Republic of Kenya

Komesha Malaria
Okoa Maisha

Towards a malaria-free Kenya

National MALARIA Strategy 2009–2017

Division of Malaria Control
Ministry of Public Health and Sanitation
July 2009

DIVISION OF MALARIA CONTROL
MINISTRY OF HEALTH, KENYA

Republic of Kenya

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Foreword

This National Malaria Strategy covering the period 2009–2017 has been developed in line with the Government's first Medium-Term Plan of Kenya Vision 2030 and the Millennium Development Goals, as well as Roll Back Malaria partnership goals and targets for malaria control. The National Malaria Strategy is based on and carries forward an inclusive partnership between the two ministries responsible for health, other line ministries of the Government of Kenya, and our development and implementing partners in malaria control. It is a product of extensive consultation and collaboration with all stakeholders and establishes a strategic framework for the delivery of malaria control interventions, along with monitoring and evaluating performance. The strategy builds on the achievements and challenges arising during the implementation of the previous NMS 2001-2010, the National Health Sector Strategic Plan (NHSSP II 2005–2010) and the Economic Recovery Strategy (2003–2007).

Over the implementation of the previous strategy, the increase in resources available for malaria control globally resulted in the increased delivery of malaria control interventions such as long-lasting insecticide treated nets, indoor residual spraying, preventive treatment for malaria in pregnancy and more effective malaria medicines including artemisinin combination treatments (ACT) at no cost to vulnerable populations. As a result of these achievements Kenya is currently witnessing a general decline in malaria morbidity and mortality. These gains need to be sustained and enhanced by scaling up interventions to universal coverage for all persons at risk for maximum impact on morbidity and mortality. This will ensure that the country achieves the global malaria control targets of 2010 and the Millennium Development Goals for 2015, and moves towards sustained control and possible malaria elimination in the future.

In this strategy we have articulated the efforts required to scale up malaria control and laid the groundwork for to realizing the vision of a "Malaria-free Kenya". More broadly, the strategy is in line with my Ministry's vision to transform Kenya into "a nation free from preventable diseases and ill health". It will also aid the Ministry of Public Health and Sanitation in advocacy for increased resource mobilization and partnership involvement in its implementation.

Malaria control is not just a health issue, it is an overall development issue as malaria is a driver of poverty, a debilitating disease that affects millions of Kenyans each year and is unfortunately fatal to many thousands. The toll it exacts must be

viewed from the physical, financial and emotional pain it inflicts on individuals and families and also importantly from its macroeconomic impact.

To address this situation the strategy calls for enhanced multisector participation at all levels. Involvement of other government ministries and departments is inevitable, so is the engagement of current and new stakeholders from other sectors. The strategy contains well-articulated roles for these sectors to ensure effective coordination and the implementation of the strategy's three key pillars: Health sector leadership by the ministry; priority investment in high impact, quick-win measures; and adherence to the principles of the three ones as clearly defined in the strategy.

I am confident that this strategy provides the necessary framework for the requisite multisector approach towards malaria control and I urge all stakeholders to put all effort into its implementation to enable the country to move towards the vision of "a malaria-free Kenya".

Hon. Beth Mugo, EGH, MP
Minister for Public Health and Sanitation

Acknowledgements

An elaborate consultative process involving several key stakeholders in malaria control marked the development of this strategy. The Ministry would like to thank the Director of Public Health, Dr. S.K. Sharif, and the Head of the Department of Disease Prevention and Control, Dr. Willis Akhwale, for providing policy guidance and technical direction to the development of the strategy.

The commitment, technical support and overall stewardship from the members of the Malaria Interagency Coordinating Committee, the World Health Organization (headquarters, Africa Regional Office, Inter-country Support Team and the Kenya Country Office), development partners and implementing partners in malaria control are highly appreciated.

Further, the strategy would not have been possible without the dedication, technical input and participation of members of the six thematic groups of the Malaria Programme Performance Review Task Force: vector control; parasite control; surveillance, monitoring and evaluation; advocacy, communication and social mobilization; malaria commodities management; and programme management.

The contribution and participation of departments within the Ministry of Medical Services and the Ministry of Public Health and Sanitation, all Provincial and District Health Teams, the Ministry of Education, Ministry of Internal Security (Provincial Administration), Ministry of Tourism and Wildlife, and Ministry of Home Affairs (Prisons Department), along with those of the Kenya Network of NGOs against Malaria (KeNAAM), civil society and faith-based organizations, research and academic institutions, and the private sector have made the strategy a truly multisector response to the challenges of malaria in Kenya.

My sincere gratitude goes to the United Kingdom's Department for International Development (DFID) for financing the development of the strategy, the United States President's Malaria Initiative (PMI) and the United Nations Children's Fund (UNICEF) for technical assistance. We also acknowledge the commitment and contributions of the Malaria Goodwill Ambassador, Prof. Julius Meme.

I would like to thank staff of the Division of Malaria Control for coordinating the process and in particular the drafting team, comprising Elizabeth Juma, Rebecca Kiptui, Andrew Nyandigisi, Agneta Mbithi, John Moro, James Sang, Dorcas Alusala,

Josephine Karuri and Andrew Wamari, plus Augustine Ngindu and Dr. Akpaka Kalu of WHO Kenya. I acknowledge the contribution of members of various communities in Kenya and all individuals whose support has made the development of the National Malaria Strategy possible.

Komesha Malaria, Okoa Maisha

Mark K. Bor, EBS
Permanent Secretary
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Contents

List of Tables

List of Figures

List of Abbreviations

ACSM	Advocacy, communication and social mobilization
ACT	Artemisinin-based combination treatment
ADR	Adverse drug reactions
AIDS	Acquired immune deficiency syndrome
AL	Artemether-lumefantrine
AMFm	Affordable Medicines Facility for Malaria
ANC	Antenatal clinic/care
AOP	Annual operational plan
BCC	Behaviour change communication
CBO	Community-based organization
CCM	Country Coordinating Mechanism
CDC	Centres for Disease Control and Prevention
CDF	Constituency Development Fund
CHEW	Community Health Extension Worker
CHW	Community health worker
CORP	Community-owned resource person
CSO	Civil society organization
CWC	Child welfare clinics
DCAH	Division of Child and Adolescent Health
DDSR	Department of Disease Surveillance and Response
DEH	Department of Environmental Health
DFID	(United Kingdom) Department for International Development
DHMT	District Health Management Team
DHP	Department of Health Promotion
DOMC	Division of Malaria Control
DPHS	Director of Public Health and Sanitation
DQA	Data quality audit
DRH	Division of Reproductive Health
DVBD	Division of Vector Borne and Neglected Diseases
DVI	Division of Vaccines and Immunization
EANMAT	East African Network for the Monitoring of Anitmalarial Treatments
EARN	East African Roll Back Malaria Network
EBP	Evidence-based practice
EPR	Epidemic preparedness and response

FANC	Focused antenatal care
FBO	Faith-based organization
FY	Financial year
GDP	Gross domestic product
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GIS	Geographic information system
GOK	Government of Kenya
GPS	Global positioning system
HIV	Human immunodeficiency virus
HMIS	Health Management Information System
HMM	Home management of malaria
HRH	Human resources for health
HSSP	Health Sector Strategic Plan
ICIPE	International Centre for Insect Physiology and Ecology
ICT	Information and communications technology
IDSR	Integrated disease surveillance and response
IEC	Information, education and communication
IFMIS	Integrated financial management information system
IMCI	Integrated management of childhood illnesses
IMR	Infant mortality rate
IP	Implementing partner
IPT	Intermittent preventive treatment
ITPp	Intermittent preventive treatment in pregnancy
IRS	Indoor residual spraying
ITN	Insecticide treated net
IVM	Integrated vector management
JPWF	Joint Programme of Work and Funding
KDHS	Kenya Demographic and Health Survey
kdr	Knock down resistance mutation
KEMRI	Kenya Medical Research Institute
KEMSA	Kenya Medical Supply Agency
KEPH	Kenya Essential Package for Health
KMTC	Kenya Medical Training College
KNBS	Kenya National Bureau of Statistics
KRCS	Kenya Red Cross Society
LLIN	Long lasting insecticidal nets
LMIS	Logistics management information systems
M&E	Monitoring and evaluation
MDGs	Millennium Development Goals
MEDS	Mission for Essential Drugs and Supplies
MEWS	Malaria early warning system
MIAS	Malaria Information Acquisition System
MICC	Malaria Interagency Coordinating Committee
MIP	Malaria in pregnancy
MIS	Malaria Indicator Survey
MMR	Maternal mortality ratio
MOH	Ministry of Health
MOMS	Ministry of Medical Services
MOPHS	Ministry of Public Health and Sanitation
MPR	Malaria Programme Review
MSH/SPS	Management Sciences for Health/Strengthening Pharmaceutical Systems
MTP	Medium-term plan
NCQLS	National Quality Control Laboratory Service

NHPLS	National Public Health Laboratory Service
NHSSP II	National Health Sector Strategic Plan II
NMCP	National Malaria Control Programme
NMS	National Malaria Strategy
OR	Operational research
OTC	Over the counter
PCBP	Pest Control Products Board
PHMT	Provincial Health Management Team
PMI	United States President's Malaria Initiative
PPB	Pharmacy and Poisons Board
PR	Principal Recipient (of Global Fund support)
PSI	Population Services International
PSM	Procurement and supply chain management
PW	Pregnant women
QA/QC	Quality assurance/quality control
RBM	Roll Back Malaria Partnership
RDT	Rapid diagnostic test
RTI	Research Triangle International
SM&EOR	Surveillance, monitoring and evaluation, and operational research
SP	Sulphadoxine-pyrimethamine
TFR	Total fertility rate
TORs	Terms of reference
TOT	Trainer/training of trainers
TOWA	Total War against AIDS
TWG	Technical working group
UN	United Nations
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UON	University of Nairobi
USAID	United States Agency for International Development
VVP	Voluntary pooled procurement
WHO	World Health Organization
WMD	World Malaria Day

Executive Summary

The Government of Kenya recognizes malaria as a health and socio-economic burden and, as articulated in the second National Health Sector Strategic Plan (NHSSP II 2005–2010) and the Ministry of Public Health and Sanitation's 2008–2012 strategic plan, considers malaria control a priority investment necessary for the realization of *Kenya Vision 2030*. Malaria is responsible for 30 per cent of outpatient consultations, 19 per cent of hospital admissions and 3–5 per cent of inpatient deaths. Seventy per cent of Kenya's population lives in malarious areas.

There are four malaria epidemiological zones based on transmission: endemic, highland epidemic prone, arid seasonal and low risk. Twenty-nine per cent of the population lives in malaria endemic zones where children and pregnant women bear the brunt of the disease. The seasonal transmission of malaria in the arid and highland epidemic prone areas confers negligible immunity to malaria, making the whole population vulnerable to malaria. Sporadic malaria transmission may occur in low risk areas mainly in central Kenya.

The Process

The National Malaria Strategy (NMS) 2009–2017 has been developed through a multi-stakeholder, multisector participatory approach in line with recommendations from the Malaria Programme Performance Review (MPR) conducted from March to June 2009. The MPR highlighted programmatic strengths, weaknesses and gaps to address. Some of the findings that significantly informed the development of the strategy include: a low malaria burden and transmission pattern in most parts of the country, which makes presumptive treatment even in children less than five years inappropriate, and different malaria burden and transmission patterns in different districts, which makes blanket nationwide implementation of malaria interventions inappropriate.

Moreover, the review concluded that universal access to parasite and vector control interventions will interrupt malaria transmission in low transmission zones and further reduce the malaria burden in high transmission areas; and that malaria elimination is possible, based on current technologies and given adequate funding, through strategic investments aimed at, in the medium term, expanding malaria-free areas. One major difference from the previous strategy therefore is the scale up and consolidation of malaria control interventions with strengthening of surveillance, monitoring and evaluation. The strategy is aligned to overall health sector strategies and the current

medium-term plan implementation period of the national development agenda, Vision 2030.

Strategic Objectives

The NMS 2009–2017 details the key strategic objectives and targets that the programme should achieve during the implementation period. These are:

Objective 1: To have at least 80 per cent of people living in malaria risk areas using appropriate malaria preventive interventions by 2013 through:

- Universal LLIN coverage for populations at risk;
- Indoor residual spraying in targeted areas for disease burden reduction; and
- Prevention of malaria in pregnancy.

Objective 2: To have 80 per cent of all self-managed fever cases receive prompt and effective treatment and 100 per cent of all fever cases who present to health facilities receive parasitological diagnosis and effective treatment by 2013 by:

- Strengthening capacity for malaria diagnosis and treatment;
- Increasing access to affordable malaria medicines through the private sector; and
- Strengthening home management of malaria.

Objective 3: To ensure that all malaria epidemic prone districts have the capacity to detect and the preparedness to respond to malaria epidemics annually by 2010 through capacity strengthening for epidemic preparedness and response.

Objective 4: To strengthen surveillance, monitoring and evaluation systems so that key malaria indicators are routinely monitored and evaluated in all malarious districts by 2011 through capacity strengthening for malaria surveillance, routine monitoring and operational research.

Objective 5: To strengthen advocacy, communication and social mobilization capacities for malaria control to ensure that at least 80 per cent of people in malarious areas have knowledge on prevention and treatment of malaria by 2014 through the development of appropriate advocacy for uptake of specific malaria interventions.

Objective 6: To strengthen capacity in programme management in order to achieve malaria programmatic objectives at all levels of the health care system by 2014 through capacity building for human resource and infrastructure and instituting activity performance monitoring.

Implementation

The NMS 2009-2017 focuses on moving away from business as usual to implementation through the adoption of a multisector approach to control with defined roles for all implementing partners. Malaria control interventions will be targeted on the basis of prevailing epidemiology for maximum impact. Priority is given to decentralizing malaria control operations to the implementation level and strengthening malaria control performance monitoring and evaluation.

Each broad strategic objective has a planning and implementation matrix showing specific objectives, activities and timelines, as well as a monitoring and evaluation framework with targets, indicators and responsibility. A detailed costing plan by activity for each broad objective is also included.

1. Introduction

Across the world, commitment is growing to reduce – even eliminate – the incidence of malaria. The concern is rooted in both humanitarian and economic issues. Malaria is responsible for extensive mortality and morbidity, especially of children, and it saps the vitality of the workforce and diverts resources needed for development.

Kenya's response to the impact of the disease has been multifaceted, guided since 2001 by the ten-year National Malaria Strategy 2001–2010 (NMS) launched in April of that year. Good progress in some areas during the plan period was noted in the 2009 Malaria Programme Performance Review (MPR), but much more needs to be done. As that first strategy draws to a close, then, the health sector is putting in place a new plan to build on its accomplishments and address its shortcomings through this strategy for 2009–2017.

The strategy opens with a brief profile of Kenya, along with an account of the organization and structure of the malaria control system in Kenya. Following this introduction, the strategy then summarizes the epidemiology of malaria, lays out the various components of this new strategy and a budget, and presents a logical framework detailing the goals, objectives and timeline of proposed activities.

1.1 Country Profile

The Republic of Kenya straddles the Equator, lying across latitude 5° North to 5° South and longitude 34° East to 42° East, and is bordered by Ethiopia to the north, Sudan to the northwest, Uganda to the west, Tanzania to the south and Somalia in the east. Kenya covers a total area of 582,646 square kilometres, with the land rising from sea level at the Indian Ocean to 5,199 metres at the highest peak of Mount Kenya. About 80 per cent of the land area is arid or semi-arid and only 20 per cent is arable. Administratively, Kenya is divided into eight provinces, which are currently subdivided into 209 districts, each district into divisions, each division into locations and each location into sub-locations.

A new vision of a *Malaria-Free Kenya* is emerging, one that may require a new mission with comprehensive partnership relationships and values in DOMC.

Kenya's eight provinces are home to peoples of diverse cultures – more than 42 ethnic groups with as many languages. They have in common a dependence on agriculture, which provides the livelihoods of 80 per cent of the population.

1.1.1 Climate

Kenya enjoys an altitude modulated tropical climate. It is hot and humid at the coast, temperate inland and at higher altitudes, and very dry in the north and northeast parts of the country. The Great Rift Valley bisects the Kenya highlands into east and west. The highlands are cool and agriculturally rich areas in which both large and smallholder farming is carried out. There are two rainy seasons; the long rains occur from April to June and the short rains from October to December.

An important characteristic of rainfall in Kenya is its unreliability, both in amount and expected time of arrival. The hottest period is from January to March and the coldest from July to August. Kenya's geographic position and high percentage of arid and semi-arid lands makes the country particularly vulnerable to the impact of global warming and climate change. The effects of this phenomenon are, in fact, already being felt in many areas through prolonged drought and more intense flooding than have been known in the past. Moreover, over the next few decades increasing temperatures have the potential to extend the areas of malaria endemicity to zones that are presently relatively free of the disease (UNFPA, 2009).

1.1.2 Ecosystems and Environment

The country has a diverse ecosystem, influenced by the altitude, rainfall and proximity to Lake Victoria and the Indian Ocean. This has an influence on the malaria epidemiological zones. Several freshwater and alkaline lakes dot the Rift Valley, from Lake Turkana on the northern border with Ethiopia to Lake Magadi in the south bordering Tanzania. The two major rivers, the River Tana and Athi River, both drain into the Indian Ocean. Dams on the two rivers generate hydroelectric power, and are, as well, major malaria vector breeding sites that contribute to malaria transmission in those areas. Recent studies in the arid and semi-arid areas show relatively high parasite prevalence among people living near rivers. Population increases within the highland regions puts increasing pressure on the available arable land, resulting in deforestation and the creation of new malaria vector breeding sites.

1.1.3 Demography

In 2009, Kenya's projected population is approximately 39.4 million, a little over 10 million more than the 1999 population (KNBS, 2008 Revised population projections 2000–2020). Children under five years of age comprise 17 per cent of the total population, while a quarter of the entire population consists of women of reproductive age (15 to 49 years). Kenya's infant mortality rate (IMR) is 52 per 1000 live births, under 5 years mortality is 74 per 1,000 live births and the maternal mortality ratio (MMR) is 410 per 100,000 live births (KDHS, 2008). The annual population growth rate was 2.8 per cent in 2007 and the total fertility rate (TFR) was 4.8. Overall life expectancy at birth is 52.1 years (UNDP Human Development Report 2007/08).

Kenya is particularly vulnerable to the impact of global warming. Increased temperatures resulting from climate change have the potential to extend the areas of malaria endemicity to zones that are presently relatively free of the disease.

1.1.4 Infrastructure

With a well-developed international and domestic air transport infrastructure, Kenya is the subregional hub for transport and communication. Despite its disrepair, the national road network links all major towns spread across all the malaria epidemiological zones. This network also serves as the transit route to other countries and regions including Uganda, Rwanda, Democratic Republic of Congo and Southern Sudan. The main grid of the railway network stretches from the coastal town of Mombasa to Kampala, Uganda. Cross border population movements as well as population movement across the different malaria epidemiological zones in the country have an impact on malaria transmission. The internal road network remains a challenge, as most of the roads linking smaller towns and villages are in poor condition, which negatively affects the accessibility of peripheral health facilities in terms of both the provision of essential supplies and the ability of people to reach the facilities.

Telecommunication is increasingly well developed, marked by over 10 million mobile phone users to date and a vibrant Internet service industry. A new fibre optic link will further enhance the telecommunication capability in the country. This communication network has the potential of improving health information and data flow systems.

On the other hand, less than 10 per cent of the population – including most rural health facilities – is connected to the national electricity grid. This has implications for the delivery of some health care services and the maintenance of vaccine cold chains.

Access to potable water is similarly limited, exacerbating the impact of water-borne diseases, while most rural Kenyans depend on wood and other biomass for heating and cooking fuel. This situation diverts human resources from activities that are more productive than fetching water and firewood, both of which also serve to expose people – mostly women and children – to malaria vectors.

1.1.5 Farming Practices

Agriculture is the mainstay of Kenya's economy, contributing over one-third of the gross domestic product (GDP) and providing employment to 75 per cent of the workforce. Tea, coffee, horticulture and cut flowers are the main export commodities from the agriculture sector. Other agricultural products include maize, wheat, sugarcane and dairy products. Malaria negatively affects agricultural productivity, resulting in reduced revenue and heightened food insecurity. Kenya's total irrigated area is about 80,000 hectares, mainly rice and horticultural products. Irrigation schemes enhance malaria vector breeding sites, thus increasing malaria transmission.

1.1.6 Socio-Economic Indexes

Kenya's overall development framework is guided by *Kenya Vision 2030*, a long-term policy that aims at creating a "globally competitive and prosperous country with a high quality of life by 2030". Kenya's economy grew from virtual stagnation in 2002 to a high rate of 7.0 per cent in 2007, then slipped in 2008. Industrial manufacturing contributed 9.7 per cent of the country's GDP, while tourism contributed about 12 per cent and accounted for over 9 per cent of the total wage in 2007. Improved economic growth enabled an increase in recurrent and development funding for health services from 7 per cent in 2003/04 to 7.9 per cent in 2006/07 (*Economic Survey*, 2008).

The adult literacy rate (age 15 and older) is 78.6 per cent, while the combined primary, secondary and tertiary enrolment is 60.6 per cent (UNDP Human Development Report 2007/08).

1.2 Institutional Framework for Malaria Control

As one of the divisions under the Department of Disease Prevention and Control in the Ministry of Public Health and Sanitation (MOPHS), the Division of Malaria Control (DOMC) manages Kenya's National Malaria Control Programme (NMCP) activities at national level. DOMC also works with other divisions and departments whose functions have a bearing on malaria control. In addition, the NMCP has a well-established national coordinating body, the Malaria Interagency Coordinating Committee (MICC), chaired by the Director of Public Health and Sanitation, with the DOMC as secretariat. Various technical working groups (TWGs) advise on the areas of their respective technical areas. In addition, a number of steady and long-term development partners provide direct and indirect technical support and funding for activities.

This section provides details of the organization, policy framework, resources and financing of the NMCP.

1.2.1 Organization of the Ministry of Public Health and Sanitation

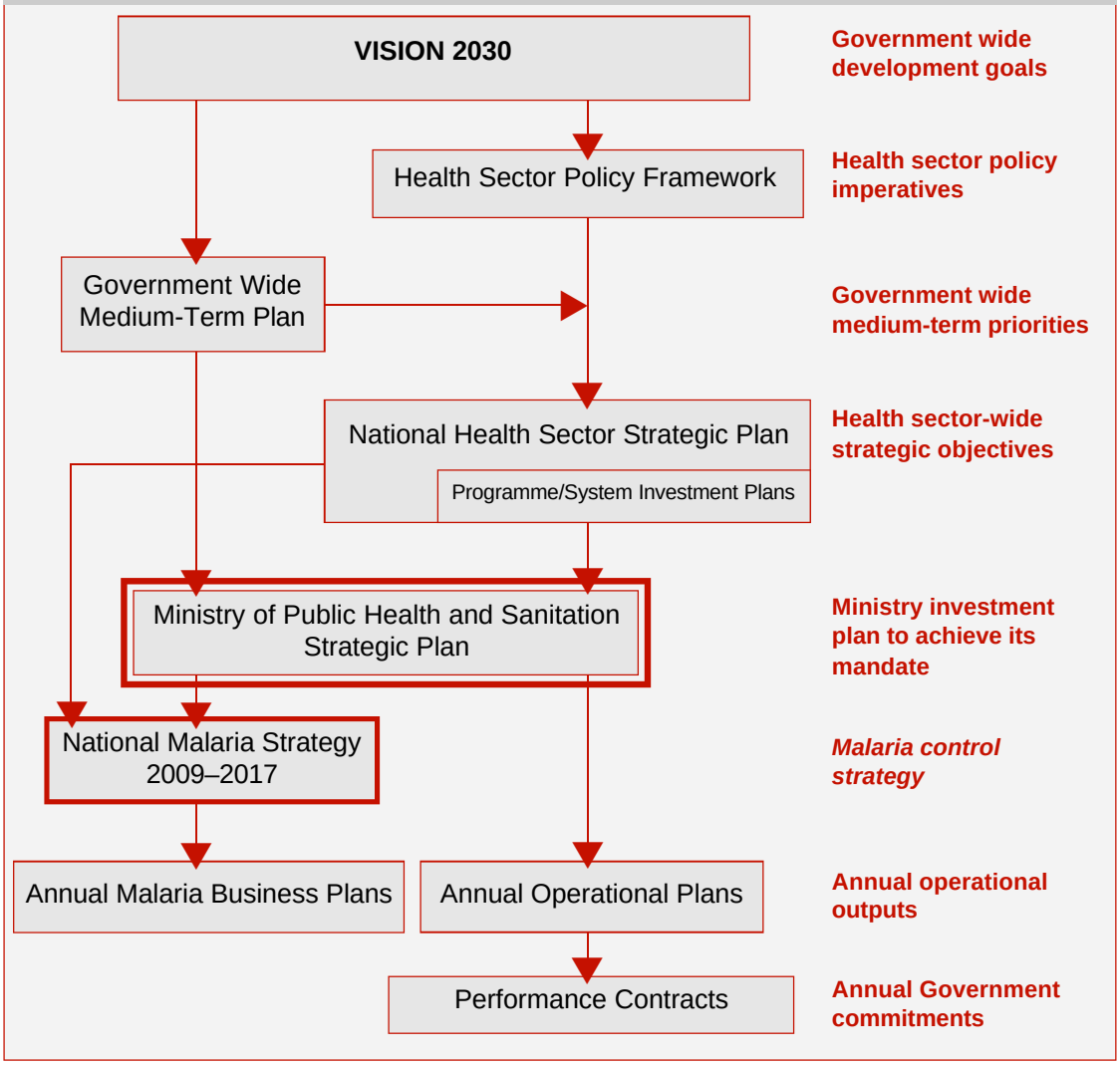
The Ministry of Public Health and Sanitation was formed following the signing of the National Accord and Reconciliation Act of 2008 as part of Government's reorganization process. The process saw the Ministry of Health split into two: Ministry of Public Health and Sanitation (MOPHS) and Ministry of Medical Services (MOMS). The role of MOPHS is to direct focus on public health and preventive measures and provide leadership in ensuring that public health policy objectives are implemented. The strategic thrusts and goals each ministry has outlined as priority investments are designed to ensure that adequate resources (human, financial, infrastructure and health supplies) are available to support the programmes and implement their strategies.

