include investing in diagnostic capacity at peripheral facilities and at community level, which benefit the health system in total. For example through the GFATM round 10 which Kenya has been awarded it envisages investment in malaria diagnosis through provision of RDT at the community and peripheral facilities. This coupled with in-service training of health worker on diagnosis through microscopy and RDT. The policy further envisages strengthening of community units which through the implementation of the community health strategy will deliver community case management in the high endemic regions of Nyanza and Western Province. Further resources are sought to sustain the gains in other regions in the country. Consequently, investments in diagnostic and hospital infrastructure for malaria as well as training of health workers and employment of health personnel within a disease-specific program benefit the whole health system, particularly at community level. But without the respective infrastructure, trained personnel and supplies (such as medicines, RDTs and LLINs) there will be negative impact on malaria control as well as the health system.

Table 4: Health care and malaria control interventions by study site

Area	Level of Health Care Interventions available						Specific Activities	Challenges
	1	2	3	4	5	6		
Kisii Central (SHF activities)	✓	✓	✓	✓	✓		<ul style="list-style-type: none"> • IRS, ITN distribution • monitoring specific sites for stock outs • lobbying for other partner support to the MOH • CHW training, monitoring and support 	<ul style="list-style-type: none"> • Occasional stock outs of drugs • KEMSA drug supply system is not demand driven. • Absence of nets makes knowledge about malaria prevention futile (in communities).
Embu East (SHF activities)	✓	✓					<ul style="list-style-type: none"> • Carrying out health outreaches • Drug and malaria commodity distribution to SHF community clinics • Training MOH Health Care Workers on case management 	<ul style="list-style-type: none"> • The health facilities often lack laboratory equipment and proper diagnosis is sometimes not carried out. • The MOH lacks capacity to train staffs and roll out activities on their own hence relying on NGOs like SHF • Inefficient supply of drugs from KEMSA • Poor monitoring from the MOH
Pokot Central (HRI activities)		✓	✓	✓			<ul style="list-style-type: none"> • ITN distribution • monitoring of malaria commodity distribution • CHW support and monitoring • MOH training on health services administration • supporting MOH malaria commodity supply and intervention activities 	<ul style="list-style-type: none"> • Sustaining the CHWs through incentives remains a challenge for NGOs like HRI since the CHWs are used to small allowances. This creates a stronger affiliation of the CHW towards NGOs as opposed to the MOH • Leveraging partner policies with the MOH • Stock outs of drugs due to the fact that demands supersedes supply of drugs
Nyakach (SHF activities)	✓	✓	✓	✓			<ul style="list-style-type: none"> • general health services including malaria diagnosis and treatment • Community health education 	<ul style="list-style-type: none"> • Constant stock outs of ITNs and malaria medicines remain a challenge, especially during peak malaria periods of June to October.

Conclusions

- Malaria diagnosis and treatment are done within the context of a health system, no matter if done by public or private facilities.
- Increased availability of malaria control interventions automatically strengthens local health systems.
- NGOs in the study sites supported governmental facilities to increase coverage of malaria control interventions and other medical services. Therefore, NGOs essentially contributed to an augmented availability of health services including malaria control interventions, hence contributing to strengthen local health systems particularly at community level.
- Drug stock-outs and lack of medical equipment have negative impact on the treatment-seeking behavior of patients and weaken local health systems due to limited services being offered.

Recommendations

- Effective malaria prevention and control interventions should be increased throughout the country in order to reach universal coverage and strengthen local health systems particularly at community level.
- The cooperation between public facilities and NGOs should be accelerated, to leverage on the resources available in the health system and to support malaria control interventions at the same time making sure that efforts are not doubled and the provision of health services is mainly done by the government.
- Drug supply-chains should be demand-driven.
- Efforts should be increased to avoid stock-outs of medicines and to provide health facilities with adequate equipment for diagnosis and treatment in order to improve the quality of services provided and therewith strengthen local health systems.

6 HOW HEALTH SYSTEM REFORMS IN KENYA CONTRIBUTED TO MORE EFFECTIVE DELIVERY AND INCREASED ACCESS TO INTERVENTIONS

The purpose of a health system is to ensure health improvement in the population by a network that provides care at different levels that have different expertise, infrastructure and equipment for each level. For the health system to work all these components must be available and in sync.

In this study it was established that in some of the study sites some of the components were lacking and hence the types of services offered were not to the required standards.