Malaria control remains a priority intervention area in the sector. MOPHS specifically frames the goal "to reduce malaria incidence to 15 per cent through utilization of cost-effective control measures" as a priority. The office of the Director of Public Health and Sanitation (DPHS) is responsible for the technical operations in the MOPHS. There are seven departments under the supervision of the DPHS:

- Disease Prevention and Control
- Family Health
- Primary Health Care
- Environmental Health
- Disaster Preparedness and Response
- International Health
- Technical Planning and Monitoring

The DOMC is in the Department of Disease Prevention and Control with other disease control programmes, the National Public Health Laboratory Services, Division of Vector Borne and Neglected Diseases, and Disease Surveillance and Response. The Divisions of Child and Adolescent Health and Reproductive Health are under the Department of Family Health, while the Department of Primary Health Care is responsible for the implementation of the Community Strategy and linkage with provincial and district health teams. Figure 1.1 shows the linkage between the National Malaria Control Programme and the national health and development agenda. While the Division of Malaria Control remains in MOPHS, the delivery of malaria interventions at the implementation level involves both MOPHS and MOMS.

Figure 1.1: Linkages across government specific, health sector and national malaria control planning processes



Key:

Vision 2030: The long-term development blueprint for the whole country.

First Medium-Term Plan: First phase rolling plan specifying Government's medium-term benchmarks as it moves towards attainment of Vision 2030.

Health Policy Framework: Overall policy direction for the health sector outlining its long-term objectives and policy imperatives. It ensures that the sector's long-term direction supports Vision 2030.

National Health Sector Strategic Plan: Overall health sector medium-term plan, outlining the strategic objectives that ALL constituent actors in the sector are working towards. Programme/system strategic plans are specified to provide more information on strategic objectives for a given area/need. These are institutionally a part of NHSSP II.

Ministry of Public Health and Sanitation and Ministry of Medical Services strategic plans: Medium-term investment plans outlining the strategic thrusts and priority interventions both ministries will focus on, resource implications, available financing and therefore financing gaps.

National Malaria Strategy: A multisector medium- to long-term investment plan articulating the vision, goals, objectives and strategies guiding malaria control in Kenya.

Annual operational plan (AOP): Operational plan for the health sector outlining the key outputs the sector will focus on delivering during a defined year to enable it to attain the priorities outlined by the respective ministry's strategic plan. Actual activities being implemented are specified in the planning units that make up the Ministry.

Annual Malaria Business Plan: Operational plan for malaria control outlining key outputs that the programme will focus on delivering during a defined year to enable it attain priorities outlined in the National Malaria Strategy.

Performance contracts: Obligations made at the different levels of the sector that will be achieved during the given year. These are derived from the AOP.

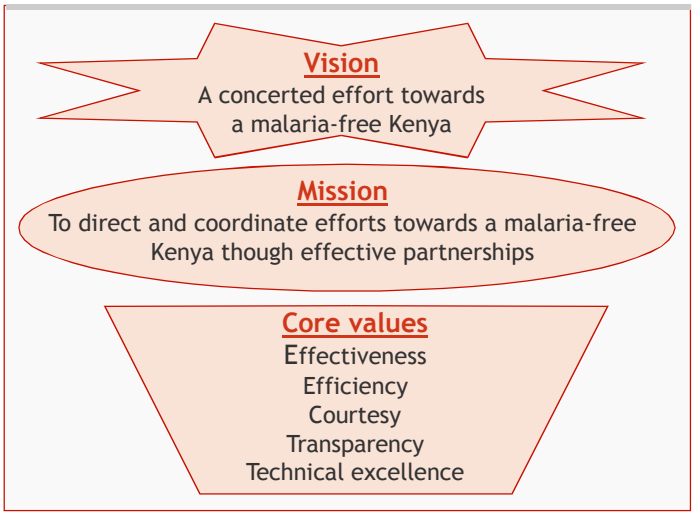
1.2.2 Organization of the Division of Malaria Control

The role of DOMC is to develop and disseminate policy and strategies and keep them up to date. The Division also provides technical assistance to implementing partners; produces and disseminates national guidelines for all components of the national malaria strategy; and monitors and evaluates implementation and impact. It is also charged with building capacity through training and advocating for malaria as a priority disease.

In order to implement activities and to achieve its goals, DOMC works in collaboration with other key divisions in both of the ministries responsible for health.

The vision, mission and values of DOMC are presented in Figure 1.2, while Figure 1.3 illustrates the organizational structure of the division.

Figure 1.2: DOMC vision, mission and core values



1.2.2.1 DOMC Functional Roles

The roles and functions of the various units within the Division are summarized in Table 1.1.

Table 1.1: DOMC roles and functions

Office	Role
Programme Manager	• Provide technical and managerial leadership with the time available to assume individual responsibility for national malaria control activities • Coordinate the development of malaria policies and strategies and their interpretation within the national health policies • Coordinate technical working groups and task forces • Ensure adequate skills mix at programme level to support service delivery
Deputy Programme Manager*/ Partnerships and Resource Mobilization Coordination	• Coordinate partnerships for resource mobilization for malaria control interventions • Develop work plans for the implementation of programmes • Collate and provide performance reports for development partners • Develop proposals to mobilize resources for programmatic activities
Implementation Planning and Coordination	• Plan and implement the National Malaria Strategy • Coordinate with DHMTs/PHMTs through malaria focal points • Coordinate with other implementing partners, e.g., civil society organizations (CSOs) in malaria control • Coordinate the development of malaria business plans and annual operational plans • Coordinate performance reviews and monitoring • Facilitate malaria programme reviews

Continued

Figure 1.3: Division of Malaria Control organizational structure

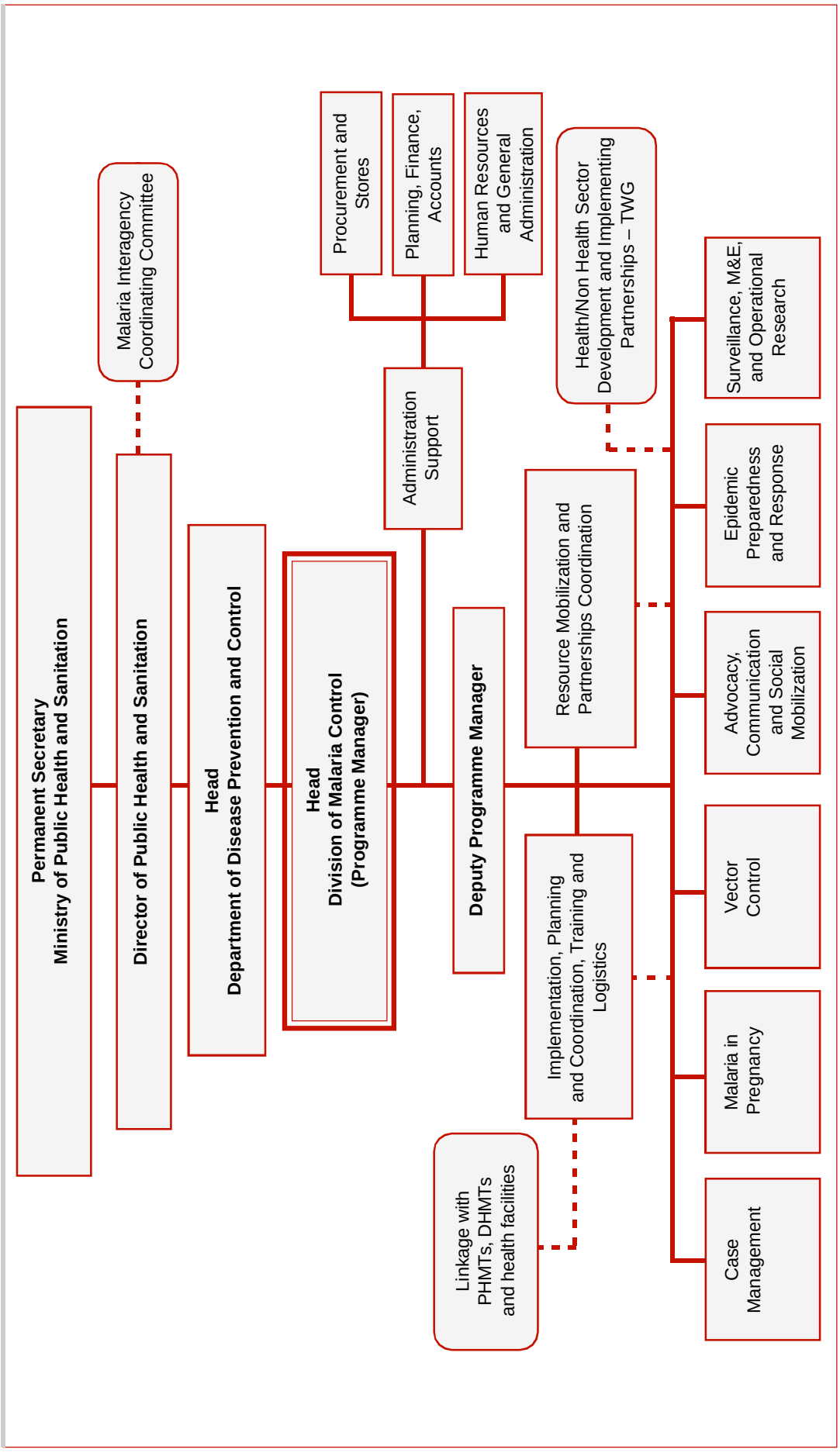


Table 1.1, *continued:* DOMC roles and functions

Office	Role
Training Coordination	• Coordinate trainings (capacity building for health workers) within programme and with other health sector programmes
Logistics Coordination	• Coordinate distribution of malaria commodities • Monitor stock levels both centrally and peripherally
Vector Control	• Define appropriate insecticides and insecticide treated materials for malaria control • Define methods for estimating annual national requirements including buffer stocks • Coordinate vector control working group and subcommittees
Epidemic Preparedness and Response	• Define and monitor malaria early warning systems in epidemic prone areas • Provide technical assistance to districts for planning and response to malaria epidemics • Ensure adequate emergency stocks of insecticides and medicines for prevention of/response to malaria epidemics
Case Management	• Define essential antimalaria medicines and diagnostics • Define methods for estimating national annual requirements • Define quantities of buffer stocks • Develop guidelines and curricula for the pre-service and in-service training of health workers • Develop guidelines for malaria case management • Coordinate case management technical working group and subcommittees
Advocacy & Social Mobilization	• Develop and implement malaria communication strategies in conjunction with Department of Health Promotion • Design and produce appropriate health messages to create demand for and increase uptake of malaria interventions • Advocate for malaria and malaria control among stakeholders • Coordinate advocacy technical working group and sub-committees
Malaria in Pregnancy	• Provide technical guidance for the implementation of activities for the prevention and treatment of malaria in pregnancy • Coordinate malaria in pregnancy technical working group and subcommittees
Surveillance, Monitoring and Evaluation, and Operational Research (SM&EDR)	• Define indicators for malaria and develop monitoring and evaluation plans • Maintain linkages with HMIS to collect and collate malaria data • Collate other malaria data through surveys, sentinel data • Monitor antimalarial and insecticide resistance • Coordinate malaria surveillance methods with Department of Disease Surveillance • Prepare programme performance reports, quarterly and annual reports • Define operational research agenda and implementation, including translation of research to policy • Coordinate SM&EOR technical working group and subcommittees

*Deputy Programme Manager may also be any officer in charge of a technical area.

1.2.2.2 Functional Relations with Other Programmes

Most disease prevention and control programmes addressing malaria-related MDGs are in the same department as the DOMC. Other programmes that DOMC works with are within the departments of Family Health, Environmental Health, and Health Promotion and are listed in the roles matrix (Annex A). These programmes serve as malaria implementing partners and will be supported to fulfil their malaria control roles as articulated in Section 3 under the governance of the multisector approach to malaria control.

The health vision of Vision 2030

1. Reduce under-5 mortality from 120 to 33 per 1,000.
2. Reduce the maternal mortality ratio (MMR) from 410 to 147 per 100,000 live births.
3. Increase the proportion of birth deliveries by skilled personnel from the current 42% to 95%.
4. Increase the proportion of immunized children below one year to 95%, up from 71%.
5. Reduce the number of cases of TB from 888 to 444 per 100,000 persons.
6. ***Reduce the proportion of inpatient malaria fatality to 3%***
7. Reduce the national adult HIV prevalence rate to less than 2%.

1.2.3 Health Policies

The Kenya Vision 2030 goal for the health sector is to provide equitable and affordable quality health services to all Kenyans. The Vision also aims at restructuring the health care delivery system to shift the emphasis from curative to promotive and preventive health care. In addition, measures are being taken to control environmental threats to health as part of the effort to lower the nation's disease burden (Kenya Vision 2030 First Medium-Term Review). The policies of the health ministries are included in the second National Health Sector Strategic Plan (NHSSP II 2005–2010), which has as its goal to "reduce health inequalities and to reverse the downward trend in health-related outcome and impact indicators". The mission of the strategic plan is to promote and participate in the provision of integrated and high quality promotive, preventive, curative and rehabilitative health care services to all Kenyans.

Through the Kenya Essential Package for Health (KEPH) introduced with the strategy (MOH, 2007), NHSSP II intended to achieve the following objectives: Increase equitable access to health services; improve the quality and responsiveness of services in the sector; improve the efficiency and effectiveness of service delivery; enhance the regulatory capacity of the Ministry of Health; foster partnerships in improving health and delivering services; and improve the financing of the health sector. NHSSP II shifted the focus of health care from the treatment of disease to the promotion of individual health through the provision of services to six distinct life cycle cohorts at six levels of the health care system defined by KEPH.[1] An important introduction was the focus on the community level, which has a specific strategy for building community participation in the health care system. Indeed, one of the key priorities for MOPHS is the roll-out of the Community Strategy (MOH, 2006).

1.2.4 Health Systems Analysis

Table 1.2 shows the number of hospitals and health facilities per 100,000 population in each of the country's provinces. Hospitals in this case include all public, private (for-profit and non-profit) and sub district hospitals, while health facilities include all

[1] The KEPH life-cycle cohorts are pregnancy and the newborn (up to 2 weeks of age); early childhood (2 weeks to 5 years); late childhood (6–12 years); adolescence and youth (13–24 years); adulthood (25–59 years); and elderly (60+ years). KEPH service delivery levels are: Level 1: Community (village/households/families/individuals); Level 2: Dispensaries/clinics; Level 3: Health centres, maternities, nursing homes; Level 4: Primary hospitals (district and subdistrict hospitals); Level 5: Secondary hospitals (provincial hospitals); and Level 6: Tertiary hospitals (national hospitals).

public and private (for-profit and non-profit) health centres, dispensaries, clinics, HIV voluntary counselling and testing sites, and nursing homes.

Table 1.2: Number of hospitals and health facilities per 100,000 population by province

Province	Population	Total number of hospitals	Hospitals per 100,000 population	Other health facilities	Health facilities per 100,000 population
Nyanza	5,719,977	55	1.0	481	8.4
Rift Valley	8,115,768	68	0.8	1,175	14.5
Eastern	4,498,324	49	1.1	845	18.8
Western	3,986,340	26	0.7	379	9.5
Central	4,003,742	41	1.0	900	22.5
Coast	2,891,741	28	1.0	568	19.6
North Eastern	1,148,262	10	0.9	136	11.8
Nairobi	2,721,933	23	0.8	386	14.2
National	33,086,087	300	0.9	4,870	14.7

Population based on population census projections for 2004.
Source: Service Availability Mapping WHO/MOH Kenya 2007.

1.2.5 Health Map

Table 1.3 shows the national averages for the number of health care professionals in various disciplines per 100,000 population. Densities of personnel tend to be higher in the capital, Nairobi, where about 29 doctors can be found per 100,000 people. The densities of clinical officers and nurses in Nairobi are similarly higher than the national averages presented above (17 doctors and 120 nurses per 100,000 people, respectively.). The density of all human resources for health in the capital is 166 per 100,000, while the rest of the country has about 69 health care workers per 100,000 people. Figures 1.4, 1.5 and 1.6 illustrate the distribution per 100,000 population of doctors, nurses and laboratory technicians, respectively.

Table 1.3: Human resources for health per 100,000 population

Cadre	Mean number per 100,000 population	Range among districts	
		Minimum	Maximum
Doctors	3.6	0	28.6
Clinical officers	8.7	1.8	24.3
Nurses	61.1	9.1	149
Pharmacists	7	1.2	34.3
Laboratory technicians	1.6	0	5.9
Health records personnel and information officers	1.5	0.3	5.3

Source: Service Availability Mapping WHO/MOH Kenya 2007.

1.2.6 Human Resources Distribution

Inadequate and inequitable distribution of human resources for health (HRH) is hampering health care delivery and ultimately health outcomes. Overall, the health sector is experiencing a shortage of health workers. Estimates show that there are approximately 17 doctors and 120 nurses per 100,000 people in Kenya. In addition to insufficient human resources, the health sector also suffers from a mal-distribution of the available health personnel, with some rural dispensaries having an insufficient number of personnel. According to a human resource study conducted in 2004, the number of health personnel at the dispensary level is inadequate, with 50 per cent of the dispensaries managed by support staff or nurse. This situation calls for the harmonization of staffing needs and deployment in order to address equity in the distribution of health care workers.

Figure 1.4: Number of doctors per 100,000 population by district

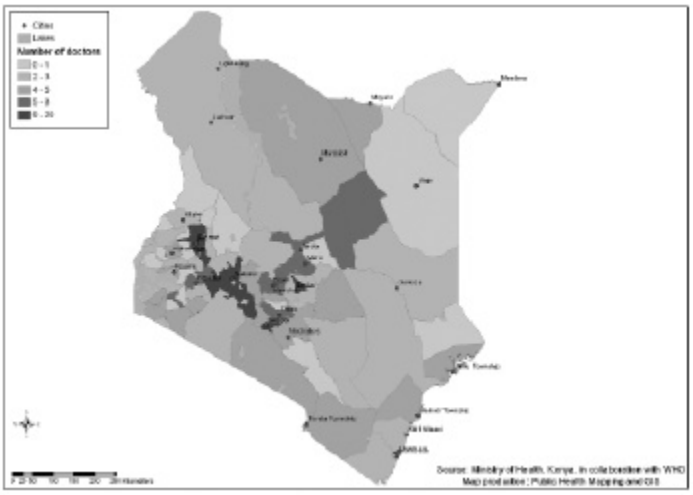


Figure 1.5: Number of nurses per 100,000 population by district

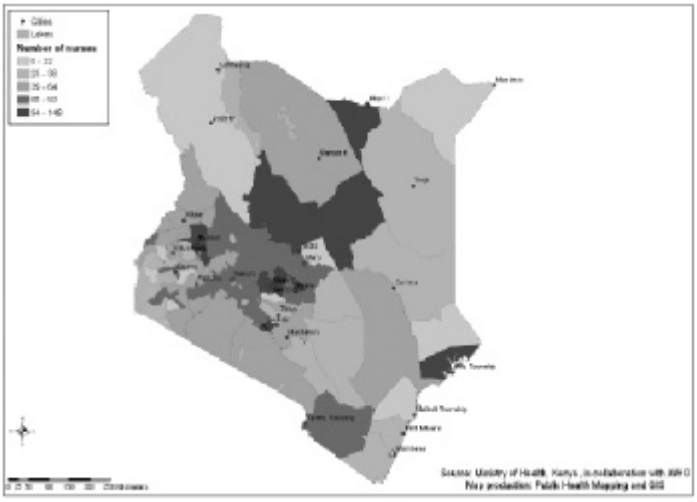
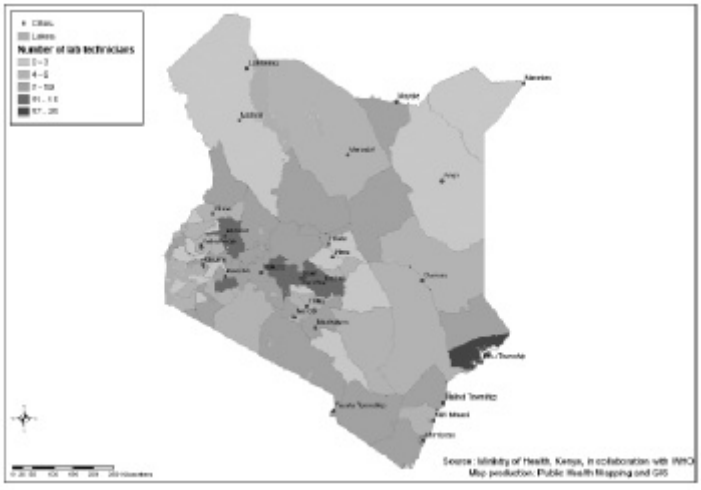


Figure 1.6: Number of laboratory technicians per 100,000 population by district



The Millennium Development Goals
1. Eradicate extreme poverty and hunger.
2. Achieve universal primary education.
3. Promote gender equality and empower women.
4. Reduce child mortality.
5. Improve maternal health.
6. ***Combat HIV/AIDS, malaria and other diseases.***
7. Ensure environmental sustainability.
8. Develop a global partnership for development.

1.2.7 State Budget Allocation to the Health Sector

Kenya's health services have improved considerably in the last five years. This has been due to an increase in budgetary allocations of financial resources as well as better governance and management of health delivery systems. Recurrent and development funding for health services increased from 7 per cent in 2003/04, to 7.6 per cent in 2006/07, but fell to 6.4 per cent in 2007/08 despite an absolute increase in expenditure. The per capita expenditure on health also rose from US$6.1 in 2002/03 to US$13.8 in 2007/08.

Expenditure is still skewed towards curative services, however. In 2006/07, curative services accounted for 52 per cent of recurrent expenditure, while preventive and promotive care were 5 per cent. These levels are below the WHO recommendation that developing countries spend an average of US$34 per capita on health care, and the Abuja commitment of 15 per cent of GDP on the provision of health care services.

1.2.8 Priority Programmes and Their Synergy with Malaria Control

In order to increase impact on all the malaria-related targets of the MDGs, DOMC has taken the lead in integrating all relevant activities of programmes that address these targets (Table 1.4). At the national level, DOMC collaborates with the divisions of Reproductive Health (DRH), Child and Adolescent Health (DCAH), and Vaccines and Immunization (DVI), the Department of Disease Surveillance and Response (DDSR), Health Management Information Systems (HMIS), and the Pharmacy and Poisons Board (PPB) to enhance integration of relevant health services.

The following are ongoing collaborative activities with selected health programmes:

- ***DRH:*** The DOMC collaborates with DRH to maximize the impact of malaria control in the attainment of MDG 5 by supporting activities for the prevention and treatment of malaria in pregnancy including intermittent protective treatment (IPTp) and distribution of insecticide treated nets (ITNs) to pregnant women through antenatal clinics (ANC). In 2005, DOMC collaborated with DRH on a pilot project to strengthen health systems through the implementation of focused antenatal care (FANC) and malaria in pregnancy (MIP) initiatives.
- ***DCAH:*** The DOMC collaborates with the DCAH in training health workers on integrated management of childhood illnesses (IMCI) in order to maximize the impact of malaria control in attaining MDG 4. Both divisions also pooled resources to conduct the 2006 health facility survey. Together with the Ministry of Education, the two divisions developed the School Health Policy, launched in 2009, to address malaria and nutrition and other preventable diseases. Every year, the DOMC collaborates with DCAH during the child health campaigns (*malezi bora*) during which distribution of long lasting insecticidal nets (LLINs) to children less than five years takes place.
- ***DVI:*** The DOMC collaborates with DVI in distribution of LLINs to infants and children under five years of age through integrated campaigns and child welfare clinics.
- ***DDSR:*** DOMC supported the DDSR to implement integrated disease surveillance and response (IDSR) systems in areas prone to malaria epidemics.
- ***HMIS:*** DOMC provided financial and technical support to HMIS to develop and harmonize data collection tools to improve routine data reporting for malaria.

Table 1.4: Millennium Development Goals, targets and malaria-related indicators

Goals	Targets	Malaria-related indicators	Programmes to integrate or collaborate with
1. Eradicate extreme poverty and hunger	2. Halve between 1990 and 2015, the proportion of people who suffer from hunger	Prevalence of underweight children under five years of age	Nutrition; DCH; DVI; Ministry of Education; Ministry of Agriculture
4. Reduce child mortality	5. Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate	Under-five mortality rate Infant mortality rate	DCH; DVI
5. Improve maternal mortality	6. Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio	Maternal mortality ratio	DRH
6. Combat HIV/AIDS, malaria and other diseases	8. Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases	Prevalence and death rates associated with malaria Proportion of population in malaria-risk areas using effective malaria prevention and treatment measures	DRH; DCH; DVBD; DDSR; HMIS; MOMS; Ministry of Local Government; Ministry of Education; Ministry of Tourism; Office of the President
8. Develop a global partnership for development	18. In cooperation with the private sector, make available the benefits of new technologies, especially information and technology	Proportion of population with access to affordable essential drugs on a sustainable basis	Department of Pharmacy; KEMSA; Pharmacy and Poisons Board

- ***DHP:*** The DOMC collaborates with DHP in the development of malaria communications strategies, materials and messages for advocacy and national campaigns.
- ***PPB:*** The DOMC collaborates with the PPB to ensure effective regulation and market control of malaria medicines including post market surveillance and pharmacovigilance. DOMC and PPB jointly undertook a nationwide pre-ACT survey of antimalarials in Kenya in 2006, which pioneered a collaborative approach in strengthening the link between medicines regulation and disease control strategies, and has provided a model for other programmes. DOMC actively contributed to the development of the national pharmacovigilance system and guidelines. PPB as the drug regulatory authority has an oversight role in the marketing of subsidized ACTs in the private sector.

1.3 Overview of the Partnership Framework

The DOMC, through the Ministry of Public Health and Sanitation, has developed effective partnerships in the implementation of malaria control interventions at all levels. These range from the national level through provinces and districts, to the community. Provincial and district management structures are responsible for managing service delivery at their respective levels.

1.3.1 National Level Partnerships

The major partners currently involved in malaria control in Kenya are the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM); British Department for International Development (DFID); Population Services International (PSI); United Nations Children's Fund (UNICEF); US President's Malaria Initiative (PMI); United States Agency for International Development (USAID); and the World Health Organization (WHO).

There is a vibrant private sector in Kenya especially in the urban areas, although its contribution is not directly quantified. For example, it is estimated that 40 per cent of malaria treatment services are accessed through the private sector.

At the national level, the country coordination mechanism for malaria control is the Malaria Interagency Coordinating Committee (MICC) with membership from

development partners, UN agencies, civil society organizations, research and academic institutions, Ministry of Health departments (national and provincial), and other ministries (Education, Agriculture, Finance and Information). The MICC has supported the implementation of the malaria strategy by providing guidance on policies, strategies and priority areas of intervention, advocating for resources for malaria, approving malaria work plans, and reviewing the output of technical working groups and subcommittees. The MICC also identifies problems and obstacles to the implementation of malaria control activities and recommends solutions. The various technical working groups incorporate membership from diverse stakeholders, including the private sector and civil society organizations.

Since 1996 there has been ongoing collaboration with neighbouring countries on common issues, for example the testing and monitoring of malaria drug sensitivity through the East African Rollback Malaria Network (EARN) and East African Network for Monitoring Antimalarial Treatments (EANMAT). This collaboration contributed to the malaria treatment policy changes of 1998 and 2004.

1.3.2 Provincial and District Level Partnerships

Health sector reform was the basis of the first Health Sector Strategic Plan (HSSP 1999–2004), with major emphasis on decentralization, integration and community participation. The plan defined the functions the various levels of the health system and the basic health services package. Unfortunately, not much was achieved in the decentralization of malaria control services during the life of the HSSP. NHSSP II deepened health sector reform by providing for a strong sector-wide partnership coordination mechanism for each level of the health system: provincial health stakeholders forum, district health stakeholders forum, divisional health stakeholders forum and community health committees.

Many districts have implemented the quarterly stakeholders forum meetings, with membership drawn from line ministries (agriculture, water, education, social services and provincial administration), civil society organizations and the private sector. To carry out the commitment to decentralize malaria control operations, malaria control partnerships and coordination at the subnational levels will be integrated into and drive the sector-wide partnerships. The main objective of the partnership at this level is to empower the provincial and district health teams to establish clear systems for malaria control that are adapted to the epidemiology of malaria in their respective areas. The provinces and districts will be expected to build on existing structures in close association with other government departments. DOMC, PHMTs and DHMTs will work to set up and maintain an optimum pool of resource personnel for capacity building at lower levels, including the community.

1.3.3 Community Level Partnerships

One of the aims of NHSSP II is the strengthening of structures to enhance community participation in matters related to their own health care - including malaria control. Virtually all elements of the community are incorporated into the concept of level 1 of the health care system: local authorities and leaders, peripheral health workers, drug shop owners, community groups, religious organizations, and community-based organizations (CBOs) engaged in the planning and implementation of health-related activities. Community members are also actively involved in the running of level 2, 3 and 4 health facilities through their membership in the various facility health committees. Community health forums incorporating CBOs, health workers and leaders meet on an ad hoc basis to discuss and implement various health related issues including malaria prevention and treatment.

2. Malaria in Kenya

Data from a variety of surveys and operational research show declines in malaria parasite prevalence, malaria trends, vector densities and other entomological indexes over the last ten years. Nevertheless, malaria still accounts for up to 30 per cent of outpatient attendance and 19 per cent of admissions to health facilities, and is a leading cause of death in children under five. Thus a better understanding of the scope and scale of malaria and malaria control efforts in Kenya is critical to efforts to improve control of the disease. This section looks at malaria epidemiology, achievements in control, financing arrangements and other significant issues.

2.1 Epidemiology

All four species of human *Plasmodium* occur in Kenya: *P. falciparum*, *P. malariae*, *P. ovale* and *P. vivax*. *P. falciparum*, which causes the severest form of the disease, accounts for 98 per cent of all malaria infections. The major malaria vectors in Kenya are members of the *Anopheles gambiae* complex and *An. funestus*.

2.1.1 Dynamics of Malaria Transmission

Kenya has four malaria epidemiological zones, with diversity in risk determined largely by altitude, rainfall patterns and temperature. The zones are:

- ***Endemic:*** Areas of stable malaria have altitudes ranging from 0 to 1,300 metres around Lake Victoria in western Kenya and in the coastal regions. Rainfall, temperature and humidity are the determinants of the perennial transmission of malaria. The vector life cycle is usually short and survival rates are high because of the suitable climatic conditions. Transmission is intense throughout the year, with annual entomological inoculation rates of 30–100.
- ***Seasonal transmission:*** Arid and semi-arid areas of northern and southeastern parts of the country experience short periods of intense malaria transmission during the rainfall seasons.

Rainfall, temperature and humidity are the determinants of the perennial transmission of malaria.

Temperatures are usually high and water pools created during the rainy season provide breeding sites for the malaria vectors. Extreme climatic conditions like the *El Niño* southern oscillation lead to flooding in these areas, resulting in epidemic outbreaks with high morbidity rates owing to the low immune status of the population.

- ***Epidemic prone areas of western highlands of Kenya:*** Malaria transmission in the western highlands of Kenya is seasonal, with considerable year-to-year variation. Epidemics are experienced when climatic conditions favour sustainability of minimum temperatures around 18°C. This increase in minimum temperatures during the long rains favours and sustains vector breeding, resulting in increased intensity of malaria transmission. The whole population is vulnerable and case fatality rates during an epidemic can be up to ten times greater than those experienced in regions where malaria occurs regularly.
- ***Low risk malaria areas:*** This zone covers the central highlands of Kenya including Nairobi. The temperatures are usually too low to allow completion of the sporogonic cycle of the malaria parasite in the vector. However, the increasing temperatures and changes in the hydrological cycle associated with climate change are likely to increase the areas suitable for malaria vector breeding with the introduction of malaria transmission in areas where it had not existed before.

Table 2.1 shows the projections of Kenya's vulnerable populations at risk of malaria by epidemiological zones.

Table 2.1: Populations at risk of malaria in Kenya

Epidemiological zone	Total population projection for 2009	Pregnant women	Children <1 year
Endemic	11,212,645	504,569	448,506
Seasonal/Arid	8,375,922	376,916	335,037
Highland epidemic prone	8,007,718	360,347	320,309
Low risk	11,826,978	532,214	473,079
Total	**39,423,263**	**1,774,047**	**1,576,931**

2.1.2 Efficacy of Antimalaria Medicines

Kenya adopted the artemisinin-based combination treatment (ACT) artemether-lumefantrine (AL) as the first-line treatment for uncomplicated malaria following the precipitous decline in the efficacy of SP. AL was rolled out in 2006 with efficacy at baseline being 96 per cent; in 2008 the efficacy was still 96 per cent. Monitoring of efficacy is ongoing.

2.1.3 Resistance to Insecticides

Routine monitoring of the susceptibility of malaria vectors to insecticides used for ITNs and indoor residual spraying (IRS) is important for the judicious use of the insecticides. Although an increase in frequency of the knockdown resistance (*kdr*) mutation has been found in areas of high ITN use in western Kenya, there is no evidence of phenotypic resistance to insecticides recommended by WHO for ITNs and IRS. The spread of this mutation and its impact on insecticide resistance continues to be monitored (KEMRI/CDC Entomological survey report 2008).

2.2 Achievements in Malaria Control

Over the period of the NMS 2001–2010, DOMC has made significant achievements in case management. Key to this was the successful roll-out of the new treatment policy, which was launched by the Head of State in September 2006.

2.2.1 Provision of Prompt and Effective Treatment

In conjunction with the countrywide roll-out of the new treatment policy, treatment guidelines and job aids were produced in 2006 and revised in 2008. Training curricula and manuals for health workers have been produced and more than 12,000 health workers trained countrywide on case management with AL. A grant from the Global Fund Round 4 made it possible to recruit 500 new health workers in 2006. These workers were formally absorbed into the public service in 2009.

2.2.2 Prevention of Malaria during Pregnancy

The proportion of pregnant women using ITNs rose from 4.4 per cent in 2003 to 39.7 per cent in 2007. Moreover, the proportion of women who received at least two doses of IPT rose from 4 per cent in 2002 to 24.5 per cent in 2006 in sentinel districts and to 13 per cent in all malaria endemic districts in 2007.

2.2.3 Vector Control using Insecticide Treated Nets

Fifteen million ITNs and LLINs were distributed between 2001 and 2009. ITN use by children under five years rose from 4.6 per cent in 2003 to 50.2 per cent in 2006 after a free mass ITN distribution targeting 3.4 million children under five. The large-scale distribution corrected the inequity against the poor in ITN ownership. Even so, the current ITN ownership of 0.8 nets per household in Kenya is still far from universal access (defined as 2 nets per household).

2.2.4 Epidemic Preparedness and Response

Indoor residual spraying (IRS) has been used to prevent the occurrence of malaria epidemics in the western highlands. The proportion of targeted structures sprayed rose from 27.1 per cent in 2005 to 63 per cent in 2008. No epidemics have occurred since 2005, but monitoring and evaluation of the impact of targeted IRS in epidemic prone district is still weak.

2.2.5 Information, Education and Behaviour Change Communication (IEC/BCC)

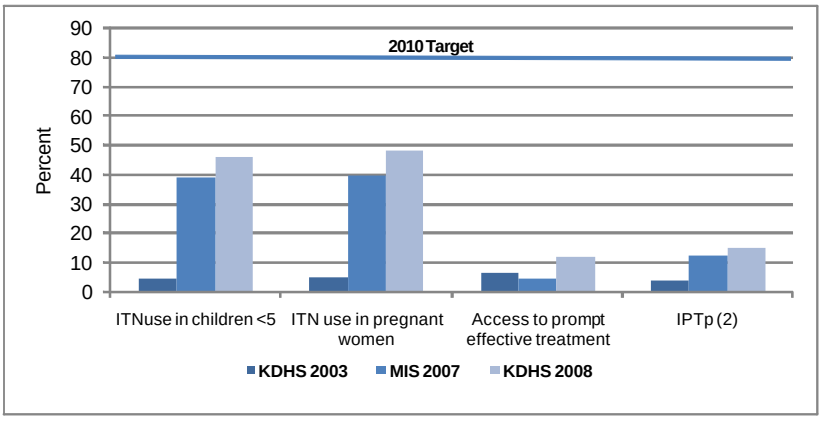
General knowledge in Kenya about malaria transmission is currently at 95 per cent, but only 10 per cent know that malaria causes anaemia and neonatal and maternal death. Only 40 per cent of service providers are able to accurately state the effects of malaria in pregnancy (PSI, 2006). One major achievement under BCC was the development of a malaria communication strategy in 2005.

2.2.6 Monitoring and Evaluation (M&E)

The DOMC undertook the first Malaria Indicator Survey (MIS) in 2007 to provide comprehensive information on the progress towards targets for malaria control (DOMC et al.,

2009). Through national and sentinel surveys, the division has been able to generate information on performance towards meeting the Abuja Targets and the MDGs, as well as other targets within the annual operational plans for the ministry (see Figure 2.1).

Figure 2.1: Progress towards RBM targets for 2010



2.3 Malaria Morbidity in Kenya

Clinically diagnosed malaria is responsible for 30 per cent of outpatient consultations, 15 per cent of hospital admissions and 3–5 per cent of inpatient deaths. In 2007, there were 9.2 million reported clinically diagnosed malaria cases in the public health sector (HMIS 2008). Inpatient data from HMIS show that malaria is responsible for about one-fifth of admissions nationally. Between 2000 and 2008, however, the completeness of HMIS inpatient data has consistently been less than 50 per cent, making it difficult to show country trends in inpatient morbidity and mortality due to malaria. Data from Siaya District Hospital in Nyanza Province, which is a malaria endemic area, show that between 2002 and 2008, up to half (40–50 per cent) of patients admitted had malaria parasites, while malaria accounted for just under 3 per cent of inpatient mortality. The malaria case fatality rate at the hospital dropped to 2.5 per cent in 2008, from 5.6 per cent in 2003.

The expansion of coverage of parasite and vector control interventions resulted in a decline in the malaria burden, its severity and transmission patterns. There is documented decline of 44 per cent in under-five mortality in sentinel districts, attributed to the use of insecticide treated nets, while at the Kenyan coast, a 28–63 per cent decline in paediatric malaria admissions was reported between 1992 and 2006 (O'Meara, Bon et al., 2008).

Malaria admissions in sentinel districts declined by 56 per cent during the 1999–2006 period, accompanied by a shift in the mean age of clinical cases from 2.9 years in 1992 to 4.9 years in 2006 and a decline in the rate of slide positive admissions from 22.6 per 1,000 people at risk in 2004 to less than 2 per 1,000 in Kilifi district of Coast Province (O'Meara, Mwangi et al., 2008). These data are confirmed by results from a demographic surveillance site in western Kenya showing higher parasitaemia among the 5–15-year-old age group, at 42 per cent, compared with 22 per cent in children under five years and 18 per cent in adults.

Expanded coverage of parasite and vector control interventions over the life of the 2000–2010 NMS yielded a decline in the malaria burden, its severity and transmission patterns: under-five mortality in sentinel districts declined by 44 per cent.

Malaria parasite prevalence varies across the country among children under five years of

age: 17 per cent in endemic zones, 1.4 per cent in areas of seasonal malaria transmission (arid and semi-arid lowlands), 1 per cent in epidemic prone areas and 0.4 per cent in malaria-free low risk transmission areas (DOMC et al., 2009).

2.4 Financing Malaria Control

Health sector financing in Kenya has not yet reached the Abuja target of 15 per cent of the overall country budget: In 2007/08 the government allocation to the health sector was 6.4 per cent of the overall budget. At this level of investment there is concern that the country may not attain the health-related MDGs by 2015. That notwithstanding, bilateral and multilateral partners contribute significantly to the overall health budget and malaria is one of the beneficiaries of this support. In the year 2008/09 the budget allocation to malaria control was approx 4.78 per cent of the MOPHS budget. Malaria control is mainly supported under the development budget, with the bulk of the funds coming from the Global Fund. Among other partners providing support are DFID, USAID, WHO and UNICEF.

On an annual basis the DOMC develops a business plan that outlines the resources available from all partners and the funding gaps. The malaria business plan funding was 61 per cent in FY 2006/07, 45 per cent in 2007/08 and 67 per cent in 2008/09. To date the DOMC is dependent on donor funding for its operations. The contribution of the Government towards malaria control includes support for the health infrastructure, some health commodities including medicines and the salaries of health workers engaged directly as part of the overall service delivery mandate of the health sector.

2.5 Equity and Gender Issues in Malaria Control

Many health inequalities exist – between rural and urban populations, between districts and provinces, and between the genders. Demographic considerations such as age and gender as well as socio-cultural and economic factors determine access to and utilization of health services along with the geographic features (distance, natural barriers and roads).

This strategy considers the needs of vulnerable groups (including pregnant women and their infants and, increasingly, older children and the HIV infected), along with those populations in the endemic areas of seasonal malaria prone to epidemics who are at greater risk of malaria because of regional variations in malaria epidemiology. All of these groups are targeted with appropriate proven interventions, in line with NHSSP II and the KEPH, which promote healthy lifestyles at six defined stages in the human life cycle. Malaria control interventions have been aligned with the special needs of specific cohorts under this approach.

2.5.1 Equity in Access across Economic Strata

The 2009–2017 NMS will target interventions based on epidemiology and malaria risk and on the need to achieve vertical equity. All malaria control interventions, irrespective of the malaria risk area, will be delivered free of charge to patients and populations at risk to ensure that cost does not become an impediment to access. Achieving equity will also involve collaboration with other health programmes in strengthening both health care systems and community systems. The MIS 2007 shows that free distribution of LLINs reduced the disparity in ITN and LLIN ownership and use across wealth quintiles.

Men will be included in health promotion activities in order to increase their understanding of the risks for both the pregnant woman and the unborn baby.

There is need to continue this in order to correct the disparity in access to malaria control interventions.

The gap in any net ownership between the rich and the poor in Kenya is more than 26 per cent in favour of the rich (Table 2.2). This gap narrows to about 15 per cent in LLIN ownership. There is no gap between rich and poor pregnant women when it comes to LLIN use, whereas a gap of more than 15 per cent exists in any net usage in this population group. Among children less than five years of age, the gap in the use of any net is more than 20 per cent and the gap in LLIN use is about 15 per cent. While inequities in any net and LLIN use among children less than five years and pregnant women are acknowledged, this gap is significantly reduced for LLIN use. The reduction mainly results from the free distribution of LLINs to children under five years of age and pregnant women.

Table 2.2: Economic inequity in LLIN/ITN ownership and use in Kenya

Wealth index	Household ownership		Net use among children less than 5 years		Net use among pregnant women	
	% of house-holds with at least 1 net	% of house-holds with at least 1 ITN/LLIN	% of U5 who slept under any mosquito net	% of U5 who slept under an ITN/LLIN	% PW who slept under any net	% PW who slept under an ITN/LLIN
Lowest	46.8	35.5	39.2	29.1	34.7	34.4
Highest	72.3	50.9	61.6	44.5	50.4	35.9

There is also inequity in access to antimalaria medicines between the highest and lowest wealth quintiles (Table 2.3). While 29 per cent of in the highest quintile took an antimalarial for fever, only 17 per cent in the lowest did so. This implies better economic access to malaria medicines for those in the highest wealth quintile. On the other hand, access to the first-line antimalarial (AL) was relatively better for the lowest than for the highest wealth quintile, largely because of the policy of free treatment for malaria in government and faith-based health facilities.

Table 2.3: Economic inequity in access to antimalarials

Wealth index	% of children with fever who took an antimalarial	% of children with fever who took an antimalarial the same/next day	% of children with fever who sought treatment from a health worker the same or next day
Lowest	17.3	10.6 (Proportion who took ACT = 38.1%)	74.2
Highest	29.1	21.3 (Proportion who took ACT = 26.3%)	70.6

2.5.2 Equity in Access across Age Groups

Children aged 5–15 years have the highest prevalence of malaria in malaria endemic regions. This age group is also the least covered with LLINs, since the distribution campaigns have targeted pregnant women and young children. The use of LLINs, especially in the younger age group, has had a major impact on disease prevalence, morbidity and mortality. Achieving equity in LLIN ownership and use in the 5–15 years age group will be addressed through universal coverage with LLIN and other malaria interventions, as well as malaria activities through the school health programme.

2.5.3 Gender Issues

> In accordance with international guidelines, the GOK is committed to ensure that all pregnant women in high malaria transmission areas have access to a free ITN, at least three free IPT doses, and appropriate case management for malaria and anaemia.

The NMS has also taken gender into consideration by including activities to strengthen malaria control and prevention during pregnancy. These have been integrated into core prevention and treatment interventions. Malaria BCC and health promotion activities will include a focus on women's decision making roles within the household in order to reduce barriers to access of services. Men will also be included in health promotion activities in order to increase their understanding of the risks for both the pregnant women and the foetus and to encourage the uptake of services. Health care workers and implementing partners including civil society organizations (CSOs) will be sensitized on gender issues. Gender balance in committee formation and trainee selection will be encouraged at all levels of service delivery.

2.5.4 People Living with HIV/AIDS

The DOMC will continue to work closely with the Total War against HIV/AIDS (TOWA) programme and efforts under the World Bank's Malaria Booster Programme to ensure that all persons living with HIV/AIDS (PLWHAs) in malaria risk areas are given free LLINs and have access to prompt, effective antimalaria treatment. Other contributions to malaria control especially by CBOs providing have been aligned to this focus.

2.6 Challenges

Achievements in malaria control in Kenya have not been without challenges, as identified by the 2009 Malaria Programme Review. The challenges range across intervention areas, from vector control and case management to IPTp, and include commodity management, financing and overall programme management. These are described below.

2.6.1 Vector Control

Net coverage and use have not reached the required targets, mostly because of resource constraints. There is also significant disparity between ownership and use of LLINs, although this is being addressed through IEC/BCC campaigns on net use.

2.6.2 Case Management

While 70 per cent of children with fever seek treatment from a health facility/health care provider, most do so later than 24 hours after the onset of symptoms. Consequently, access to prompt effective treatment with ACTs is only 15 per cent. The use of non-recommended therapies for malaria such as chloroquine and amodiaquine is still widespread, especially in the private sector where ACTs are more costly. According to the 2007 MIS, only 29 per cent of patients with fever received the recommended ACT.

There is therefore need to enforce the policy on ACT use, as well as to educate communities especially in endemic and epidemic prone areas on the importance of seeking treatment promptly (within 24 hours of the onset of fever). Affordable ACTs should be made available in the private sector and the informal sector.

The general lack of parasitological diagnostic services in the health sector makes monitoring of malaria trends and rational drug use difficult. With the decline in malaria prevalence, there is need to implement the policy of diagnosis-based treatment, but this requires strengthening of the health care system.

Monitoring the quality of case management for malaria and support supervision of health workers also needs to be improved.

2.6.3 Prevention of Malaria in Pregnancy

The uptake of IPTp remains low; the 2007 MIS reported that only 13 per cent of pregnant women received two doses of SP. This is despite high antenatal clinic attendance. The implementation of this strategy will be evaluated in order to address specific bottlenecks.

2.6.4 Procurement and Supplies Management of Malaria Commodities

Stock control and logistics management for malaria commodities often result in stock outs especially at end use facilities. There is need to improve the reporting and feedback on usage and the efficiency of the distribution system.