However, the presence of various NGOs supported the delivery of health services to the people by leveraging on what the government was able to provide. Respondents in the FGDs and in-depth interviews applauded the support that was given to the government by these NGOs through capacity enhancement for infrastructure development and skills and knowledge to health personnel for improved performance in their work. It was also mentioned that NGOs supported the government through outreach services which helped to improve access to health services for those communities that were located in areas where there were no health facilities. In Embu for instance, the CFW shops were seen to support the health facility network by bringing the services closer to the villages at the market centers where most of the community members come to buy their household supplies. The support of the NGOs in these areas facilitated the delivery of health services far and beyond where the public health facilities would be able to cover hence more people had access to the available malaria control interventions.

The national health systems reforms in Kenya have defined medium term as well as long term national priorities and targets articulated in the Kenya Vision 2030 document^[4]. The health systems reforms as outlined in the Kenya vision 2030 focus on areas such as improving health access, equitable distribution of health resources, capacity building and devolution of funds to fight priority diseases such as malaria, HIV & AIDS and other infectious diseases. The actions for strengthening community systems for malaria control activities are further defined in the Kenya Essential Package of Health-taking the essential package of health to the community-level one activities^[5]. Through Annual District Operations plans and the malaria business plans, the national malaria control program rolls out the objectives and activities for malaria control as outlined in the National Malaria Strategic plan 2009-2017.

Some of the plans that the Kenya Ministry of Health has put in place to support malaria activities through health systems strengthening include:

- Mobilize resources around priority interventions e.g improved diagnostics and case management.
- Strategic approach to address malaria interventions according to epidemiological zones.
- Build capacity for diagnostics, case management and other vector control activities.
- Development of sector specific documents to for malaria policy and implementation framework from the national level to community level one activity.

Table 5: HSS and malaria control key documents

Area of guidance	Primary document	Malaria specific documents
Policy level	Kenya Health Policy framework	National Malaria Policy: April 2010
Strategic level	National Health Sector Strategic Plans	National Malaria Strategic plan 2009-2017
Operational level	Annual district plans that are built into the provincial plans	Annual Malaria Business Plan

4 Ministry of Health, Reversing the trends-The second National Health Sector Strategic Plan for Kenya: NHSSP II, 2005-2010, September 2005.

5 MoH, Roadmap for Acceleration of Implementation of interventions to achieve the Objectives of the NHSSP II, December 2007.

Some of the key strategic thrusts for strengthening malaria control actions include:

- Improving quality and responsiveness of malaria case management at the health facility levels (L2, L3 and level 4 health facilities). This includes improving diagnostics, distribution and administration of ACTS.
- Fostering partnership through Malaria Technical working groups.
- Rolling out the strategy for community unit actions- level one preventative activities.
- Support supervision for level one activities.
- Establishment of stakeholders forum at the district level.
- Staff recruitment and deployment.

Constraints to implement health system strengthening that affect malaria control:

1. Lack of capacity by district health teams to implement outlined activities.
2. Staff attrition and deployment to other health areas after trainings.
3. Shortage of health staff within the national health sector.
4. Slow implementation of the Kenya essential package of health.

How health system reforms in Kenya have impacted malaria control interventions:

There has been remarkable positive increase of malaria control interventions in Kenya. For example there has been an increase in the net ownership in the country as shown in figure 2.