2.6.5 Financing and Budget

The malaria programme is dependent on donor support for most of its operations and for procurement of commodities. This source of financing is at times unstable and unpredictable, resulting in funding gaps that impede the implementation of malaria control interventions particularly those that are time bound like procurement of medicines and IRS.

2.6.6 Programme Management and Coordination

A shortage of health workers across all cadres, compounded by skewed distribution, affects general service delivery including malaria control interventions. Although malaria control activities are integrated at district level where implementation occurs, supervision of malaria specific activities is deficient because of the lack of malaria focal persons and the necessary logistical support. The malaria control component in pre-service training curricula for all cadres of health workers needs to be updated and strengthened.

Data from Siaya District Hospital in Nyanza Province, which is a malaria endemic area, show that between 2002 and 2008, up to half (40–50 per cent) of patients admitted had malaria parasites, while malaria accounted for just under 3 per cent of inpatient mortality. The malaria case fatality rate at the hospital dropped to 2.5 per cent in 2008, from 5.6 per cent in 2003.

2.6.7 Monitoring and Evaluation

Monitoring of trends in malaria control is hampered by lack of complete data to compare outputs, outcomes and impacts of the implemented interventions. There is need to strengthen HMIS to support malaria M&E with complete and timely reporting for morbidity and mortality indicators.

2.7 Background to the National Malaria Strategy

Eliminating malaria is possible, given current technologies and adequate funding, through strategic investments aimed in the medium term at expanding malaria-free areas.

Kenya's overall development framework is guided by Kenya Vision 2030, a long-term policy that aims to create a globally competitive and prosperous country with a high quality of life by 2030 (MOPHS, 2009). Vision 2030 is implemented through five-year medium-term plans (MTP). The current medium-term plan is for the period from July 2008 to June 2012. All sector and subsector plans are expected to align with the MTP. Thus the National Malaria Strategy covers July 2009 to June 2012, encompassing the last year of NHSSP II and the remaining three years of the current MTP. Subsequently, a midterm review will be conducted aimed at refocusing the NMS according to NHSSP II review findings. The final five years of the NMS (2012–2017) will be aligned to the next MTP.

A multi-stakeholder, multisector participatory approach characterized the development of this strategy. Under DOMC leadership, the following steps were taken:

1. Constitution of a malaria programme review task force by the MICC consisting of representatives of various stakeholders. The terms of reference and membership of the task force is attached as Annex B.
2. Phase 1 of the malaria programme review comprising thematic reviews of eight components of the malaria control programme by six thematic review teams whose memberships were drawn from all the stakeholders. The terms of reference and membership of the various thematic review teams are seen in Annex C.
3. Development of a draft strategy by a team drawn from stakeholder organizations. Membership of the drafting team is seen in Annex D.
4. A stakeholders meeting to review, update and develop the first draft of the strategy. At the meeting, stakeholders adopted a matrix of malaria control roles and responsibilities (see Annex A). The list of participants in the stakeholders meeting is seen in Annex E.
5. Phase 2 of the malaria programme review and validation of the thematic reviews by a combined team of national and international reviewers. The membership of the phase 2 malaria programme review team is contained in Annex F.
6. Finalization of the national malaria strategy by the drafting team on the basis of the programme review report. Participants in this stage are given in Annex G.
7. A stakeholders meeting for final review and adoption of the strategy. The list of participants in this stakeholders meeting is seen in Annex H.
8. Plans for the formal launch of the National Malaria Strategy.

The specific conclusions of the in-depth review that guided the finalization of the strategy were as follows:

1. Low malaria burden and the transmission pattern in most parts of the country make presumptive treatment even in under-fives inappropriate.
2. Different malaria burden and transmission patterns in different districts makes a blanket nationwide malaria strategy inappropriate.
3. Universal access to parasite and vector control interventions will interrupt malaria transmission in low transmission zones and further reduce the malaria burden in high transmission areas.
4. Malaria elimination is possible, given current technologies and adequate funding, through strategic investments aimed in the medium term at expanding malaria-free areas.

3. The Eight-Year Plan

A malaria-free Kenya is the ultimate vision of this strategy, and by 2017 the implementation of the activities proposed here is expected to have reduced morbidity and mortality caused by malaria in the various epidemiological zones by two-thirds of the 2007/08 level. This goal will be accomplished through six specific objectives and their respective strategies.

3.1 Specific Objectives

The six specific objectives of the strategy intend to build on the experience of the last five years and to work towards accomplishing the aims of NHSSP II and Vision 2030. The six objectives are:

1. By 2013, to have at least 80 per cent of people living in malaria risk areas using appropriate malaria prevention interventions.
2. By 2013, to have 80 per cent of all self-managed fever cases receive prompt and effective treatment and 100 per cent of all fever cases who present to health facilities receiving parasitological diagnosis and effective treatment.
3. By 2010, to ensure that all malaria epidemic prone districts have the capacity to detect and are prepared to respond to malaria epidemics annually.
4. By 2011, to strengthen surveillance, monitoring and evaluation systems so that key malaria indicators are routinely monitored and evaluated in all malarious districts.
5. By 2014, to strengthen advocacy, communication and social mobilization capacities for malaria control to ensure that at least 80 per cent of people in malarious areas have knowledge on the prevention and treatment of malaria.
6. By 2013, to strengthen capacity in programme management in order to achieve malaria programme objectives at all levels of the health care system.

In what follows, the six specific objectives are broken down by the strategies identified for achieving them.

National Malaria Strategy 2009-2017

Vision: A malaria-free Kenya

Goal: By 2017, to have reduced morbidity and mortality caused by malaria in the various epidemiological zones by two-thirds of the 2007/08 level

3.1.1 *Objective 1:* By 2013, to have at least 80 per cent of people living in malaria risk areas using appropriate malaria prevention interventions, *by:*

1.1) Achieving universal distribution of LLINs through appropriate channels, including:

- ***Mass distribution of LLINs:*** For rapid scale up and to universal coverage,[2] LLINS will be distributed in ***endemic and epidemic-prone*** areas every three years to all households. LLINs will also be distributed to schools in a one-off mass distribution campaign after which schools should encourage students to bring nets. Health facilities with inpatient services in malaria endemic and epidemic prone areas should have LLINs to prevent malaria transmission within the institutions. To maximize the impact of the LLINs, a geographic saturation approach will be adopted, ensuring that at the time of distribution, each targeted area achieves 100 per cent population coverage. Mass distribution of LLINs will be accompanied with advocacy campaigns on net use and care before, during and after the distribution.
- ***Routine distribution of LLINs:*** Pregnant women and children under one year of age in all malarious areas will be targeted for LLIN distribution through ANC, child health clinics and community health workers (CHWs) to maintain universal coverage.
- ***Social marketing of LLINs:*** Subsidized LLINs will be sold through social marketing channels particularly in designated locations in rural areas. This will be one way to maintain universal coverage.

1.2) Conducting indoor residual spraying in the targeted areas, including:

- ***Malaria burden reduction IRS:*** IRS will be deployed in the endemic areas over three consecutive peak transmission seasons to reduce the burden of disease as LLIN coverage is scaled up to universal coverage. Institutions including boarding schools and prisons will be included in IRS campaigns.
- ***Epidemic prevention IRS:*** For the first two years of the strategy, IRS will be conducted in all malaria epidemic-prone districts in the western highlands as a continuation of ongoing epidemic prevention IRS. During this period, infrastructure for malaria surveillance will be strengthened as a prelude for transition to focused epidemic response IRS if required.
- ***Capacity building for focalized IRS:*** Capacity of personnel in epidemic-prone districts and seasonal/arid districts to use surveillance data to determine priority areas for focalized IRS will be strengthened. All target districts will be supported with spray equipment, insecticides and training to undertake focalized IRS when indicated. In the case of epidemic-prone districts, the aim of focalized IRS will be to contain massive malaria outbreaks; in seasonal/arid zones the aim will be to interrupt malaria transmission.
- ***Sustaining the IRS gains through other IVM strategies:*** Vector source reduction strategies will be deployed in targeted malarious areas as appropriate in order to sustain gains made in vector control through the use of IRS and LLINs.
- ***ACSM to support IRS:*** Concerted advocacy will be undertaken throughout the implementation of IRS activities.

1.3) Supporting malaria-free schools initiative: The package of interventions for the malaria-free schools initiative includes mainstreaming malaria control in the

[2] Universal coverage means one LLIN for two persons at risk of malaria.

school curriculum, indoor residual spraying of schools and scaling up coverage in malaria endemic and epidemic prone areas, and testing and treating all children with parasitaemia according to the national guidelines.

1.4) Providing IPTp at antenatal clinics: Annual quantification of medicines will be undertaken to determine consumption for preventive treatment in pregnancy. This will ensure that appropriate quantities of preventive medicine are supplied to endemic areas for IPTp. CHWs will provide IEC/BCC and will refer pregnant women to ANC. Training will be provided for ANC staff as part of integrated malaria case management. Training on IPTp specifically targeting service providers in malaria endemic districts will be conducted twice in alternate years (2010 and 2012). Appropriate IPTp messages and materials will be developed and disseminated as part of the integrated IEC/BCC campaign in malaria endemic districts.

3.1.2 *Objective 2:* By 2013, to have 80 per cent of all self-managed fever cases receiving prompt and effective treatment and 100 per cent of all fever cases who present to health facilities receiving parasitological diagnosis and effective treatment, *by:*

2.1) Building capacity for malaria diagnosis and treatment: Kenya has adopted a diagnosis-based malaria treatment policy for all age groups, at all levels of the health system and in all malaria epidemiological zones. At level 4 and 5 facilities, microscopy remains the gold standard for diagnosis. These facilities will be equipped with appropriate microscopes and the skills of laboratory technicians in the facilities will be strengthened through training at a centre for excellence in microscopy. Procurement of laboratory supplies will be part of support to the district malaria business plans. Rapid diagnostic tests (RDTs) will also be used in these facilities, especially when microscopy is not feasible.

At level 1, 2 and 3 facilities, RDTs will be the primary method of malaria diagnosis, and all levels of the heath system will be supplied with RDTs for this purpose. The malaria diagnosis and treatment guidelines will be revised and disseminated regularly to accommodate current and future policy changes. Appropriate job aids, *aides mémoire* and standard operating procedures will be developed to support diagnosticians and clinicians. An integrated malaria training curriculum focusing on the use of RDTs, treatment and pharmacovigilance has been adopted. This training will be outsourced to training institutions for rapid nationwide scale up in all malaria-risk provinces and districts. To enhance training quality, the direct training approach by training consultants has been adopted as opposed to a cascade approach. Post-training follow-up support will be done by the PHMTs/DHMTs. The DOMC will assure quality of training through baseline and follow up assessment of the knowledge and performance of targeted cadres of health workers. Targeted cadres of health workers will be retrained every two years.

2.2) Assuring access to affordable malaria medicines through the private sector: The Affordable Medicines Facility for Malaria (AMFm) is a global subsidy that aims to increase access to ACTs by making them as affordable as the ineffective and non recommended monotherapies – especially in the private sector where access to ACTs is limited by their cost. The DOMC will collaborate with stakeholders including the national drug regulatory body, the Pharmacy and Poisons Board

(PPB), and the private pharmaceutical industry in the development of proposals and coordination to ensure equitable access to first-line malaria medicines to all Kenyans.

DOMC will collaborate with stakeholders like the Pharmacy and Poisons Board (PPB) and the private pharmaceutical industry to ensure equitable access to first-line malaria medicines to all Kenyans.

2.3) Strengthening home management of malaria: KEPH identifies the community as level 1 in the Kenyan health care system, and the national Community Strategy was developed and launched in 2006 to expand access to health services at this level. Home management of malaria (HMM) will be implemented in malaria endemic districts as part of this national community health strategy. CHWs will be trained on malaria case management, prevention, BCC, record keeping and reporting. Initially, first-line malaria medicines and thereafter RDTs will be integrated into the CHW kit. Appropriate IEC materials will be developed and supplied to CHWs, and all CHWs will be linked to the nearest level 2 health facility for resupply of commodities, supervision, monitoring and referral.

3.1.3 *Objective 3:* By 2010, to ensure that all malaria epidemic prone districts have the capacity to detect and are prepared to respond to malaria epidemics annually, *by:*

3.1) Building capacity for epidemic preparedness and response (EPR): Annual EPR review and planning prior to the malaria transmission season will be sustained. Results of the review and planning meetings will be used to support districts with contingency supplies and technical assistance to respond appropriately.

3.2) Strengthening disease surveillance capacity: As epidemic prone districts make the transition from epidemic prevention to epidemic prediction and response, focus will shift to active surveillance as part of IDSR. This will include strengthening capacity to test every fever case, following up positive cases with home visits, screening household members of the index case and treating those found positive for malaria. Each malaria epidemic prone district will establish epidemic preparedness and response teams, review annual epidemic thresholds and disease trends during the malaria transmission season, and conduct audits of any outbreaks.

3.1.4 *Objective 4:* By 2011, to strengthen surveillance, monitoring and evaluation systems so that key malaria indicators are routinely monitored and evaluated in all malarious districts, *by:*

4.1) Strengthening capacity for malaria surveillance: A malaria M&E plan in support of the implementation of the National Malaria Strategy has been developed and disseminated. This malaria M&E plan was developed in the context of the 2006 health sector M&E plan and included the coordination of the M&E network of partners to provide national malaria data. The M&E technical working group will be facilitated to meet regularly and provide technical support for the M&E unit. HMIS is the leader of the health sector M&E effort. Support will be provided to HMIS/IDSR to implement relevant portions of the health sector M&E plan reflected in the malaria M&E plan.

District hospitals that meet the set operational criteria will be monitored on a regular basis to obtain inpatient data as well as data on other malaria trends.

4.2) Strengthening facility and school-based malaria sentinel surveillance: In 2000 DOMC, the Malaria Public Health and Epidemiology Group and KEMRI selected and established four community-based sentinel sites. These sites represented the major malaria epidemiological zones in Kenya and were used to monitor implementations levels of malaria control interventions and their health impacts. The sites are Bondo (lakeside endemic), Kwale (coast endemic), Makueni (semi-arid) and Kisii/Gucha (epidemic prone).

Over the years, however, these sites have been over-supplied with malaria control interventions and hence they presently no longer represent the malaria situation in the rest of the country. With increasing improvements in the routine malaria surveillance systems such as HMIS and IDRS, as well as the regular surveys such as MIS, the maintenance of this type of sentinel site is no longer necessary. Another thing to note is that one of the weaknesses of the sentinel sites in previous years was that they were mainly research focused and sharing of information from these sites was inadequate.

In the new NMS, sentinel school-based monitoring of parasite prevalence will be undertaken on an annual basis. In addition, district hospitals that meet the set operational criteria will be monitored on a regular basis to obtain inpatient data as well as data on other malaria trends. The data will be representative of the malaria situation in the whole country. The health facility-based sentinels that report on malaria cases for the purpose of disease surveillance and response will be maintained in the epidemic prone districts.

4.3) Strengthening malaria data management systems: The information and communications technology (ICT) infrastructure at national and district levels will be upgraded to enhance the efficiency of data collection and reporting. Regular data quality audits will be conducted and the malaria database updated.

4.4) Conducting and supporting community- and facility-based surveys, including

- ***Malaria indicator surveys (MIS):*** These will be conducted every three years during the peak transmission months, June–August.
- ***Malariometric surveys:*** The aim here is to monitor the trends of the true parasite prevalence in the country, through school-based parasite prevalence studies, in order to monitor the expansion of malaria transmission into hitherto malaria-free areas as climate change progresses.
- ***Kenya Demographic and Health Surveys (KDHS):*** KDHS provides data on LLIN and IPTp coverage and overall impact on indicators such as child mortality. Official KDHS results underestimate the coverage of malaria interventions, however, as sampling is done nationally whereas malaria interventions are targeted on the basis of epidemiology. KDHS malaria data will be re-analysed by epidemiological zone to obtain a more accurate view of intervention coverage.

Semi-annual national sample facility assessments will monitor the availability of malaria case management commodities and quality of practices. DOMC will provide technical input and collaborate with partners in trienniel health facility surveys to evaluate IMCI interventions.

- ***Entomological surveys:*** Support will be provided to the Division of Vector Borne and Neglected Diseases (DVBD) and other relevant institutions to undertake a national malaria entomology survey with the aim of updating the Kenya entomological map. Support will also be provided to undertake regular entomological surveys in the malaria-free areas as part of a system to monitor the impact of climate change on malaria epidemiology.

- ***Pharmacovigilance of antimalarials:*** The DOMC in partnership with other institutions will identify and establish suitable sentinel sites for pharmacovigilance and build the capacity of health workers to routinely report suspected adverse drug reactions (ADR) and to participate in the necessary investigations and feedback systems at the sites. Information from sentinel sites together with routine ADR reports will be reviewed and used to guide malaria case management.
- ***Post market surveillance of malaria medicines:*** The DOMC will conduct post market surveillance of malaria medicines every two years.
- ***Drug efficacy monitoring:*** Selected research institutions will be supported to undertake efficacy monitoring of malaria medicines every two years, the results of which will guide malaria treatment policy.
- ***Insecticide resistance monitoring:*** The DOMC in collaboration with institutions will undertake annual insecticide resistance monitoring studies.
- ***Monitoring quality of care:*** In line with the new diagnostic and treatment policies, the DOMC will undertake semi-annual national sample facility assessments to monitor the availability of malaria case management commodities and qulity of practices. The DOMC will continue to provide technical input and collaborate with the DCAH and other partners in health facility surveys undertaken every three years to evaluate the quality of integrated management of childhood illnesses.

4.5) Conducting operational research and translating results to policy: This will be supported beginning with strengthening the effectiveness of the national operational research working group and definition and frequent update of the malaria control operational research priorities. As Kenya progresses to malaria elimination in the long term, there is need for annual review meetings and operational research in the following key areas: Social behavioural research in malaria control; entomological studies; tracking of changes in malaria transmission; piloting of school-based malaria parasite control (testing and treatment of school children); malaria early warning systems; and cost-effectiveness analysis of different combinations of control interventions. Other emerging questions relevant to malaria control may also be investigated, through, for example:

- ***Malaria Early Warning Systems (MEWS):*** Epidemic prone districts largely use early detection indicators from health facility malaria morbidity data (using epidemic thresholds) and data from weather patterns to detect the onset of an epidemic. Research on suitable MEWS will continue to be supported to determine models that are simple, affordable, sustainable and reliable MEWS for Kenya.
- ***Testing and treatment of asymptomatic school children:*** School age children currently have the highest malaria parasite prevalence of any age group especially in malaria endemic areas. As part of the malaria-free schools initiative, pilot studies on the impact of testing and treatment of asymptomatic school children in addition to other malaria control interventions will be supported.

As Kenya moves to malaria elimination in the long term, there is need for operational research in key areas, including tracking changes in malaria transmission and piloting school-based malaria parasite control (testing and treatment of school children).

4.6) Building human resource capacity in surveillance monitoring and evaluation: The human resource capacity of the M&E unit of the National Malaria Control Programme will be strengthened.

3.1.5 *Objective 5:* By 2014, to strengthen advocacy, communication and social mobilization capacities for malaria control to ensure that at least 80 per cent of people in malarious areas have knowledge on prevention and treatment of malaria, *by:*

5.1) ***Strengthening capacity for ACSM:*** The existing malaria communication strategy and IEC materials will be reviewed, updated, published and disseminated. Capacity building of staff at national, provincial and district levels on advocacy will be done.

5.2) ***Developing appropriate advocacy for uptake of specific malaria interventions:*** Avenues for advocacy include the role of the Malaria Goodwill Ambassador; support to relevant professional societies to reach their members with appropriate malaria control communication; commemoration of World Malaria Day (WMD); and use of popular activities including sports and other opportunities for malaria control advocacy.

5.3) ***Conducting multisector IEC/BCC:*** Support will be provided to priority sectors including education, tourism and provincial administration to undertake IEC/BCC activities targeted at their constituents. In the case of the provincial administration, the targets will be households at the community levels through chiefs and assistant chiefs. District malaria control business plans will include support to CBOs for advocacy activities within their respective districts.

3.1.6 *Objective 6:* By 2013, to strengthen capacity in programme management in order to achieve malaria programme objectives at all levels of the health care system, *by:*

6.1) ***Strengthening capacity for planning, partnerships and coordination of the National Malaria Control Programme:*** An officer to coordinate planning within the national malaria control programme, facilitate development and review of business plans of implementing partners and coordinate performance monitoring will be designated.

6.2) ***Strengthening the malaria programme at the district and provincial levels:*** In the spirit of decentralization of malaria control operations, focal persons will be designated at district and provincial levels. The focal persons will be trained and provided with logistical and operational support in order to ensure effectiveness.

Besides capacity building of staff at all levels, advocacy activities will involve the Malaria Goodwill Ambassador, commemoration of World Malaria Day, and use of popular events including sports and other opportunities for malaria control advocacy.

6.3) ***Strengthening infrastructure at national, provincial and district levels to support malaria programme management:*** Programme infrastructure will be strengthened at national, provincial and district programme management levels, including office space, equipment and storage facilities.

6.4) ***Strengthening activity and performance monitoring:*** Processes will be put in place to monitor the performance of the malaria control programme. This will entail strengthening partnership coordination mechanisms and performance reporting systems, as well as conducting performance review and planning meetings at provincial and national levels.

6.5) Strengthening resource mobilization capacity to improve malaria control financing: A full time partnership and resource mobilization officer based at the DOMC will be designated to coordinate GFATM and other bilateral grants for malaria control, as well as the MICC meetings. Plans, guidelines and tools will be developed to support resource mobilization. Advocacy meetings to present the malaria control business plan will be held with various institutions and agencies to mobilize resources to support malaria control interventions in cash and in kind. Concept papers and funding proposals will be developed and submitted to groups and organizations on the basis of outcomes of advocacy meetings. Proposals for support for malaria control interventions will continue to be submitted to development partners and funding agencies like the GFATM. Regular performance reporting on grants will become standard procedure.

Malaria medicines will be supplied to all Government and faith-based health facilities free of charge.

6.6) Strengthening human resource capacities in malaria endemic and epidemic prone areas: To mitigate HRH shortages, the National Malaria Control Programme will contribute to the recruitment of essential health workers in malaria endemic areas. The cadres and numbers to be recruited will be based on needs assessments. Close collaboration will be fostered with the medical training institutions to ensure that malaria is mainstreamed into the training curriculum for health workers. The National Malaria Control Programme will provide technical support to the training colleges to ensure that adequate knowledge is passed on to the trainees. A training officer will be recruited to coordinate implementation of the national integrated malaria control training package. Health workers already in service will be updated on malaria control every two years.

6.7) Strengthening procurement and supply management systems for malaria medicines and commodities: Annual quantification of malaria medicine requirements will be undertaken, to be reviewed quarterly to correct for consumption and in the medium term for morbidity patterns. This will help ensure that the country's needs are always up to date. Procurement processes for malaria medicines will be conducted 18 months in advance with quarterly delivery schedules as specified. For GFATM support the voluntary pooled procurement system will be used. Malaria medicines will be supplied to all Government and faith-based health facilities free of charge. The cost of storage and distribution of malaria medicines will be delinked from the procurement process to facilitate the competitive procurement of separate warehousing and distribution services. A review of the current system of distributing medicines directly to health facilities will be undertaken with a view to exploring ways of strengthening district logistical systems to distribute malaria medicines along with other health commodities. This will require building the capacity of districts to store and distribute malaria medicines. Support will be provided to upgrade the logistics management information system (LMIS) to provide timely malaria logistical data for decision making.

3.2 Strategic Orientations

Several cross-cutting steps will be taken to support the achievement of the objectives. These range from a multisector approach and decentralization, to basing interventions on prevailing epidemiology and strengthening performance monitoring.

Targeting of malaria control interventions will take account of prevailing epidemiology across the countryand will entail regular updating of the Kenya malaria stratification map and profiles, and review of the strategies based on the updated maps and profiles.

Achieving the vision of a malaria-free Kenya requires all sectors to come together, plan together and work together in a multisector approach to malaria.

3.2.1 Adopting a Multisector Approach to Malaria Control

Some sectors in Kenya bear the burden of malaria through lost productivity, lost income, or budget and socio-economic insecurity because of huge expenditures at household level. Other sectors contribute to malaria transmission through the establishment of vector breeding sites or by holding large groups of malaria parasite carriers. To achieve the vision of a malaria-free Kenya, it is necessary for all sectors to come together, plan together and work together in a multisector approach to malaria.