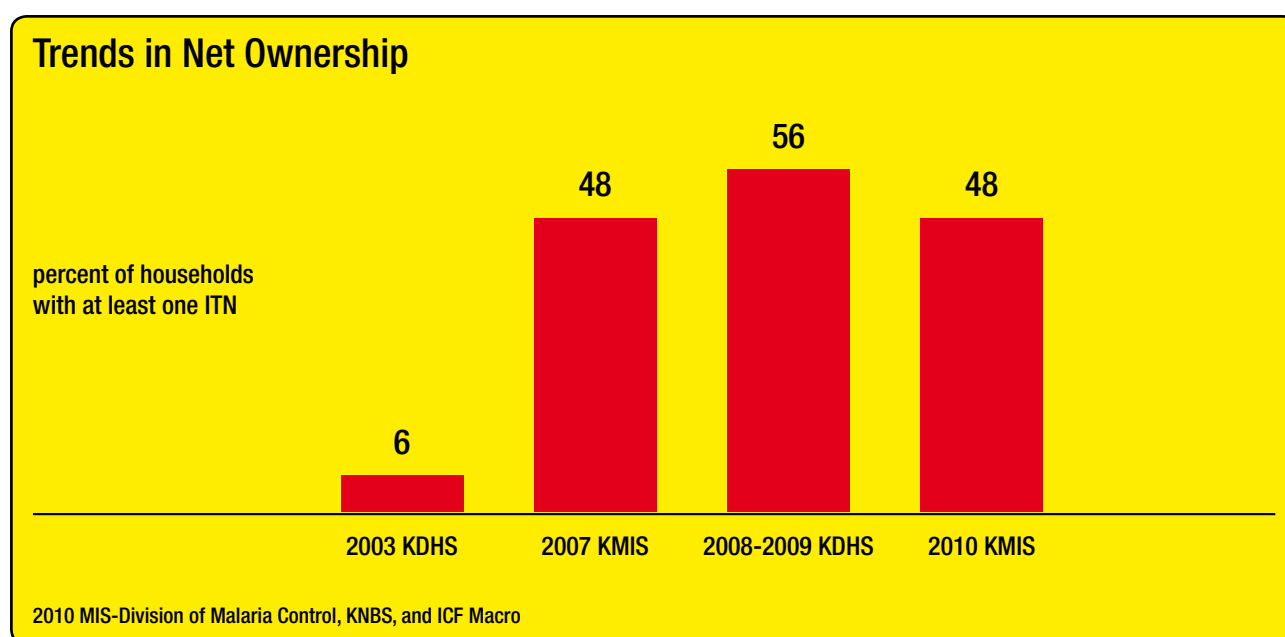


Figure 2: Trends in net ownership

The above figure indicates an increase in net ownership in Kenya. However, it should be noted that in 2007 figures are as a result of mass net campaign done in 2006 funded by GFATM round 4. Routine net coverage through the ANC clinics to pregnant mothers and children under 5 children then maintained the high coverage through the KDHS in 2008/9.

Further in the 2010 MIS shows a decrease in ownership due to lack of finances to replace the 2006 nets which were to be replaced in 2009 (replacement done every 3 years) as planned in the national malaria strategy.

Health system strengthening further impacted positively on malaria case management. In 2010 65% of adults and 25% of children under 5 years of age sought treatment in public and private facilities respectively (MIS, 2010). However 9% went to shops, 4% went to faith based and 3% to traditional healers and only 2% to community health workers.

This shows that malaria case management is increasingly managed at health facilities and there is a need to invest in the health system to meet this demand.

For example after ACT's were introduced in 2006 as a national treatment policy, use of ACT by children under five years rose from 7% in 2007 to 18% in 2010. This has seen a rise in prompt treatment in the same category raise from a modest 4% in 2007 to 11% in 2010 (MIS, 2010).

Conclusions

- The availability of health services at the different levels of health care ensured continuity of services, including malaria control interventions, and helped to maintain the linkages in the health system chain. Services offered at the community level proved very important and life saving in rural areas and hard to reach areas. The CHWs at the community level assisted in identifying and referring health issues (including malaria cases) to the formal health system through the established community networks. The community health systems linkages through CHEWs in Kenya have taken root in areas where this study was conducted.
- The support given to the MOH by the local NGOs to carry out supervision helped to build a profile of community issues and hence informed the decision making processes.
- The support provided by the local NGOs in the study sites enhanced the strengthening of the health systems through skills and knowledge imparted to the health workers as well as the infrastructure provided in the form of equipment and construction of clinics.
- The innovation in the health system infrastructure such as the establishment of local clinics run by local inhabitants was an initiative that helped to build the health system right from the village level.
- The stronger the health system the better the quality and coverage of malaria control interventions which leads to less malaria cases and deaths.
- Strong community health systems are key for significant impact of malaria control interventions as well as reaching and sustaining universal coverage.

Recommendations

- Therefore, NGO's should continue to support the health system by strengthening infrastructure and skills performance of health workers in order to improving the quality of malaria interventions such as case management and to mitigate against irrational use of malaria medicines.
- These innovations should be scaled up by engaging local entrepreneurs in order to increase access to malaria intervention at all levels.
- Governmental efforts to provide drugs, medical equipment, health education, adequate payment of health staff and to build infrastructure should be scaled up in order to improve the quality and coverage of health services, strengthen local health systems with particular regard to community health services and reach universal coverage of malaria control interventions.

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