3.2.2 Decentralizing Malaria Control Operations

Implementation of malaria control measures will be decentralized to the provincial and district levels along with the stakeholders at these levels. This will entail strengthening provincial and district malaria control capacity including designation of and financial, logistical and technical support to provincial and district malaria control focal persons and M&E officers. It will also involve enhancing programme planning, coordination and M&E at subnational levels, including facilitation of coordination and joint planning, supervision, monitoring and evaluation among all malaria control stakeholders and partners within a province or district.

3.2.3 Basing Malaria Control Interventions on Prevailing Epidemiology

Malaria control interventions will be targeted according to the prevailing epidemiology in various parts of the country. This will entail regular updating of the Kenya malaria stratification map and profiles, and review of the strategies based on the updated maps and profiles.

3.2.4 Strengthening the Malaria Control Performance Monitoring System

In line with global practice of performance-based funding and Government's policy on performance monitoring, processes will be put in place to monitor performance of the malaria control programme. Key in this area will be the strengthening of partnership coordination mechanisms and performance reporting systems, as well as performance review meetings at provincial and national levels.

Kenya receives support for malaria control from the Global Fund, PMI, DFID and a number of other bilateral donors. The GOK supports health worker remuneration and the procurement of SP for IPTp, medicines and pharmaceuticals for the management of severe malaria, and diagnostic reagents.

3.3 Implementation Plan and Budget

The diverse objectives and their respective strategies and activities are summarized in Tables 3.1 to 3.6. In addition, the tables contain the timelines for the proposed activities. The section also looks at the expenditure framework and the gap in available resources, pointing to the need for resource mobilization.

Table 3.1: Logframe for Kenya Malaria Control Strategy 2009–2017, Objective 1

Objective 1: By 2013, to have at least 80 per cent of people living in malaria risk areas using appropriate malaria prevention interventions

Strategies	Activities	Timeline (FY July–June)							
		'10	'11	'12	'13	'14	'15	'16	'17
1.1 Universal distribution of LLINs through appropriate channels (1 LLIN for 2 people)	Conduct a mass LLIN distribution campaign to households for universal access (1 LLIN for every 2 people at risk every three years)	X			X			X	
	Routine distribution of LLINs using ANC/CWC	X	X	X	X	X	X	X	X
	Distribution of LLINs through social marketing	X	X	X	X	X	X	X	X
1.2 Indoor residual spraying in the targeted areas	Conduct IRS in epidemic prone and fringe endemic districts	X	X	X					
	Capacity building for IRS	X	X	X					
	Procurement and distribution of IRS commodities and equipment	X	X	X					
	Develop GPS mapping system for planning and monitoring IRS activities	X							
	IVM (Larva source reduction) in targeted areas				X	X	X	X	X
	IVM (Environmental management)		X	X	X	X	X	X	X
1.3 Support for malaria-free schools initiative	LLIN distribution in schools (LLINs and distribution costs)	X							
	Implementation of IRS in schools in targeted areas (insecticides; operational costs including training)	X	X	X					
	Operational research on testing and treatment for malaria control in schools	X	X						
	Mainstream malaria control in school curriculum	X	X	X	X	X	X	X	X
1.4 Provision of IPTp at antenatal clinics and community levels	Update and disseminate IPT guidelines	X			X			X	
	Support supervision of MIP activities by DOMC/RH, PHMTs and DHMTs	X	X	X	X	X	X	X	X
	Procurement and distribution of effective medicines for IPTp	X	X	X	X	X	X	X	X
	Conduct a review of IPTp implementation (every three years)	X				X			
	Training of service providers in IPTp (public, private, NGOs)	X		X					
	Mobilization and advocacy for MIP	X	X	X	X	X	X	X	X
	Meetings of the MIP Technical Working Group	X	X	X	X	X	X	X	X

Table 3.2: Logframe for Kenya Malaria Control Strategy 2009–2017, Objective 2

Objective 2: By 2013, to have 80 per cent of all self-managed fever cases receive prompt and effective treatment and 100 per cent of all fever cases who present to health workers receive parasitological diagnosis and effective treatment

Strategies	Activities	Timeline (FY July–June)							
		'10	'11	'12	'13	'14	'15	'16	'17
2.1 Capacity building for malaria diagnosis and treatment at health facilities	Develop standardized training curriculum for laboratory staff	X			X			X	
	Develop tools for laboratory data collection and reporting	X			X			X	
	Update health workers on malaria diagnosis		X			X			X
	Update health workers on malaria laboratory QA and QC	X			X			X	
	Conduct integrated case management training for health workers	X			X			X	X
	Review and disseminate malaria diagnosis and treatment policy and guidelines	X			X			X	
	Conduct case management supportive supervision in health facilities	X	X	X	X	X	X	X	X
	Procure and distribute essential RDTs and laboratory supplies for malaria diagnostics to all levels	X	X	X	X	X	X	X	X

Continued

Table 3.2, *continued*: Logframe for Objective 2

Strategies	Activities	Timeline (FY July–June)							
		'10	'11	'12	'13	'14	'15	'16	'17
2.1 Capacity building for malaria diagnosis and treatment at health facilities, continued	Train health workers on pharmacovigilance	X			X			X	
	Establish and maintain central malaria reference laboratory	X	X	X	X	X	X	X	X
	Establish and review sustainable maintenance plan for microscopes and other equipment	X	X	X	X	X	X	X	X
	Conduct ACSM in support of prompt and effective treatment	X	X	X	X	X	X	X	X
2.2 Access to affordable malaria medicines through the private sector	Develop proposals for AMFm	X			X			X	
	Participate with private sector in AMFm to ensure access to affordable ACTs in private sector (quarterly meetings)	X	X	X	X	X	X	X	X
	Conduct quarterly planning and coordination meetings with private sector	X	X	X	X	X	X	X	X
	Provide technical support for private sector activities	X	X	X	X	X	X	X	X
2.3 Streng-thening home management of malaria (HMM) through CHWs using the Community Strategy	Mainstream ACTs into the Community Strategy	X			X			X	
	Train health workers on HMM	X			X			X	
	Develop curriculum for training on HMM	X			X			X	
	Train community health workers on home management of fever	X			X			X	
	Supply of kits for CHWs and CHEWs	X	X	X	X	X	X	X	X
	Supervise CHWs and CHEWs	X	X	X	X	X	X	X	X

Table 3.3: Log frame for Kenya Malaria Control Strategy 2009–2017, Objective 3

Objective 3: By 2010, to ensure that all malaria epidemic prone districts have the capacity to detect and are prepared to respond to malaria epidemics annually

Strategies	Activities	Timeline (FY July–June)							
		'10	'11	'12	'13	'14	'15	'16	'17
3.1 Capacity building for epidemic preparedness and response	Update malaria epidemic preparedness guidelines	X			X			X	
	Conduct risk mapping of epidemic prone areas	X	X	X	X	X	X	X	X
	Review epidemic preparedness and response plans for district teams	X	X	X	X	X	X	X	X
	Train health workers at district and facility level in epidemic preparedness and response	X			X			X	
	Build capacity in malaria surveillance for epidemics for district and health facility teams	X	X	X	X	X	X	X	X
3.2 Disease surveillance capacity streng-thening	Develop guidelines and tools for malaria active surveillance in epidemic-prone and low transmissions areas	X							
	Train disease surveillance officers on active surveillance of malaria in epidemic prone and low transmissions areas	X		X		X		X	
	Procure supplies to screen members of households of index cases of confirmed malaria - RDTs	X	X	X	X	X	X	X	X
	Procure AL for treatment of malaria *Plasmo-dium falciparum* positive household members	X	X	X	X	X	X	X	X
	Deploy disease surveillance teams for household visits	X	X	X	X	X	X	X	X
	Provide communications support for disease surveillance in the epidemic-prone and low transmission areas	X	X	X	X	X	X	X	X
	Establish epidemic preparedness teams at district level	X			X			X	
	Revise malaria epidemic thresholds for health facilities annually	X	X	X	X	X	X	X	X
	Hold weekly surveillance meetings at district and lower levels during the malaria season	X	X	X	X	X	X	X	X
	Conduct epidemic post mortems or audits for all epidemic prone districts	X	X	X	X	X	X	X	X
	Collect and analyse outbreak reports at national level	X	X	X	X	X	X	X	X
	Maintain malaria epidemic kits including buffer stocks for malaria epidemic management	X	X	X	X	X	X	X	X

Table 3.4: Log frame for Kenya Malaria Control Strategy 2009–2017, Objective 4

Objective 4: By 2011, to strengthen surveillance, monitoring and evaluation systems so that key malaria indicators are routinely monitored and evaluated in all malarious districts

Strategies	Activities	Timeline (FY July–June)							
		'10	'11	'12	'13	'14	'15	'16	'17
4.1 Capacity strengthening for malaria surveillance	Develop and disseminate M&E framework and plan	X			X			X	
	Support M&E technical working group	X	X	X	X	X	X	X	X
	Support scale up malaria surveillance in collaboration with IDSR and HMIS	X	X	X	X	X	X	X	X
	Conduct malaria surveillance monitoring and supervision	X	X	X	X	X	X	X	X
4.2 Strengthening facility- and school-based malaria sentinel surveillance	Conduct malariometric surveys	X	X	X	X	X	X	X	X
	Support the monitoring of the quality of malaria case management in health facility sentinel sites	X	X	X	X	X	X	X	X
4.3 Strengthening malaria data management systems	Update malaria databases (country database, MIAS)	X	X	X	X	X	X	X	X
	Strengthen ICT infrastructure at national, provincial and district levels	X	X	X	X	X	X	X	X
	Roll out MIAS to the district level	X	X	X	X	X	X	X	X
	Strengthen malaria data security	X	X	X					
4.4 Conducting and supporting community surveys	Support Pharmacy and Poisons Board to undertake pharmacovigilance for malaria medicines	X	X	X	X	X	X	X	X
	Conduct malaria medicines post marketing surveillance and quality assessment studies	X	X	X	X	X	X	X	X
	Conduct malaria drug efficacy monitoring studies every two years	X		X		X		X	
	Conduct monitoring of vector susceptibility of insecticides	X	X	X	X	X	X	X	X
	Conduct Malaria Indicator Surveys	X			X			X	
	Reanalyse KDHS malaria data	X				X			
	Conduct entomological surveys	X	X	X	X	X	X	X	X
4.5 Conducting and facilitating health facility surveys	Conduct health facility operational assessments			X			X		
	Conduct health facility surveys			X			X		
	Carry out countrywide health provider and health facility inventory for malaria diagnosis and treatment	X			X			X	
4.6 Operational research and translation	Hold meetings of the malaria control operational research working group to define the malaria OR agenda and coordinate malaria research activities	X	X	X	X	X	X	X	X
	Provide operational research grants to research institutions	X	X	X	X	X	X	X	X
	Hold annual national malaria research to policy conference	X	X	X	X	X	X	X	X
4.7 Human resource capacity building in surveillance, monitoring and evaluation	Train DOMC staff in M&E	X			X			X	
	Train M&E staff in surveillance, GIS and data management	X	X	X	X	X	X	X	X

Table 3.5: Log frame for Kenya Malaria Control Strategy 2009–2017, Objective 5

Objective 5: By 2014, strengthen advocacy, communication and social mobilization capacities for malaria control to ensure that at least 80 per cent of people in malarious areas have knowledge on prevention and treatment of malaria

Strategies	Activities	Timeline (FY July–June)							
		'10	'11	'12	'13	'14	'15	'16	'17
5.1 Capacity strengthening for advocacy, communication and social mobilization.	Develop and disseminate ACSM policy and guidelines	X			X			X	
	Capacity building for health workers and other service providers on ACSM	X			X			X	
	Hold quarterly meetings of malaria ACSM groups at all levels	X	X	X	X	X	X	X	X
	Conduct support supervision visits	X	X	X	X	X	X	X	X
5.2 Support for priority implementing partners	Provide IEC/BCC support to priority implementing partners (Malaria Free Schools initiative)	X	X	X	X	X	X	X	X
	Document malaria control best practices	X	X	X	X	X	X	X	X
	Produce documentaries on best practices in various intervention areas	X			X			X	
	Support provincial/district level ACSM activities (location level malaria field days and competitions)	X	X	X	X	X	X	X	X
	Support activities/visits by the Kenya Malaria Goodwill Ambassador	X	X	X	X	X	X	X	X
	Commemorate World Malaria Day	X	X	X	X	X	X	X	X
	Publish quarterly and annual advocacy bulletins	X	X	X	X	X	X	X	X
5.3 Development of appropriate advocacy for uptake of specific malaria interventions	Provide IEC/BCC support for mass LLIN distribution	X	X		X	X		X	X
	Provide IEC/BCC support for IRS campaigns	X	X	X					
	Conduct advocacy, social mobilization and BCC for MIP	X	X	X	X	X	X	X	X
	Conduct mobilization and advocacy for appropriate case management in the private sector (AMFm)	X	X	X	X	X	X	X	X

Table 3.6: Logframe for Kenya Malaria Control Strategy 2009–2017, Objective 6

Objective 6: By 2013, strengthen capacity in programme management in order to achieve malaria programmatic objectives at all levels of the health care system

Strategies	Activities	Timeline (FY July–June)							
		'10	'11	'12	'13	'14	'15	'16	'17
6.1 Capacity strengthening for planning, partnerships and coordination at national malaria control programme	Develop/update relevant malaria control policy documents and guidelines in all intervention areas	X			X			X	
	Strengthen coordination and integration of malaria control into the health sector annual operational planning process	X	X	X	X	X	X	X	X
	Conduct quarterly MICC meetings	X	X	X	X	X	X	X	X
	Participate in regional and international conferences and meetings	X	X	X	X	X	X	X	X
	Coordinate all technical working groups	X	X	X	X	X	X	X	X
	Maintain current core staff at DOMC	X	X	X	X	X	X	X	X
6.2 Strengthening malaria programme management at the district and provincial levels	Establish /designate malaria focal point positions at provincial and district levels	X							
	Train malaria focal point persons at the provincial and district levels on malaria control and programme management	X		X		X		X	
6.3 Strengthening infrastructure at the national, provincial and district levels	Carry out office expansion/renovations DOMC	X			X			X	
	Provide office equipment and operational support for national, provincial and district programme offices	X	X	X	X	X	X	X	X

Continued

Table 3.6, *continued*: Logframe for Objective 6

Strategies	Activities	Timeline (FY July–June)							
		'10	'11	'12	'13	'14	'15	'16	'17
6.4 Strengthening activity and performance monitoring	Conduct quarterly programme review meetings (DOMC technical) at national level	X	X	X	X	X	X	X	X
	Conduct national biannual planning and review meetings with partners	X	X	X	X	X	X	X	X
	Conduct midterm and end-term review of the NMS and update NMS	X	X	X	X	X	X	X	X
	Facilitate quarterly performance review and planning meetings at provincial level	X	X	X	X	X	X	X	X
	Produce and disseminate annual business plans	X	X	X	X	X	X	X	X
6.5 Strengthening resource mobilization capacity to improve malaria control financing	Recruit and remunerate planning officer	X	X	X	X	X	X	X	X
	Hold roundtable quarterly development partners (donors) meetings	X	X	X	X	X	X	X	X
	Develop resource mobilization proposals (such as GFATM)	X	X	X	X	X	X	X	X
6.6 Strengthening human resource capacities in malaria endemic area	Recruit and remunerate logistician	X	X	X	X	X	X	X	X
	Recruit priority health workers	X	X	X	X	X	X	X	X
	Support for annual malaria programme management and planning course	X	X	X	X	X	X	X	X
	Collaborate with training institutions on curriculum updates	X	X	X	X	X	X	X	X
6.7 Strengthening procurement and supply management systems for malaria drugs & commodities	Conduct quantification of malaria medicines (IPTp, case management), LLINs, laboratory and other medical supplies	X	X	X	X	X	X	X	X
	Recruit /designate logistician for DOMC	X							
	Support the implementation of LMIS for malaria commodities	X	X	X	X	X	X	X	X

3.3.1 Expenditure Framework

In 2007/08, the largest programme expenditure by intervention area was case management, mainly because of the relative high cost of the first-line treatment, AL. This expenditure dropped in the subsequent year as a result of a global price reduction of AL; vector control using LLIN remains the biggest programmatic expenditure. In FY 2008/09, a mass net retreatment campaign was carried out to convert conventional nets and ITNs into LLINs. The same trend is maintained in the current NMS 2009–2017, with LLINs for universal coverage and maintenance of coverage being the biggest single expenditure. (Refer to Table 3.7.)

Table 3.7: Programme expenditure by intervention area (percentage)

Intervention area	2007/08	2008/09
Case management	42	35
Vector control	39	41
Epidemic prevention	8	10
Prevention of malaria in pregnancy	1.6	2.4
Surveillance monitoring and evaluation	2.3	3
Advocacy	5	4
Programme management	3	5

The total cost of implementing the NMS 2009–2017 is US$1,680,462,725. The summary of the cost estimates by objective and strategy is presented in Table 3.8; the detailed financing plan is contained in Annex I.

3.3.2 Gap Analysis and Expected Financial Contributions

The NMS financial gap was estimated through a detailed costing of the logical framework for implementing the activities: estimates of expected financial contributions are based on existing commitments from GOK and development partners. For the initial four years of the NMS, the total cost is US$965,127,630. The summary of the cost estimates by objective and strategy is presented in Table 3.9. The table shows a considerable financial gap per year during the first medium-term plan of the NMS.

Table 3.8: Summary budget of the National Malaria Strategy 2009–2017

Objective	2010	2011	2012	2013	2014	2015	2016	2017	Total	% of budget
Malaria prevention	291,801,841	130,221,772	48,047,964	188,237,126	53,186,981	52,228,878	200,071,634	57,062,589	1,020,858,785	61%
Case management	45,105,591	39,017,730	41,304,593	54,625,829	50,998,629	50,845,074	62,970,810	57,777,326	402,645,582	24%
EPR	8,027,053	8,539,920	8,003,349	8,508,189	8,807,492	8,372,931	8,985,040	9,396,898	68,640,874	4%
SM&E	7,887,305	3,325,492	3,984,636	5,423,607	6,333,134	4,011,496	5,958,872	5,463,001	42,387,542	3%
Advocacy and social mobilization	3,779,961	3,501,700	3,507,700	3,773,573	3,509,645	3,500,845	3,782,280	3,502,745	28,858,448	2%
Programme management	15,570,520	14,133,976	14,529,887	14,403,150	14,924,426	14,415,300	14,964,121	14,130,116	117,071,495	7%
Total	**372,172,271**	**198,740,589**	**119,378,129**	**274,971,473**	**137,760,308**	**133,374,524**	**296,732,757**	**147,332,674**	**1,680,462,725**	**100%**
Total M&E budget	23,711,851	18,610,394	18,876,663	21,252,615	20,754,805	18,477,139	22,752,078	20,870,048	165,305,594	
M&E as % of total budget	6%	9%	16%	8%	15%	14%	8%	14%	10%	

The projected resources for malaria control interventions in Kenya are listed in Table 3.10. Kenya receives support for malaria control from the Global Fund, PMI, DFID and a number of other bilateral donors. The GOK supports health worker remuneration and the procurement of SP for IPTp, medicines and pharmaceuticals for the management of severe malaria, and diagnostic reagents.

Table 3.9: Gap analysis by objective for FY 2009/10–2012/13 (US$)

Objective	2009/10	2010/11	2011/12	2012/13	Total
Malaria prevention	244,436,265	82,388,497	10,869,223	151,046,973	488,740,958
Case management	18,895,400	14,859,995	27,599,793	41,366,849	102,722,037
EPR	7,539,030	8,050,097	7,930,689	8,419,606	31,939,422
SM&E	4,357,531	1,915,608	3,380,705	4,832,687	14,486,531
Advocacy/social mobilization	2,768,869	2,567,028	3,396,358	3,662,231	12,394,486
Programme management	11,185,422	10,912,362	13,537,388	13,495,408	49,131,189
Total	**289,182,517**	**120,693,587**	**66,714,765**	**222,823,753**	**699,414,622**

Table 3.10: Expected financial contributions from GOK and development partners (US$)

Source	2009/10	2010/11	2011/12	2012/13
GOK	822,742	822,742	822,742	822,742
Global Fund Round 4	25,921,567	25,304,647	-	-
PMI	37,652,822	36,000,000	36,000,000	36,000,000
DFID/WHO/PSI	17,975,039	15,332,030	15,340,623	15,324,979
WHO/Gates	87,584	87,584	-	-
UNICEF	30,000	-	-	-
Pfizer Foundation/PSI	500,000	500,000	500,000	-
Total	82,991,764	78,049,013	52,665,376	52,149,733

3.4 Management and Implementation of the NMS

A recent review found that the Kenya National Malaria Control Programme is strong in its structure and functioning at the central level, but weak in terms of coordinating capacity at provincial and district levels. The upshot of this is that the programme is not as effective as it might otherwise be. Upgrading and strengthening the management and coordination structures of the programme therefore constitute a major thrust of this strategy.

Implementation of the NMS will take a multisector approach set in a framework of three guiding principles and three governance pillars. The approach will take the perspective of national management and accountability, coupled with well-delineated financial management procedures.

Moreover, the Global Fund, a major supporter of Kenya's malaria control programme, has recently worked with the Ministry of Finance to develop an operations manual for the management of the grants it provides.[3] Management of these funds and projects will be carried out in accordance with the procedures in the manual.

In all cases, the objective will be administrative and financial management procedures that are efficient, effective, equitable, transparent and clearly indicative of accountability.

3.4.1 National Management and Accountability

The Malaria Interagency Coordinating Committee (MICC) is responsible for making decisions on policy and implementation of malaria interventions and provides an

[3] Ministry of Finance, *Operations Manual for Global Fund Grants in Kenya*, First Edition, Nairobi, Kenya, 2009.

Three principles guide the multisector approach to malaria control in Kenya:
- Health sector leadership
- Priority investment in high impact, quick-win measures
- Adherence to the "three ones"
  - 1 coordinating mechanism
  - 1 strategy
  - 1 M&E mechanism

opportunity for information sharing (See Annex K for the committee's terms of reference.). This committee is chaired by the Director of Public Health and Sanitation with membership from development partners, UN agencies, CSOs, research and academic institutions, Ministry of Health departments (national and provincial), and other ministries (Education, Agriculture, Finance and Information). The MICC supports the implementation of the malaria strategy by providing guidance on policies, strategies and priority areas of intervention; advocating resources for malaria, and approving malaria work plans. The committee also reviews the output of technical working groups (TWGs) and subcommittees, identifies problems and obstacles to the implementation of malaria control activities, and recommends solutions. (Terms of reference for the TWGs are presented in Annex L.)

3.4.2 Principles and Pillars of the Multisector Approach

The multisector approach to malaria control in Kenya is guided by three principles that all implementing and development partners have committed themselves to abide by and uphold:

- ***Health sector leadership:*** MOPHS has statutory responsibility for malaria control and elimination and will lead the multisector response to malaria. DOMC, as the secretariat of the multisector response, will coordinate the following: development of norms, standards, policies, guidelines and tools; planning; resource mobilization and management; capacity building including technical support; monitoring and evaluation; and operational research.

- ***Priority investment in high impact, quick-win measures:*** Investment of available resources will prioritize quick win, high impact activities addressing the four core and four support interventions. There will be no investment in impact mitigation activities.

- ***Adherence to the "three ones":*** All malaria control implementing and development partners will adhere to the principles of the three ones: One country coordination mechanism through MICC; one country malaria control strategy (National Malaria Strategy, 2009–2017), and one country monitoring and evaluation mechanism (M&E framework of the 2009–2017 NMS).

Similarly, the multisector approach is framed by three governance pillars: Transparent recruitment of implementing partners (IPs); access to malaria control resources; and performance monitoring and mutual accountability.

- ***Transparent recruitment of IPs:*** Potential malaria control IPs are many and varied. There is need to assess them to identify their comparative strengths. This will involve orientation on the vision, goal, objectives and strategic approaches of the NMS 2009–2017; the malaria roles and responsibilities matrix; and the governance mechanisms for a multisector approach to malaria in Kenya. Only priority IPs that commit to abide by the governance mechanisms will be accepted and supported.

- ***Recruitment of CSO implementing partners:*** CSOs including NGOs, FBOs and CBOs will be recruited as implementing partners according to their service delivery areas in the malaria annual operational plan identified by the MICC and the roles

matrix (Annex A) for CSOs developed by stakeholders. As in the Global Fund application process, service delivery areas will be advertised and all interested CSOs briefed and encouraged to submit applications. Among other procedures to be followed are the following:

- For the Global Fund, the Country Coordinating Mechanism will conduct the application process, and the review and award of CSOs as implementing partners. Funding for CSO activities and financial management will be the responsibility of the selected Principal Recipient (PR) for the CSOs. The MICC and the DOMC will provide technical assistance to the PR for setting and evaluating performance targets.
- CSOs will be recruited as implementing partners directly by the DOMC in service delivery areas articulated in the roles matrix. CSOs, like other government implementing partners, will adhere to all management procedures.
- CSOs will be recruited as implementing partners by the various development partners according to their respective rules and regulations in service delivery areas articulated in the roles matrix.

- ***Equitable access to malaria control resources:*** Accessing malaria control funds will begin with the development of the IP's business plan based on the roles matrix (Annex A). Districts, along with their stakeholders, will incorporate a malaria component into their annual business plans with detailed activities, work plans, targets, timelines and corresponding budgets. These plans and budgets will be included in the district health sector annual operational plan (AOP). Provinces will coordinate the development and implementation of the district business plans and AOPs. The provinces will develop their own annual business plans inclusive of provincial stakeholders. National level IPs will also develop their malaria business plans. All district, provincial and national level IPs' plans will be collated into a national malaria control business plan, and all business plans will have quarterly milestones. The Kenya donor harmonization and effectiveness mechanism through the annual Joint Programme of Work and Funding (JPWF) will declare resources available for malaria control. Available resources will be allocated to IPs on a quarterly basis according to well-defined prioritization criteria.
- ***Performance monitoring and mutual accountability:*** Quarterly national coordination meetings between IPs and the National Malaria Control Programme will be held to review implementation and resolve bottlenecks. The multisector approach requires technical accountability by all IPs including DOMC. Using a technical reporting framework to be provided by the malaria control secretariat, all implementing partners including DOMC will submit semi-annual reports of activities based on their respective annual malaria control business plans. The secretariat will consolidate these reports into semi-annual progress reports to the MICC and donors. Semi-annual provincial and national stakeholder review and planning meetings will be undertaken to review IP performance reports against indicators and targets in the annual business plan, define priorities for investment in the new semester, and re-plan on the basis of the priorities mutually defined at the meeting.

3.4.3 Flow of Funds

Currently, development partners provide the bulk of the funding for malaria interventions in Kenya. Any significant reduction of this support or failure of Government, development partners and implementing partners to effectively and efficiently disburse, manage and/or account for funds will negatively affect implementation of

the NMS. It is important that commitments to ensure stable financing for malaria interventions be honoured by all partners. Measures to mitigate these include advocating to increase GOK and local private sector financial support for malaria control, strengthening public sector financial management systems for expenditure tracking and accountability, scaling up capacity for pooled funding at district and provincial levels, and building capacity for financial management and reporting at all levels.

Disbursement of Funds to Subnational Levels and Priority Programme Areas

IPs will be funded on a quarterly basis provided that performance targets are met and required reports for the previous quarter are submitted. Requests for funds will be based on the initial annual business plan updated by quarterly forecasts in the AOP. Each IP will develop an annual budget as part of its AOP and business plan according to the NMS with quarterly budget estimates and milestones. Subsequent funding will depend on performance including the submission of comprehensive financial reports and statements. Each IP receiving funds directly from the DOMC will submit financial reports to MOPHS through DOMC. Expenditures will be captured through the government financial and accounting systems. Similarly, each IP will maintain a separate ledger for the malaria control resources disbursed to it by DOMC.

Disbursement of Funds to CSOs

Funds from Global Fund are disbursed directly to CSOs through the Global Fund's appointed PRs and financial management agencies on the basis of approved work plans and budgets. Funds disbursed to CSOs from the DOMC will be according to the laid down GOK regulations. Other donors or development partners will disburse funds at the request of the DOMC and in accordance with their own institutional rules and regulations. Information on all disbursements will be communicated to the DOMC.

3.4.4 Financial Management

The Ministry of Finance is responsible for mobilizing all Government resources and donor resources handled by the Ministry and ensuring their prudent utilization. The External Resources Department has qualified financial experts who manage donor funds including those from the Global Fund and other bilateral donors. With the experience gathered from managing various Global Fund grants, the Ministry has progressively developed a robust financial information management system to facilitate effective funds disbursement to the various line ministries, oversight of accounting and financial progress reporting, and performance monitoring against set targets. Performance monitoring has been enhanced with the introduction of the Integrated Financial Management Information System (IFMIS) by all Government ministries and departments whose aim is to improve public financial management and accountability. The system captures all costs and expenditures and is able to account for all funds transparently.

Other bilateral development partners in malaria control use agencies for financial management of resources under memorandums of understanding between MOPHS, the financial management agency and the donor agency. WHO, for example, is the financial managing agent for DFID's programmatic support for malaria control, while the PMI uses several financial management agencies including the Ministry of Finance depending on the activities funded for malaria control. These financial management agencies use their own accounting procedures in accordance to their respective rules and regulations, or procedures agreed on in the memorandums of understanding.

MOPHS, as a recipient of funds for programmatic activities from the various partners, has specific vote heads for the various donor funded activities. Funds

disbursements are made according to work plans against which the programme must make both financial and performance reports through the IFMIS. Subsequent disbursements for activities are performance based. Disbursement of funds for programmatic activities is one of the Ministry's performance indicators.

Details of all of the financial management procedures will be contained in a financial management manual to be developed with all stakeholders to guide management of both government and donor funds for programmatic activities. This manual will be placed in the public domain and disseminated to all implementing partners.

3.4.5 Accounting Procedures

The DOMC will maintain programme accounts under its coordination according to Government financial accounting policies and procedures. For this to work efficiently, work plans and budgets should align to the GOK's fiscal year, which runs from July to June. Other procedures include:

- Funding for activities by all implementing partners including the DOMC will be based on detailed work plans and budgets derived from the AOPs. All funds not spent by the end of the financing period will be refunded.
- Implementing partners will provide quarterly financial reports or as indicated; these reports will be audited.
- Inventories will be kept of all assets and appropriately costed and accounted for in expenditure reports.

3.4.6 Financial Audit Procedures

Funding made available through the Government systems will be audited in accordance with laid down procedures. All expenditures in the government system are subject to both internal audit (by the line Ministry's internal audit department as well as the Ministry of Finance auditors) and external audit by the office of the Auditor General which works independently of any ministry including the Ministry of Finance. Audits are based on verification of expenditures against approved work plans and evidence of activities performed. This ensures that the operations are managed according to GOK accounting standards. Resources disbursed and managed by development partners will be audited in accordance with their respective rules and regulations.

3.4.7 Procurement of Commodities and Services

Nationally, the Public Procurement and Disposal Act of 2005 and Regulations of 2006, will guide the procurement of commodities and services for malaria control. The key stages in a procurement cycle by the GOK are:

- ***Planning and specification:*** The strategy and procurement method are agreed and delivery criteria/targets set. Generic product or service selection is confirmed and the buying specification or criteria agreed.
- ***Tendering:*** The request for quotes is issued and offers prepared by the bidders. For open tenders, this includes the advertising process. There are multiple methods of tendering allowed under specific circumstances.
- ***Evaluation:*** Tenders are opened and evaluated and any necessary clarifications obtained to enable purchase recommendations to be made.
- ***Adjudication and award:*** This is done by the Ministerial Tender Committee.
- ***Contracting:*** If necessary, and if permitted, negotiations are held with the selected bidder. A contract is then offered.

- ***Delivery:*** The period from contracting to successful delivery, including quality assurance of the products or services supplied, is defined in the contract.
- ***Payment and reporting:*** Apart from necessary after sales service, contractors or suppliers are paid after performance is reviewed and reported into the procurement management system to inform the next cycle of procurement.

The Procurement Act provides for procurement of commodities and services through:

- Open tender (both national and international), or
- Direct procurement through UN agencies like WHO, UNICEF and others, especially during emergencies.

MOPHS procures malaria medicines and commodities through the Kenya Medical Supply Agency (KEMSA). A state corporation established by a legal notice issued under CAP 466 of the Laws of Kenya, KEMSA replaced successive medical stores administrations that had existed since 1901 under various names. KEMSA works to support NHSSP II and KEPH in providing public health facilities with the "right quantity and quality of medicines and medical supplies" at the best market value.

Procurement of commodities under special programmes like the Global Fund will follow government rules and regulations. Where applicable, an international voluntary pooled procurement (VPP) mechanism combined with capacity-building support for supply chain management assistance will be used. Procurement of commodities by other donor agencies in malaria control follow rules and regulations by the relevant organizations. However, UN agencies and international procurement organizations often provide this service.

Procurement of services will follow the guidelines and procedures defined in the Procurement Act. Such services include trainings, surveys and research, and consultancies.

3.4.8 Monitoring and Evaluation System

A separate monitoring and evaluation plan supports this strategy. The M&E framework of indicators, baseline and targets are contained in Annex J. As seen in Objective 4, the M&E plan covers the following components:

- Strengthening routine monitoring systems through human resource and technical capacity development for M&E.
- Enhancing HMIS/IDSR/LMIS capacity to provide routine data for malaria control,
- Supporting PPB for nationwide roll-out of pharmacovigilance and regular post market surveillance of malaria medicines and further investments in drug efficacy monitoring, insecticide resistance monitoring and malaria sentinel surveillance.
- Evaluating the impact of malaria control interventions through investment in malaria indicator surveys (MIS), Kenya Demographic and Health Surveys (KDHS), health facility surveys, entomological surveys, and operational research.

The national M&E plan has already been disseminated electronically to all stakeholders. Further dissemination of the M&E plan, as well as the results, will be through the semi-annual malaria stakeholder meetings. Specific M&E products like the reports of MIS are disseminated through special launches by high level personalities.

The M&E plan also envisions the following:

- ***Monitoring:*** The National Malaria Control Programme will conduct quarterly performance monitoring meetings to review progress of implementation against targets in the annual business plan, address implementation bottlenecks and refocus

as necessary. At the stakeholder level and in line with the governance mechanisms for the multisector approach, quarterly coordination meetings will be held with respective implementing partner groups[4] to review implementation and address bottlenecks. Semi-annual stakeholder performance monitoring and review meetings at provincial and national levels will also review performance against targets, address any constraints to implementation and refocus activities if needed.

- ***Control and audit:*** HMIS, the custodian of routine malaria information and data, will conduct annual data quality audits and make official routine malaria data available. Non routine data, including data from LMIS, will be available from the DOMC.
- ***Annual review meeting:*** As part of the commitment to performance monitoring, all stakeholders will meet annually to review achievements against targets and milestones in the strategic plan and annual business plans. These meetings will also define and finalize priorities for the new year.
- ***Midterm evaluation:*** To ensure proper alignment with the country's medium-term planning processes, a midterm evaluation of this strategy will be conducted in the third quarter of 2012. This will be followed by a review of the strategy and finalization of the 2013/14 business plan by the last quarter of 2012.
- ***Final evaluation:*** The final evaluation of the strategy will be integrated into an in-depth review of the National Malaria Control Programme during the first half of 2016. This will culminate in a new national malaria strategy beginning July 2017.

[4] There are eight implementation groups: districts/provinces; health sector programmes in malaria related MDGs; non health sector ministries and organizations; academic and research institutions; private sector organizations – corporate and mass media organizations; civil society organizations – NGOs, CBOs and FBOs; professional societies; and Parliament.

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Annex A: Roles and Responsibilities of Health and Non Health Sector Implementing Partners

Group 1: Districts and Provinces

1.1 Districts

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ Coordinate mass LLIN distribution ▪ Coordinate IRS ▪ Coordinate IVM activities ▪ implement IPTp as appropriate	▪ Implement diagnosis and treatment ▪ Implement and monitor HMM at community level ▪ Coordinate training in malaria case management at district level	▪ Establish a functional EPR team ▪ Coordinate malaria surveillance ▪ Train disease surveillance teams ▪ Analyse and report on surveillance data ▪ Monitor malaria trends ▪ Coordinate response to outbreaks ▪ Develop district EPR plan	▪ Conduct support supervision ▪ Monitor various malaria indicators and report ▪ Ensure timely data submis-sion to HMIS/LMIS (LLIN, IRS, medicines, morbidity, mortality) ▪ Conduct and report on performance review meetings	▪ Provide health education to residents on malaria interventions ▪ Advocate for malaria prevention, e.g., on WMD ▪ Conduct community-based mobilization activities ▪ Disseminate information to health workers and general public ▪ Document and share best practices ▪ Convene district stakeholders forum	▪ Monitor performance ▪ Ensure adequate supplies of commodities and returns ▪ Report on indicators and targets ▪ Conduct review and planning meetings for AOP/business plans ▪ Mobilize local resources for interventions ▪ Coordinate partnerships at district level

Group 1: Districts and Provinces

1.2 Provinces

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
			▪ Conduct support supervision ▪ Conduct and report on performance review meetings with districts in province	▪ Advocate for malaria through provincial stakeholders forum, WMD, etc. ▪ Disseminate information to health workers and general public ▪ Document and share best practices with districts in province	▪ Monitor performance ▪ Report on provincial indicators and targets ▪ Conduct review and planning meetings for AOP/business plans ▪ Mobilize local resources ▪ Coordinate provincial level partnerships

Group 2: Health Sector Programmes

2.1 Division of Reproductive Health

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ Support LLIN and IPTp delivery through ANC in malarious districts	▪ Implement diagnosis and appropriate treatment of all symptomatic pregnant women countrywide		▪ Conduct integrated support supervision for MIP with partners ▪ Monitor various MIP indicators and report ▪ Ensure timely data submission to HMIS/ LMIS (LLIN, medicines – SP, AL, morbidity, mortality) ▪ Monitor and evaluate implementation trends and progress towards indicator targets	▪ Review appropriate IEC/ BCC messages for MIP ▪ Disseminate information to health workers and general public on MIP ▪ Document and share best practices	▪ Monitor performance ▪ Report on indicators and targets ▪ Review policies and guidelines on MIP ▪ Review training curricula for health workers ▪ Implement training for health workers

Group 2: Health Sector Programmes

2.2 Division of Child and Adolescent Health

Objective 1: Malaria Prevention	Objective 2: Case Management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ Support LLIN distribution through CWCs in malarious districts	▪ Implement diagnosis and appropriate treatment of fever particularly the use of RDT for confirmation of malaria, triaging, etc. ▪ Develop appropriate job aids and treatment guidelines ▪ Integrate current malaria policies in IMCI ▪ Coordinate implementation, M&E of HMM		▪ Conduct integrated support supervision for with partners ▪ Monitor various child health indicators on malaria ▪ Ensure timely data submission to HMIS/ LMIS (LLIN, medicines – AL, morbidity, mortality) ▪ Monitor and evaluate implementation trends and progress towards indicator targets ▪ Coordinate malaria surveillance with EPI and other diseases ▪ Participate health facility surveys, MIS	▪ Review appropriate IEC/BCC messages on prompt treatment seeking behaviour ▪ Disseminate information to health workers and general ▪ Conduct Malezi bora campaigns with malaria messages	▪ Monitor performance ▪ Report on indicators and targets ▪ Review policies and guidelines on IMCI and malaria ▪ Review training curricula for health workers ▪ Implement training for health workers

Group 2: Health Sector Programmes

2.3 Division of Vector Borne and Neglected Diseases

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ Participate in implementation of IVM ▪ Participate in the implementation of IRS activities	▪ Provide malaria diagnostic services and QA/QC for malaria diagnosis	▪ Participate in planning and implementation of IRS and IVM for EPR ▪ Participate in the development and validation of MEWS	▪ Conduct entomological monitoring for malaria vectors countrywide ▪ Participate in insecticide resistance monitoring ▪ Conduct and report on malariometric surveys ▪ Participate in performance review and monitoring meetings	▪ Advocate for entomological and malariometric surveys	▪ Participate in the development of integrated business plans for malaria vector control ▪ Convene performance monitoring and review meetings ▪ Report on indicators and targets

Group 2: Health Sector Programmes

2.4 Division of Environmental Health

Objective 1: Malaria Prevention	Objective 2: Case Management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ Participate in implementation of IVM ▪ Participate in the implementation of IRS activities		▪ Participate in the planning and implementation of IRS and IVM for EPR ▪ Conduct entomological and parasitological surveillance	▪ Participate in health facility surveys, MIS, malariometric and other surveys	▪ Conduct community mobilization and advocacy for vector control interventions	▪ Monitor performance ▪ Report on indicators and targets ▪ Participate in development of business plans for IVM ▪ Mobilize resources for malaria vector control activities

Group 2: Health Sector Programmes

2.5 Department of Disease Surveillance and Response

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
		▪ Integrate malaria surveillance and reporting countrywide ▪ Coordinate planning and implementation of malaria EPR at district level	▪ Participate in review of tools for reporting disease surveillance ▪ Prepare weekly and monthly disease surveillance reports ▪ Provide feedback to DHMTs on malaria surveillance data	▪ Advocate for community disease surveillance and reporting ▪ Publish weekly surveillance data in the media	▪ Participate in performance review and planning meetings for malaria control at all levels

Group 2: Health Sector Programmes

2.6 National Public Health Laboratory Services

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
	▪ Establish the national malaria reference lab for training and QA/QC for malaria diagnosis		▪ Ensure timely reporting of malaria lab data including RDTs ▪ Support setting up of SPR data bases in all districts in Kenya	▪ Participate in advocacy for health workers for diagnosis-based treatment of malaria	▪ Support the development of malaria diagnostic policy and guidelines ▪ Ensure adequate supply of malaria diagnostics countrywide ▪ Ensure personnel are regularly updated on malaria diagnosis ▪ Participate in performance review and planning meetings for malaria control at all levels

Group 2: Health Sector Programmes

2.7 Department of Health Promotion

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
			▪ Participate in MIS, and other surveys ▪ Evaluate impact of various messages and delivery mechanisms ▪ Report on performance, best practices and impact of messages	▪ Support the review and development of appropriate messages to promote the uptake of malaria control interventions including EPR ▪ Participate in malaria advo-cacy campaigns (WMD, community mobilization meetings) ▪ Deliver health education messages for target audiences	▪ Support capacity building for health workers in advocacy and BCC ▪ Report on indicators and targets ▪ Participate in development of business plans ▪ Convene performance review and monitoring meetings

Group 2: Health Sector Programmes

2.8 Kenya Medical Supplies Agency (KEMSA)

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
			▪ Strengthen LMIS for malaria commodities ▪ Report on commodity distribution and consumption	▪	▪ Coordinate and strengthen PSM for malaria commodities ▪ Participate in performance monitoring and review and planning meetings

Group 2: Health Sector Programmes

2.9: Pharmacy and Poisons Board

Objective 1: Malaria Prevention	Objective 2: Case Management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
			▪ Conduct pharmacovigilance for malaria medicines ▪ Participate in review meetings for the implementation and evaluation of community-based management of malaria ▪ Regulate, monitor and evaluate access to subsidized ACTs in the private sector ▪ Participate in the post-market surveillance for malaria medicines with NCQLS ▪ Monitor performance and report on set targets		▪ Provide technical support for scheduling of malaria medicines ▪ Implement registration of only recommended malaria medicines

Group 2: Health Sector Programmes

2.10: Division of Malaria Control

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ Develop and disseminate policies, guidelines and strategies ▪ Plan coordination and partnerships for the implementation of interventions ▪ Provide technical support for all implementing partners	▪ Develop and disseminate policies, guidelines and strategies ▪ Plan coordination and partnerships for the implementation of interventions ▪ Provide technical support for all implementing partners	▪ Develop and disseminate policies, guidelines and strategies ▪ Plan coordination and partnerships for the implementation of interventions ▪ Provide technical support for all implementing partners	▪ Plan and implement national monitoring for malaria indicators and targets ▪ Coordinate, plan and implement various national surveys ▪ Prepare annual malaria reports on disease trends and impacts of various interventions ▪ Develop operational research agenda to support policies ▪ Provide technical support for supervision ▪ Convene performance monitoring and review meetings	▪ Review and develop appropriate standard messages for malaria interventions ▪ Conduct high level malaria advocacy ▪ Support commemoration of WMD ▪ Convene annual conferences and review meetings	▪ Facilitate development of AOPs for districts ▪ Nurture partnerships and mobilize resources for malaria control interventions including health systems strengthening through human resources for health ▪ Build human resource capacity ▪ Review, develop and disseminate malaria policies and policy guidelines ▪ Coordinate logistics for procurement and supply chain management for malaria commodities ▪ Report on programme performance

Group 3: Non Health Sector Ministries and Organizations

3.1: Ministry of Education

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ Promote LLIN use in schools ▪ Conduct LLIN mass distribution through schools ▪ Entrench policy of bringing and using LLINs to schools in malaria endemic and epidemic prone areas	▪ Encourage prompt diagnosis and treatment for all fever cases	▪ Participate in the planning of EPR in epidemic prone districts ▪ Ensure schools in these districts participate in surveillance and response activities	▪ Participate in malariometric surveys ▪ Participate in the evaluation of various interventions to control malaria in school populations ▪ Participate in performance monitoring and review meetings	▪ Integrate malaria prevention in the schools' curriculum ▪ Encourage teachers and pupils to be community advocates for malaria prevention and control ▪ Enable Provincial Directors of Education and District Education Officers to participate in dissemination of malaria messages to staff and community	▪ Participate in district and provincial planning and review meetings and stakeholder forums

Group 3: Non Health Sector Ministries and Organizations

3.2: Ministry of Agriculture

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ Promote LLIN mass distribution to commercial agricultural sector ▪ Implement IVM including larviciding and environmental management, especially in irrigation schemes	▪ Encourage prompt diagnosis and treatment for all fever cases in the sector	▪ Pest Control Products Board (PCPB) – participate in planning of IVM including IRS and larviciding for EPR	▪ Participate in the monitoring of insecticide resistance in malaria vectors (PCPB) ▪ Participate in the monitoring of the impact of agricultural activities on malaria ▪ Participate in performance monitoring and review meetings	▪ Encourage the provision of malaria prevention messages and IEC on malaria interventions to communities and commercial farm workers	▪ Participate in district and provincial planning and review meetings and stakeholder forums ▪ Register appropriate insecticides for malaria vector control (PCPB)

Group 3: Non Health Sector Ministries and Organizations

3.3: Ministries of Roads and Transport, Water and Irrigation

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ Implement IVM, particularly environmental management such draining potential breeding sites not in use, filling excavation sites and controlling vectors in irrigation schemes ▪ For Ministry of Water, encourage communities living beside water sources to use vector control interventions		▪ For Meteorology Department in Ministry of Transportation, submit weather reports to guide EPR activities		▪ Pass malaria prevention messages to staff and communities in the various sectors	▪ Participate in district and provincial planning and review meetings and stakeholder forums

Group 3: Non Health Sector Ministries and Organizations

3.4: Ministry of Tourism

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ Implement policy of use of LLIN for and IRS for malaria vector control in tourist hotels ▪ Conduct larviciding in unused pools and fountains ▪ Ensure appropriate environmental management				▪ Provide malaria prevention messages and information in websites and on brochures for tourists visiting various parts of the country	▪ Participate in district and provincial stakeholder forums

Group 3: Non-Health Sector Ministries and Organizations Roles Matrix

3.5: Ministry of Environment and Natural Resources

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ Participate in the Vector Control TWG ▪ Enforce environmental management regulations for roads, building and construction works, agricultural and water sector ▪ Provide technical advice on the implementation of IRS and LLIN waste management and disposal			▪ Participate in evaluation of the impact of environmental degradation and climate change on malaria	▪ Advocate for ameliorating the impact of environmental changes on diseases like malaria	▪ Participate in district and provincial planning and review meetings and stakeholder forums

Group 3: Non Health Sector Ministries and Organizations

3.6: Ministry of Local Government

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ Participate in the implementation of vector control activities, including larviciding in urban areas and environmental management ▪ Participate in the planning and implementation of IRS in urban areas	▪ Implement diagnosis and treatment for malaria in all health facilities run by the Ministry	▪ Where appropriate, participate in surveillance and EPR	▪ For Local Councils, conduct integrated support supervision with DHMT ▪ Monitor various malaria indicators and report ▪ Ensure timely data submission to HMIS/LMIS ▪ Conduct and report on performance review meetings	▪ Provide health education to council residents on malaria interventions ▪ Disseminate information to health workers and general public	▪ Participate in district and provincial planning and review meetings and stakeholder forums

Group 3: Non Health Sector Ministries and Organizations

3.7: Provincial Administration

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ Participate in the planning and implementation of mass LLIN distribution ▪ Participate in the planning and implementation of IRS in communities		▪ Participate in the planning and implementation of disease surveillance and EPR activities		▪ Participate in advocacy for the use of malaria control interventions at community level ▪ Provide malaria prevention talks during community meetings	▪ Participate in district and provincial planning and review meetings and stakeholder forums ▪ Advocate and mobilize resources for malaria control through District Development Committees ▪ Advocate for and allocate funds for infrastructure development

Group 3: Non Health Sector Ministries and Organizations

3.8: Ministry of Home Affairs

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ For Prisons Department, participate in the implementation of vector control activities particularly IRS in prisons in malaria endemic and epidemic prone areas	▪ Implement diagnosis and treatment for malaria in all prisons health facilities		▪ Submit complete and timely reports on interventions implemented to DOMC	▪ Disseminate information to prisons staff and inmates	▪ Participate in performance monitoring and review meetings

Group 3: Non Health Sector Ministries and Organizations

3.9: Military and Police

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ Distribute LLINs to the disciplined forces and their families in malarious areas ▪ Implement IRS activities in barracks and officers dwellings ▪ Train officers to implement IRS ▪ Implement IVM policies where necessary ▪ Provide IPTp to pregnant women living in malaria endemic areas	▪ Implement diagnosis and treatment for malaria in all military health facilities		▪ Submit complete and timely reports on interventions done to HMIS/LMIS and the DOMC	▪ Disseminate information to all personnel and their families	▪ Participate in performance monitoring and review meetings ▪ Submit performance reports

Group 4: Academic and Research Institutions

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ Participate in the Vector Control TWG ▪ Participate in the MIP TWG	▪ Participate in the Case Management TWG ▪ Participate in QA/QC for malaria microscopy through training ▪ Build capacity for QA/QC for malaria diagnosis and diagnostics including RDTs	▪ Develop and validate reliable MEWS	▪ Participate in the SMEOR TWG ▪ Monitor drug efficacy ▪ Build capacity for monitoring and evaluation ▪ Conduct entomological surveillance ▪ Monitor insecticide resistance ▪ Collaborate in the implementation of the MIS and other surveys ▪ Participate in carrying out various interventions ▪ Conduct QA/QC for malaria medicines and other commodities	▪ Participate in the ACSM TWG ▪ Conduct behaviour studies to advise BCC	▪ Participate in performance monitoring and review meetings ▪ Submit performance reports ▪ Participate in strategic planning

Group 5: Private Sector

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ Contribute to various communities with LLINs as part of corporate social responsibility ▪ Contribute IRS commodities (insecticides, protective equipment, storage, equipment maintenance etc) and support the conduct of IRS	▪ Support the provision of and access to affordable malaria case management especially within the private sector	▪ Contribute to the sharing of surveillance data by districts through the media	▪ Support M&E of various interventions	▪ Contribute to the production and dissemination of messages for malaria interventions to various target audiences	▪ Support resource mobilization for malaria control interventions through various alliances ▪ Participate in the various technical working groups at the NMCP ▪ Participate in the development and implementation of malaria business plans

Group 6: Civil Society Organizations

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ Participate in the mass distribution of LLINs to communities at risk of malaria ▪ Participate in and support the implementation of IRS activities in target communities ▪ Support the implementation of IPTp through ANC	▪ Support implementation of prompt access to treatment ▪ Support the implementation of malaria diagnosis ▪ Implement training of health workers in malaria case management ▪ Support curriculum development for health workers ▪ Support the implementation of home-based management of malaria	▪ Support districts teams in surveillance for malaria and EPR in epidemic prone districts	▪ Support M&E of various interventions implemented by CSOs ▪ Participate in various community-based surveys ▪ Monitor various malaria indicators and report in a timely manner ▪ Ensure timely data submission to HMIS/ LMIS and community information system where relevant ▪ Conduct and report on performance review meetings ▪ Document and share best practices ▪ Participate in the implementation of operational research	▪ Support the production and dissemination of messages to create demand for and utilization of malaria interventions to various target audiences ▪ Support community mobilization and participation in malaria control efforts	▪ Support resource mobilization for malaria control interventions ▪ Participate in the various technical working groups ▪ Participate in strategic planning and policy implementation ▪ Participate in the development and implementation of malaria business plans ▪ Submit performance reports

Group 7: Professional Associations and Societies

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ Support the implementation of policies and strategies on LLIN and IRS for populations at risk through various channels	▪ Support updating of the curricula for pre-service and in-service training of health workers ▪ Participate in the development of guidelines and job aids for health workers and ensure utilization ▪ Ensure the implementation of diagnosis for the confirmation of malaria ▪ Maintain quality of care in service delivery by various cadres of health workers ▪ Hold clinical discussions and reviews of malaria treatment with health workers		▪ Strengthen research capacities at institutional level to evaluate quality of service delivery ▪ Support the generation of evidence-based practices for health workers ▪ Participate in discussions to translate research to policy	▪ Participate in the production and dissemination of messages especially for health workers BCC ▪ Disseminate information on malaria policies, strategies and guidelines to health workers ▪ Participate in the dissemination of the vision, goals and objectives of the malaria control strategic plan to members ▪ Participate in mass communication to the public on malaria prevention and control messages	▪ Participate in the various technical working groups ▪ Participate in strategic planning, and policy implementation ▪ Participate in the development and implementation of malaria business plans ▪ Submit performance reports

Group 8.1: Parliamentary Committee on Health

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ Advocate for the review of the Malaria Prevention Act ▪ Advocate for allocation of more GOK resources for malaria prevention activities	▪ Advocate for allocation of more GOK resources for malaria treatment ▪ Advocate for enforcement of laws mopping up non-recommended medicines ▪ Advocate for the passing of anti-counterfeit bills	▪ Advocate for allocation of adequate resources for timely EPR		▪ Advocate for increased funding for malaria control to realize the vision of a malaria-free Kenya ▪ Advocate for recruitment of health workers to support service delivery ▪ Advocate for GOK support for health infrastructure development	▪ Participate in national level stakeholder meetings for policy and strategic development ▪ Participate in resource mobilization for malaria control interventions for partners

Group 8.2: Parliamentarians, Councillors and the Constituency Development Committee

Objective 1: Malaria prevention	Objective 2: Case management	Objective 3: Epidemic preparedness & response	Objective 4: Surveillance M&E and operations research	Objective 5: Advocacy, BCC and social mobilization	Objective 6: Programme management
▪ Support the delivery of malaria prevention measures at community level including LLINs, IRS and other activities like larviciding and environmental management ▪ Provide commodities such as LLIN insecticides and larvicides for malaria control from CDF ▪ Enforce local authority health by-laws regarding vector control	▪ Advocate for prompt diagnosis and treatment for malaria ▪ Use CDF to support stipend for CHW imple-menting HMM ▪ Advocate for enforcement of laws mopping up non-recom-mended medicines ▪ Advocate for the passing of anti-coun-terfeit bills	▪ Support local EPR activities especially rapid response to epidemics in epidemic prone regions ▪ Use CDF to support IRS, larviciding and environmental management	▪ Support CBO in carrying out community-based information systems	▪ Support community mobilization activities for malaria control ▪ Support and participate in advocacy meetings at district and constituency ▪ Advocate for uptake inter-ventions including the use of LLINs, acceptability of IRS, uptake of IPTp ▪ Participate in the dissemina-tion of malaria information to communities, e.g., during WMD ▪ Lead malaria control efforts and inter-sectoral collaboration within constituencies	▪ Participate in constituency level and district level performance monitoring, planning and review meetings ▪ Support and fund the recruitment of community health workers to support service delivery at community level ▪ Support passing of a resolution on a Malaria-Free Kenya ▪ Advocate for the allocation of resources for a Malaria-Free Kenya ▪ Support resource mobilization from private sector and other funding agencies

Annex B: Terms of Reference for the Malaria Programme Performance Review Task Force and Secretariat

Terms of Reference for the Malaria Programme Review Task Force

1. Tasks:

The Malaria Programme Performance Review (MPR) task force shall be responsible for technical oversight of the entire programme review process. Specifically, the task force shall

§ Review, adopt and approve the MPR proposal including objectives, expected outcomes, methodologies and processes
§ Oversee MPR planning, implementation and follow up
§ Ensure that the review recommendations are implemented

2. Membership:

The core members of the task force should be limited to 8–10. The core members should consist of people with both technical and programmatic knowledge/skills in malaria control programme in particular and public health services delivery in general. They should be personalities in positions to contribute to influence policy and operational decisions in taking the review recommendation forward.

Specific expertise required in the task force include the following

- Malarialogist
- Malaria field epidemiologist
- Clinical specialists in malaria case management (Physician, Paediatrician, Obstetrician)
- Laboratory, parasitology and pathology specialist
- Entomologist and/or vector control specialist
- Information education and communication or behaviour change communication specialist
- Economist and/or financial specialist
- M&E specialist and disease modellers
- Programme administrators and human resource specialist

Terms of Reference for the Malaria Programme Review Secretariat

1. Tasks:

Under the leadership of the MPR Coordinator, the task of the review secretariat is to provide technical, organizational, and logistic support for all phases of the review. The technical tasks are to

- Summarize the status of the programme and its component areas
- Identify the major achievements, best practices and problems in the programme.
- Investigate priority problems and select possible solutions.
- Develop recommendations and work plan of action

2. Composition and focus of Secretariat:

The secretariat should consist of mainly DOMC staff along with facilitators from RBM partners. The secretariat should consist of people with the following skills

- Malaria programme leadership and management
- Data collection and analysis
- Conduct of systematic reviews
- Conduct of management reviews
- Health systems assessment

Annex C: Terms of Reference and Membership of Malaria Programme Review Thematic Groups

Background:

The government of Kenya in collaboration with the malaria inter-agency coordinating committee is undertaking an in-depth review of the national malaria control programme with the aim of refocusing malaria control Kenya for greater impact. This malaria programme review is scheduled in 3 phases as follows: Phase I, Preparation, Planning, Organization and Management (January to March 2009); Phase II, Conducting the field review (May 2009); Phase III, follow up of the review (June to July 2009 and onwards).

The Malaria Programme Review (MPR) will be undertaken a various technical and administrative levels. Therefore different teams will be responsible for different levels. There will be two groups of teams:

i. Thematic review and coordination team: This team will undertake an in-depth review of the various Kenya malaria control programme components - Programme management; Case management; MIP; Vector control; IEC/BCC; EPR; SM&E
ii. Field review teams: District/provincial review teams; National review teams - DOMC, RBM partners, Other MOPHS/MOMS departments and divisions, Non-health sector players, Research institutions

The objectives of the review are as follows:

a) To review malaria epidemiology
b) To review the policy and programming framework within the context of the health system and the national development agenda
c) To assess progress towards achievement of global RBM targets
d) To review the current programme services delivery systems, their performance and challenges
e) To define next steps to improve programme performance and/or redefine the strategic direction and focus including revision of the Strategic Plan and operational plan

The expected outputs:

Phase 1:

a) Thematic group reports

Phase 2:

a) Malaria Programme Review Report and Aide Mémoire
b) Recommendations for finalization of the National Malaria Strategic Plan

Members of the thematic groups

1. Vector control & epidemic preparedness and response

Name	Organization
Munga Stephen	KEMRI/Consultant
Evan Mathenge	KEMRI/Chairperson
Anthony Kanja	PSI – Kenya
Paul K. Kiptoo	Division of Malaria Control
Daniel G. Wacira	USAID/PMI
Jacob M. Kimani	Division of Malaria Control
Kiambo Njagi	Division of Malaria Control
James K. Sang	Division of Malaria Control
Jean Rakotoson	RTI International
Autman Tembu	RTI International
Rebecca Kiptui	Division of Malaria Control

2. Programme management

Name	Organization
Ephantus Kabiru	Kenyatta University/Rapporteur
Manya Andrews	PSI – Kenya/ Chairperson
Josephine Karuri	MSH/SPS
Catherine Ngugi	RTI International
Gladys Tetteh	MSH/SPS
Rebecca Kiptui	DOMC
Elizabeth Juma	DOMC
Andrew Wamari	DOMC
Akpaka Kalu	WHO Kenya

3. Epidemiology

Name	Organization
Teresa Kinyari	University of Nairobi/Rapporteur
Mary Ann Seday	PSI - Chairperson
Augustine Ngindu	WHO-Kenya
James Sekento	Division of Malaria Control
Eric Were	Division of Malaria Control
Christine Mbuli	Division of Malaria Control
Dejan Zurovac	KEMRI/Wellcome Trust Programme
Emelda Okiro	KEMRI/Wellcome Trust Programme
Boniface Isindu	Division of Malaria Control
Rebecca Kiptui	Division of Malaria Control
Ayub Manya	Division of Malaria Control
Kiambo Njagi	Division of Malaria Control
Evan Mathenge	Kenya Medical Research Institute
Gladys Echesa	Health Management Information Systems
Jackson Muriithi	Division of Child and Adolescent Health
Jedida Obure	Division of Child and Adolescent Health
Simon Mutie	Ministry of Special Programmes
David Mwangi	
Abdisalan Noor	KEMRI-Wellcome Trust Programme
Lawrence Muthami	Kenya Medical Research Institute
Faith Okalebo	UON - School of Pharmacy
Wanjiru Gichuhi	UON - Pop. Studies Research Institute
Florence Mutua	UON - School of Medicine

4. Malaria parasite control and malaria in pregnancy

Name	Organization
Dismas Ongore	University of Nairobi/Rapporteur
Mbogo Bunyi	PSI-K/Chairperson
Jane Carter	AMREF
Dorcas Alusala	Division of Malaria Control
John Nyamuni	Division of Malaria Control
James Akudian	Division of Malaria Control
Samuel Kigen	Division of Malaria Control
Andrew Nyandigisi	Division of Malaria Control
Dorothy Memusi	Division of Malaria Control
Ephantus Murigi	Division of Malaria Control
Peter Ouma	KEMRI-CDC
Ouma Yamo	AMREF

5. Advocacy, communication and social mobilization

Name	Organization
J.G. Muriithi	Division of Child and Adolescent Health
Hemston Waweru	Department of Health Promotion
James Sekento	Division of Malaria Control
Belina Shisia	Department of Health Promotion
Daniel Nyamongo	World Health Organization
Terry Muchoki	PSI-Kenya
John Moro	Division of Malaria Control
Phares G. Nkari	Department of Health Promotion
Valerie Omondi	MERLIN
Josephine Ojiambo	Rapporteur
Judith Karia	Department of Health Promotion
Albert Wandago	Private Sector Consultant
Suleman Malik	UNICEF
Irene Chami	Research Triangle International
Liza Kimbo	Academy for Educational Development

6. Procurement and supply management

Name	Organization
Mtana Lewa	Riteka Consultancy / Rapporteur
Mildred Shieshia	MSH/Chairperson
Dorothy Memusi	DOMC
Charles K Mburu	KEMSA/PSCMC
Joan Kamondia	Pharmacist, Riteka Consultancy
James Mwenda	Mission for Essential Drugs and Supplies
Joan Wakori	KEMSA
Paul Kiptoo	Division of Malaria Control
James Sakwa	Kenya Medical Laboratories Board
Nelima Wesangula	Department of Pharmacy
Suzanne Hoza	Research Triangle International

Annex D: Membership of the NMS Drafting Team

Participants in the Thematic Harmonization and NMS Drafting Meeting 13-19 March 2009

No.	Name	Organization
1	Akpaka Kalu	World Health Organization
2	Andrew Nyandigisi	Division of Malaria Control
3	Augustine Ngindu	World Health Organization
4	Ayub Manya	Division of Malaria Control
5	Belina Shisia	Department of Health Promotion
6	Boniface Isindu	Division of Malaria Control
7	Caroline Maina	Division of Malaria Control
8	Christine Mbuli	Division of Malaria Control
9	Dismas Ongore	University of Nairobi
10	Dorcas Alusala	Division of Malaria Control
11	Dorothy Memusi	Division of Malaria Control
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13	Elizabeth Juma	Division of Malaria Control
14	Ephantus Murigi	Division of Malaria Control
15	Ephantus W. Kabiru	Kenyatta University
16	Eric Were	Division of Malaria Control
17	Eunice Njeru	Division of Malaria Control
18	Evan Mathenge	Kenya Medical Research Institute (KEMRI)
19	Florence Mutua	University of Nairobi
20	Gladys Echesa	Health Management Information Systems
21	Hemston M. Waweru	Department of Health Promotion
22	Jacob Kimani	Division of Malaria Control
23	James Akudian	Division of Malaria Control
24	James Sang	Division of Malaria Control
25	James Sekento	Division of Malaria Control
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38	Regina Karonji	Division of Malaria Control
39	Samuel Kigen	Division of Malaria Control
40	Solomon Nzioka	Malaria Programme Review Consultant
41	Stephen Munga	Kenya Medical Research Institute
42	Teresa Kinyari Mwendwa	University of Nairobi
43	Valerie Omondi	MERLIN/KeNAAM
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Annex E: Participants in the Draft NMS Stakeholder Review Meeting

Participants in the Stakeholders Meeting, 29-30 April 2009

No.	Name	Organization
1	Abdisalan M. Noor	KEMRI-Wellcome Trust Programme
2	Agatha W. Kahara	National Mirror Newspaper
3	Alice N. Mwangangi	Division of Reproductive Health, Nairobi
4	Anthony Kanja	Population Services International
5	Athuman Chiguzo	Management Sciences for Health
6	Belina Shisia	Department of Health Promotion
7	Boniface Isindu	Division of Malaria Control
8	Caroline Maina	Division of Malaria Control
9	Catherine Shitemi	Ministry of Medical Services
10	Cecily Abuje	Journalist
11	Christine Chacha	Ministry of Education
12	Christine Mbuli	Division of Malaria Control
13	Daniel G. Wachira	USAID/President's Malaria Initiative
14	David N. Ngoma	District Public Health Officer, Mombasa
15	David Nderu	KEMRI – Nairobi
16	Dorcas Mugure	Division of Clinical Services, Ministry of Medical Services
17	Dr. Kassim A. S	Global Child Hope (civil society organization)
18	Dr .Oscar Endekwa	Ministry of Public Health and Sanitation
19	Dr. Akpaka Kalu	World Health Organization
20	Dr. Benard Ogutu	Kenya Medical Research Institute
21	Dr. Dejan Zurovac	KEMRI-Wellcome Trust Programme
22	Dr. Diana Menya	School of Public Health, Moi University
23	Dr. Dunstan Mukoko	Division of Vector Borne and Neglected Diseases
24	Dr. James M. Riungu	Mission for Essential Drugs and Supplies
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29	Dr. Mildred Shieshia	Management Sciences for Health

30	Dr. Waqo D. Ejersa	Provincial Medical Officer, Rift Valley Province
31	Edward Mwangi	Kenya Network of NGOs against Malaria (KeNAAM)
32	Elizabeth Juma	Division of Malaria Control
33	Elizabeth Washika	Division of Reproductive Health
34	Ellen W. Irungu	Division of Child and Adolescent Health
35	Eunice Njeru	Division of Malaria Control
36	Fredina N. Nzau	Ministry of Internal Security – Provincial Administration
37	Galole Dima	District Public Health Nurse, Kwale
38	George Wanzala	Ministry of Public Health and Sanitation
39	Gladys Echesa	Health Management Information Systems
40	Hassan Osman	Global Child Hope (civil society organization)
41	Isaac Rotino	District Public Health Officer, Nandi North
42	Joaquim Canelas (KIM)	Aid Managers Limited (consultant)
43	Jacinta Opondo	Division of Malaria Control
44	Jacob M. Kimani	Division of Malaria Control
45	James Akudian	Division of Malaria Control
46	James N. Mutunga	Kenya Medical Research Institute
47	James Sekento	Division of Malaria Control
48	Joel Nkako	Division of Environmental Health
49	John Moro	Division of Malaria Control
50	Josephine Karuri	Management Sciences for Health
51	Kevin Lumwaji	Ministry of Public Health and Sanitation
52	Mary Kazungu	National Public Health Laboratories
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54	Michael Musumbi M.	Smile Africa (civil society organization)
55	Munga Stephen	Kenya Medical Research Institute
56	Naftaly Mwaura	African Science News Service (media)
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61	Rachael Kiiru	Public Health Officer, Nairobi
62	Regina Karonji	Division of Malaria Control
63	Rocky Nakazea	District Medical Laboratory Technologist, Kwale
64	Rogansia Madeda	Public Health Officer, Bungoma District
65	Rose Micheni	District Medical Officer of Health, Embu
66	Ruth Charo	African Development Bank, Kenya
67	S.K. Muthinji	District Public Health Officer, Nyeri
68	Samuel Obura	Association of Public Health Officers of Kenya
69	Selina Cherutich	Division of Reproductive Health
70	Shadrack Kemei	District Public Health Officer, Nandi North
71	Solomon Nzioka	Health Development Consultants
72	Terry Muchoki	Population Services International
73	Timothy Olubero	Provincial Public Health Officer, Western Province
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76	Dr. Jackson Kioko	Provincial Medical Officer, Nyanza Province

Annex F: Malaria Programme Review Phase 2 Team

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Elizabeth Juma	Division of Malaria Control
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Ephantus Murigi	Division of Malaria Control
Eric Were	Division of Malaria Control
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Jacinta Opondo	Division of Malaria Control
Jacob Kimani	Division of Malaria Control
James Akudian	Division of Malaria Control
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Annex G: Members of the NMS and M&E Plan Finalization Team

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Andrew Wamari	DOMC
Ayub Manya	DOMC
Christine Mbuli	DOMC
Dejan Zurovac	KEMRI-Wellcome Trust Programme
Dorcas Alusala	DOMC
Elizabeth Juma	DOMC
Gladys Echesa	HMIS
Gladys Tetteh	CDC/PMI
John Moro	DOMC
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Mildred Shieshia	MSH/SPS
Rebecca Kiptui	DOMC
Yazoume Ye	CDC/PMI

Annex H: Participants in the Final NMS Draft Review Meeting

Participants in the Stakeholders Meeting, 1 October 2009

Name	Organization
Dr. S.K. Sharif	Director of Public Health and Sanitation
Dr. Willis Akhwale	Head, Department of Disease Prevention and Control
Afenorki Abraham	Merlin – Health director
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Andrew Wamari	Division of Malaria Control
Assumpta Matekwa	Public Health Nurse, Western Province
Athuman Chiguzo	Management Sciences for Health/SPS
Bernhards Ogutu	KEMRI
C.M. Wanganga	Provincial Disease Surveillance Officer, Central Province
Carol Maina	Division of Malaria Control
Charles Kinuthia	M&E Unit, MOPHS
Checky Abuje	Public Health Officer, Budalangi
David N. Ngoma	District Public Health Officer, Coast
David Ochieng	Lecturer, Kenya Medical Training College (KMTC), Nairobi
Dejan Zurovac	KEMRI-Wellcome Trust Programme
Dr. Agneta Mbithi	Division of Malaria Control
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Dr. Andrew Nyandigisi	Division of Malaria Control
Dr. Augustine Ngindu	National Professional Officer, WHO
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Dr. Dunstan Mukoko	Division of Vector Borne and Neglected Diseases
Dr. Elizabeth Juma	Division of Malaria Control
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Dr. Josephine Ojiambo	Solutions for Health
Dr. Joyce Onsongo	Disease Prevention Control Officer, WHO
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Dr. Rebecca Kiptui	Division of Malaria Control
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Gamaliel Omondi	Provincial Public Health Officer, Nyanza
Hassan Osman	Global Child Hope
Jacinta Opondo	Division of Malaria Control
James M. Kiburi	Ministry of Education (SADE)
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Jane Dolla	Sustainable Health Foundation
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Matiko Chacha	Life Care and Support (LICASU) Kenya
Mbogo Bunyi	Population Services – Kenya
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Munga Stephen	KEMRI
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Annex I: Detailed NMS Financing Plan

Cost centres	NMS (2009–2017) cost estimates (Millions of US dollars)								
	Financial years								Total cost
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	
Objective 1: By 2013, to have at least 80% of people living in malaria risk areas using appropriate malaria prevention interventions	291.802	130.222	48.048	188.237	53.187	52.229	200.072	57.063	1,020.859
Strategy 1.1 – Universal distribution of LLINs through appropriate channels	166.322	24.722	22.612	159.526	26.455	24.355	170.563	28.323	622.878
Activity 1.1.1: LLIN mass distribution to households	128.001	2.662	-	136.347	2.695	-	145.597	2.731	418.034
Activity 1.1.2: ITNs for distribution to schools (endemic and epidemic prone areas	-	16.799	-	-	-	-	-	-	16.799
Activity 1.1.3: LLINs routine distribution through ANC and MCH in all malaria risk areas	17.934	18.383	18.844	19.316	19.800	20.296	20.805	21.327	156.704
Activity 1.1.4: Provision of LLINs through social marketing channels	3.587	3.677	3.769	3.863	3.960	4.059	4.161	4.265	31.341
Strategy 1.2 – Indoor residual spraying in the targeted areas and other IVM activities	120.287	102.301	20.434	25.341	24.176	24.646	26.107	25.478	368.770
Activity 1.2.1: Conduct spraying in the targeted epidemic prone and fringe areas	100.957	83.952	1.824	-	-	-	-	-	186.732
Activity 1.2.2: IRS in schools in epidemic and fringe areas	10.273	10.415	10.639	-	-	-	-	-	31.327
Activity 1.2.3: IRS in prisons in epidemic-prone and fringe areas	6.458	6.050	6.050	-	-	-	-	-	18.557
Activity 1.2.4: Develop GPS mapping system for planning and monitoring IRS activities	2.509	1.877	1.877	-	-	-	-	-	6.264
Activity 1.2.5: Source reduction of vectors in epidemic prone and arid/semi arid zones	-	-	-	25.183	24.075	24.557	25.929	25.377	125.120
Activity 1.2.6: Environmental management for vector control	0.090	0.007	0.044	0.159	0.101	0.089	0.179	0.101	0.770
Strategy 1.3 – Support malaria-free schools initiative									-
Activity 1.3.1: ITN/LLIN distribution in schools (LLINs and distribution costs)	Costed under activity 1.1.2								
Activity 1.3.2: Implementation of IRS in schools (insecticides; operational costs including training)	Costed under activity 1.2.2								
Activity 1.3.3: Testing and treatment in schools (AL; RDTs)	Costed under activity 1.2.2								
Activity 1.3.4: Mainstream malaria control in school curriculum	Costed under task 5.2.1.1								
Strategy 1.4 – Provision of IPTp at antenatal clinics	5.193	3.199	5.002	3.370	2.556	3.228	3.401	3.261	29.211
Activity 1.4.1: Update and disseminate IPT guidelines (50 per district + 300 for national level, $5/copy)	0.136	-	-	0.136	0.000	-	0.136	-	0.409
Activity 1.4.2: Support supervision of MIP activities by DOMC/RH, PHMTs and DHMTs	1.833	1.833	1.833	1.833	1.112	1.833	1.833	1.833	13.942
Activity 1.4.3: Procurement and distribution of effective medicines for IPTp	0.379	0.388	0.398	0.408	0.418	0.429	0.439	0.450	3.309
Activity 1.4.4: Conduct a review of IPTp implementation (every three years)	0.048	-	-	-	0.048	-	-	-	0.096
Activity 1.4.5: Training of service providers in IPTp (public, private, NGOs)	1.805	-	1.805	-	-	-	-	-	3.609
Activity 1.4.6: Mobilization and advocacy for MIP	0.990	0.975	0.964	0.990	0.975	0.964	0.990	0.975	7.824
Activity 1.4.7: Hold quarterly meetings of MIP TWGs	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.019

Cost centres	NMS (2009–2017) cost estimates (Millions of US dollars)								
	Financial years								Total cost
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	
Objective 3: To ensure that all malaria epidemic prone districts have the capacity to detect and preparedness to respond to malaria epidemics annually by 2010	8.027	8.540	8.003	8.508	8.807	8.373	8.985	9.397	68.641
Strategy 3.1 – Capacity building for epidemic preparedness and response	0.382	0.023	0.023	0.382	0.023	0.023	0.382	0.023	1.259
Activity 3.1.1: Update epidemic preparedness guidelines for malaria	0.028	0.000	0.000	0.028	-	-	0.028	-	0.085
Activity 3.1.2: Risk mapping of epidemic prone areas (Mapping of villages, potential breeding sites in epidemic prone districts)	-	-	-	-	-	-	-	-	-
Activity 3.1.3: Review epidemic preparedness and response plans for district teams	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.181
Activity 3.1.4: Training of HW at district and facility level in epidemic preparedness and response	0.331	-	-	0.331	-	-	0.331	-	0.993
Strategy 3.2 – Disease surveillance capacity strengthening	7.645	8.517	7.981	8.126	8.785	8.350	8.603	9.374	67.382
Activity 3.2.1: Development of guidelines and tools for malaria active surveillance in epidemic-prone and low transmissions areas	-	0.042	-	-	0.042	-	-	0.042	0.127
Activity 3.2.2: Training of disease surveillance officers on active surveillance of malaria in epidemic prone and low transmissions areas	-	0.581	-	-	0.581	-	-	0.581	1.743
Activity 3.2.3: Supplies for screening members of households of index cases of confirmed malaria - RDTs	0.400	0.410	0.421	0.432	0.444	0.550	0.662	0.780	4.099
Activity 3.2.4: Procurement of AL for treatment of malaria *Plasmodium falciparum* positive household members	Costed under task 2.1.8.1								
Activity 3.2.5: District disease surveillance teams visit households	2.590	2.659	2.729	2.801	2.874	2.950	3.028	3.108	22.739
Activity 3.2.6: Enhance communication for malaria surveillance	-	0.226	0.232	0.238	0.245	0.251	0.258	0.265	1.715
Activity 3.2.7: Establish epidemic preparedness teams at district	0.056	-	-	0.056	-	-	0.056	-	0.169
Activity 3.2.8: Revise malaria epidemic thresholds for health facilities annually	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	1.790
Activity 3.2.9: Weekly surveillance meetings held at district and lower levels during the malaria season	0.394	0.394	0.394	0.394	0.394	0.394	0.394	0.394	3.152
Activity 3.2.10: Conduct epidemic post mortems or audits for all epidemic prone districts	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.299
Activity 3.2.11: Collation and analysis of outbreak reports at national level	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.037
Activity 3.2.12: Maintain malaria epidemic kits including buffer stocks for malaria epidemic management	3.939	3.939	3.939	3.939	3.939	3.939	3.939	3.939	31.512

Cost centres	NMS (2009–2017) cost estimates (Millions of US dollars)								
	Financial years								Total cost
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	
Objective 3: By 2010, to ensure that all malaria epidemic prone districts have the capacity to detect and are prepared to respond to malaria epidemics annually	8.027	8.540	8.003	8.508	8.807	8.373	8.985	9.397	68.641
Strategy 3.1 - Capacity building for epidemic preparedness and response	0.382	0.023	0.023	0.382	0.023	0.023	0.382	0.023	1.259
Activity 3.1.1: Update epidemic preparedness guidelines for malaria	0.028	0.000	0.000	0.028	-	-	0.028	-	0.085
Activity 3.1.2: Risk mapping of epidemic prone areas (Mapping of villages, potential breeding sites in epidemic prone districts)	-	-	-	-	-	-	-	-	-
Activity 3.1.3: Review epidemic preparedness and response plans for district teams	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.181
Activity 3.1.4: Training of HW at district and facility level in epidemic preparedness and response	0.331	-	-	0.331	-	-	0.331	-	0.993
Strategy 3.2 – Disease surveillance capacity strengthening	7.645	8.517	7.981	8.126	8.785	8.350	8.603	9.374	67.382
Activity 3.2.1: Development of guidelines and tools for malaria active surveillance in epidemic-prone and low transmissions areas	-	0.042	-	-	0.042	-	-	0.042	0.127
Activity 3.2.2: Training of disease surveillance officers on active surveillance of malaria in epidemic prone and low transmissions areas	-	0.581	-	-	0.581	-	-	0.581	1.743
Activity 3.2.3: Supplies for screening members of households of index cases of confirmed malaria - RDTs	0.400	0.410	0.421	0.432	0.444	0.550	0.662	0.780	4.099
Activity 3.2.4: Procurement of AL for treatment of malaria *Plasmodium falciparum* positive household members	Costed under task 2.1.8.1								
Activity 3.2.5: District disease surveillance teams visit households	2.590	2.659	2.729	2.801	2.874	2.950	3.028	3.108	22.739
Activity 3.2.6: Enhance communication for malaria surveillance	-	0.226	0.232	0.238	0.245	0.251	0.258	0.265	1.715
Activity 3.2.7: Establish epidemic preparedness teams at district	0.056	-	-	0.056	-	-	0.056	-	0.169
Activity 3.2.8: Revise malaria epidemic thresholds for health facilities annually	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	1.790
Activity 3.2.9: Weekly surveillance meetings held at district and lower levels during the malaria season	0.394	0.394	0.394	0.394	0.394	0.394	0.394	0.394	3.152
Activity 3.2.10: Conduct epidemic post mortems or audits for all epidemic prone districts	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.299
Activity 3.2.11: Collation and analysis of outbreak reports at national level	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.037
Activity 3.2.12: Maintain malaria epidemic kits including buffer stocks for malaria epidemic management	3.939	3.939	3.939	3.939	3.939	3.939	3.939	3.939	31.512

Cost centres	NMS (2009–2017) cost estimates (Millions of US dollars)								
	Financial years								Total cost
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	
Objective 4: By 2011, to strengthen surveillance, monitoring and evaluation systems so that key malaria indicators are routinely monitored and evaluated in all malarious districts	7.887	3.325	3.985	5.424	6.333	4.011	5.959	5.463	42.388
Strategy 4.1 – Capacity strengthening for malaria surveillance	2.525	0.547	1.662	1.940	3.706	2.247	1.938	3.712	18.278
Activity 4.1.1: Develop and disseminate M&E framework and plan	0.060	-	-	0.060	-	-	0.059	-	0.178
Activity 4.1.2: Support M&E technical working group	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.087
Activity 4.1.3: Support scale up malaria surveillance in collaboration with IDSR and HMIS	0.026	0.341	0.026	0.026	2.070	0.026	0.026	2.076	4.616
Activity 4.1.4: Malaria surveillance monitoring and supervision	2.429	0.196	1.625	1.844	1.625	2.210	1.843	1.625	13.397
Strategy 4.2 – Strengthen facility and school based malaria sentinel surveillance	0.730	0.710	0.710	0.730	0.710	0.710	0.730	0.710	5.740
Activity 4.2.1: Malariometric surveys	0.495	0.487	0.487	0.495	0.487	0.487	0.495	0.487	3.923
Activity 4.2.2: Support monitoring of the quality of malaria case management in sentinel sites	0.235	0.223	0.223	0.235	0.223	0.223	0.235	0.223	1.818
Strategy 4.3 – Strengthening malaria data management systems	0.493	0.087	0.087	0.091	0.387	0.087	0.087	0.091	1.412
Activity 4.3.1: Update malaria databases (country database, MIAS)	52,663.600	24,843.600	24,843.600	24,843.600	52,663.600	24,843.600	24,843.600	24,843.600	254,388.800
Activity 4.3.2: Strengthen ICT infrastructure at national, provincial and district levels	0.326	0.054	0.054	0.054	0.326	0.054	0.054	0.054	0.979
Activity 4.3.3: Roll out MIAS to the district level	0.114	0.008	0.008	0.012	0.008	0.008	0.008	0.012	0.178
Strategy 4.4 – Conduct and support community surveys	2.527	0.377	0.953	2.082	0.957	0.395	2.623	0.377	10.291
Activity 4.4.1: Pharmaco-vigilance for antimalarials	0.304	0.289	0.289	0.304	0.289	0.289	0.303	0.289	2.358
Activity 4.4.2: Post marketing surveillance of malaria medicines	0.200	-	0.312	-	0.316	-	0.316	-	1.143
Activity 4.4.3: Conduct malaria medicine efficacy monitoring studies every 2 years	0.265	-	0.265	-	0.265	-	0.265	-	1.058
Activity 4.4.4: Monitoring of vector susceptibility to insecticides	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.341
Activity 4.4.5: Conduct malaria indicator survey	1.653	-	0.000	1.690	-	0.000	1.652	-	4.995
Activity 4.4.6: Reanalysis of KDHS Malaria Indicators	0.018	-	-	-	-	0.018	-	-	0.036
Activity 4.4.7: Conduct entomological surveys	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.360
Strategy 4.5 – Operational research and translation	1.554	1.554	0.522	0.522	0.522	0.522	0.522	0.522	6.242
Activity 4.5.1: Meetings of the malaria control operational research working group to define malaria OR agenda and coordinate malaria research activities	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.155
Task 4.5.1.1: Retreat for TWG to plan and follow up OR priorities	19,359.200	19,359.200	19,359.200	19,359.200	19,359.200	19,359.200	19,359.200	19,359.200	154,873.600
Activity 4.5.2: Provide OR grants to research institutions	1.454	1.454	0.422	0.422	0.422	0.422	0.422	0.422	5.440
Activity 4.5.3: Annual malaria research to policy conference	0.081	0.081	0.081	0.081	0.081	0.081	0.081	0.081	0.648
Strategy 4.6 – Human resource capacity building in surveillance, monitoring and evaluation	0.058	0.050	0.050	0.058	0.050	0.050	0.058	0.050	0.424
Activity 4.6.1: Training of DOMC staff in M&E	0.008	-	-	0.008	-	-	0.008	-	0.024
Activity 4.6.2: Training of M&E staff in surveillance, GIS and data management	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.400

Cost centres	NMS (2009–2017) cost estimates (Millions of US dollars)								
	Financial years								Total cost
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	
Objective 5: By 2014, to strengthen advocacy, communication and social mobilization capacities for malaria control to ensure that at least 80% of people in malarious areas have knowledge on prevention and treatment of malaria	3.780	3.502	3.508	3.774	3.510	3.501	3.782	3.503	28.858
Strategy 5.1 – Capacity strengthening for advocacy, communication and social mobilization.	0.793	0.614	0.613	0.794	0.614	0.613	0.794	0.614	5.449
Activity 5.1.1 Develop and disseminate ACSM policy and guidelines	0.119	-	-	0.119	-	-	0.119	-	0.356
Activity 5.1.2 Capacity building for health workers and other service providers on ACSM	0.060	-	-	0.061	-	-	0.062	-	0.183
Activity 5.1.3: Hold quarterly meetings of malaria ACSM groups at all levels	0.510	0.510	0.510	0.510	0.510	0.510	0.510	0.510	4.079
Activity 5.1.4: Conduct periodic supervisory visits	0.104	0.104	0.103	0.104	0.104	0.103	0.104	0.104	0.831
Strategy 5.2 – Multisector IEC/BCC	2.987	2.888	2.895	2.980	2.896	2.888	2.988	2.889	23.410
Activity 5.2.1: Support priority implementing partners for IEC and BCC	0.673	0.673	0.673	0.673	0.673	0.673	0.673	0.673	5.386
Activity 5.2.2: Document malaria control best practices	0.092	-	-	0.092	-	-	0.092	-	0.275
Activity 5.2.3: Production of 5 minute documentaries on intervention areas and best practices	0.381	0.373	0.381	0.373	0.381	0.373	0.381	0.373	3.014
Activity 5.2.4: Support provincial/district level ACSM activities (location level malaria field days and competitions)	0.964	0.964	0.964	0.964	0.964	0.964	0.964	0.964	7.712
Activity 5.2.5: Support activities/visits by the malaria champion	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.091
Activity 5.2.6: Commemorate World Malaria Day	0.849	0.849	0.849	0.850	0.850	0.850	0.850	0.850	6.798
Activity 5.2.7: Publication of quarterly and annual advocacy bulletins	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.133
Strategy 5.3 – Development of appropriate advocacy for uptake of specific malaria interventions	-	-	-	-	-	-	-	-	-
Activity 5.3.1: IEC support for ITN mass distribution	Costed under activity 1.1.1, task 1.1.1.15								
Activity 5.3.2: IEC support for IRS	Costed under activity 1.2.1. task 1.2.1.6								
Activity 5.3.3: Mobilization and advocacy for MIP	Costed under activity 1.3.7								
Activity 5.3.4: IEC support to AMFm in the private sector	Costed under activity 2.2.5								

Cost centres	NMS (2009–2017) cost estimates (Millions of US dollars)								
	Financial years								Total cost
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	
Objective 6: By 2013, to strengthen capacity in programme management in order to achieve malaria programme objectives at all levels of the health care system	15.537	14.100	14.496	14.369	14.891	14.382	14.930	14.096	116.802
Strategy 6.1 – Capacity strengthening for policy and coordination	0.885	0.722	0.722	0.885	0.722	0.722	0.885	0.722	6.264
Activity 6.1.1: Develop/update and disseminate malaria control policy document.	0.163	-	-	0.163	-	-	0.163	-	0.490
Activity 6.1.2: Strengthen coordination and integration of malaria control into the health sector annual operational planning process	0.112	0.112	0.112	0.112	0.112	0.112	0.112	0.112	0.897
Activity 6.1.3: Conduct quarterly MICC meetings	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.275
Activity 6.1.4: Participate in Regional and international conferences and meetings	0.131	0.131	0.131	0.131	0.131	0.131	0.131	0.131	1.050
Activity 6.1.5: Maintain current core staff of DOMC	0.444	0.444	0.444	0.444	0.444	0.444	0.444	0.444	3.552
Strategy 6.2 – Strengthen malaria programme at the district and provincial levels	0.054	-	0.053	-	0.053	-	0.053	-	0.213
Activity 6.2.1: Create Malaria focal point position at the Provincial and District levels	0.001	-	-	-	-	-	-	-	0.001
Activity 6.2.2: Train Malaria focal point persons at the district and Provincial position for malaria activities	0.053	-	0.053	-	0.053	-	0.053	-	0.212
Strategy 6.3 – Strengthen infrastructure at the national, provincial and district levels	6.306	5.565	5.565	5.565	6.303	5.568	5.565	5.565	46.003
Activity 6.3.1: Renovate/ expand DOMC office space structure	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.560
Activity 6.3.2: Provide office equipment and operational support for district, provincial and national officers	6.236	5.495	5.495	5.495	6.233	5.498	5.495	5.495	45.443
Strategy 6.4 – Strengthen activity and performance monitoring	1.028	0.962	1.305	0.962	0.962	0.962	1.470	0.962	8.613
Activity 6.4.1: Conduct quarterly programme meetings at national level	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.131
Activity 6.4.2: Bi-annual planning and review meetings with all partners to improve coordination (national Level)	0.025	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.372
Activity 6.4.3: Conduct mid-term and end-term review of the NMS and update current or develop new NMS	0.090	-	0.343	-	-	-	0.508	-	0.941
Activity 6.4.4: Facilitate quarterly performance review and planning meetings at provincial level	0.768	0.768	0.768	0.768	0.768	0.768	0.768	0.768	6.146
Activity 6.4.5: Produce and disseminate annual business plans	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	1.024
Strategy 6.5 – Strengthen resource mobilization capacity to improve malaria control financing	0.166	0.164	0.164	0.164	0.164	0.164	0.164	0.164	1.313
Activity 6.5.1: Recruit the Planning Officer	0.038	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.290
Activity 6.5.2: Hold roundtable quarterly donor meetings	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.093
Activity 6.5.3: Proposal development to partners (such as GFATM)	0.116	0.116	0.116	0.116	0.116	0.116	0.116	0.116	0.930
Strategy 6.6 – Strengthen human resource capacities in malaria endemic area	6.525	6.222	6.222	6.222	6.222	6.500	6.222	6.218	50.351
Activity 6.6.1: Recruit Logistician for programme	0.038	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.290
Activity 6.6.2: Recruit priority health workers	6.016	6.000	6.000	6.000	6.000	6.000	6.000	6.000	48.016
Activity 6.6.3: Malaria planning and management course	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.177	1.445
Activity 6.6.4: Collaboration with training institutions on curriculum updates	0.289	0.005	0.005	0.005	0.005	0.283	0.005	0.005	0.599
Strategy 6.7 – Strengthen procurement and supply management systems for malaria medicines and commodities	0.574	0.466	0.466	0.572	0.466	0.466	0.572	0.466	4.045
Activity 6.7.1: Conduct quantification of antimalaria medicines (IPT, case management), ITNs, laboratory and other medical supplies	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.037
Activity 6.7.2: Recruit a Logistician for DOMC	0.038	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.290
Activity 6.7.3: Support the implementation of LMIS for malaria commodities	0.531	0.425	0.425	0.531	0.425	0.425	0.531	0.425	3.718

Annex J: M&E Performance Framework

Table J1: M&E framework for overall NMS goal

Goal: By 2017, to have reduced morbidity and mortality caused by malaria in the various epidemiological zones by two thirds of the 2007/08 level

Impact	Sources	Responsibility	Frequency	Baseline		Targets (2010–2017)							
				Data	Source /year	'10	'11	'12	'13	'14	'15	'16	'17
Inpatient* malaria cases among children <5yrs per 1,000 persons/year	Routine surveillance	DOMC M&E / HMIS	Quarterly	–	HMIS				3				2
Total inpatient* malaria cases per 1,000 persons/year	Routine surveillance	DOMC M&E / HMIS	Quarterly	4	HMIS 2008/09				3				2
Inpatient malaria deaths among children <5yrs per 1,000 persons/year	Routine surveillance	DOMC M&E / HMIS	Quarterly	–	HMIS				2				1
Total inpatient* malaria deaths per 1,000 persons/year	Routine surveillance	DOMC M&E / HMIS	Quarterly	3	HMIS 2008/09				2				1
Confirmed outpatient malaria cases at health facility level among children <5 yrs, per 1,000 persons/year	Routine surveillance	DOMC M&E / HMIS	Monthly	54	HMIS 2008				36				18
Total confirmed outpatient malaria cases at health facility level per 1,000 persons/year	Routine surveillance	DOMC M&E / HMIS	Monthly	31	HMIS 2008				21				11
Clinical outpatient malaria cases at health facility level among children <5 yrs, per 1,000 persons/year	Routine surveillance	DOMC M&E / HMIS	Monthly	185	HMIS 2008				124				62
Total clinical outpatient malaria cases at health facility level per 1,000 persons/year	Routine surveillance	DOMC M&E / HMIS	Monthly	277	HMIS 2007				185				92
Slide/RDT positivity rate (TPR) at health facility level	Routine surveillance	DOMC M&E and Lab/ HMIS	Monthly	None	–	40%			27%				13%
Malaria parasitaemia prevalence (pf) rate among children under 5yrs in endemic areas (by microscopy)	Survey	DOMC M&E / KNBS	3 yrs	3.3	MIS 2007				2.2				1.1

*Inpatient data estimated as HMIS reporting rate are below 50%. These targets will be updated when more accurate data are obtained.

Table J2: M&E framework for Objective 1

Objective 1: By 2013, to have at least 80 per cent of people living in malaria risk areas using appropriate malaria prevention interventions

Outcome / coverage indicator	Source	Responsi-bility	Fre-quency	Baseline		Targets (2010–2017) (Percentage)							
				Data	Source/ year	'10	'11	'12	'13	'14	'15	'16	'17
Proportion of targeted population protected with ITN/LLIN	Survey	DOMC Vector Control and M&E /KNBS	2–3 years	None	-	80			80			80	
Proportion of households who own at least two ITN/LLINs	Survey	DOMC Vector Control and M&E /KNBS	2–3 years	22.5%	MIS 2007	100			100			100	
Proportion of children <5yrs who slept under an ITN/LLIN on night before a survey	Survey	DOMC Vector Control and M&E /KNBS	2–3 years	39.2%	MIS [2007]	80			80			80	
Proportion of pregnant women who slept under an ITN/LLIN on night before a survey	Survey	DOMC Vector Control and M&E /KNBS	2–3 years	39.8%	MIS 2007	80			80			80	
Proportion of people who slept under an ITN/LLIN on night before a survey	Survey	DOMC Vector Control and M&E /KNBS	2–3 years	None	-	80			80			80	
Proportion of school children in targeted schools who received and ITN/LLIN	Activity reports	DOMC Vector Control	Once	None	-		100						
Proportion of targeted schools sprayed annually	Activity reports	DOMC Vector Control and M&E	Annu-ally	None	-	100	100	100	100	100	100	100	100
Proportion of households in targeted areas sprayed in last 12 months	Supervi-sion reports	DOMC Vector Control	Annu-ally	80%	Activity report 2008	85	85	85	85	85	85	85	85
Proportion of population in targeted areas protected by IRS	Super-vision reports	DOMC Vector Control	Annu-ally	85%	Super-vision report 2008	85	85	85	85	85	85	85	85
Proportion of pregnant women who received 2 or more doses of IPTp during last pregnancy (within last 2 years)	Survey	DOMC Vector Control and M&E /KNBS	2–3 years	12.5%	MIS 2007	30			50			80	

Table J3: M&E framework for Objective 2

Objective 2: By 2013, to have 100 per cent of fever cases presenting to a health worker have access to prompt and effective diagnosis and treatment

Outcome / coverage indicator	Source	Responsi-bility	Fre-quency	Baseline		Targets (2010–2017) (Percentage)							
				Data	Source/ year	'10	'11	'12	'13	'14	'15	'16	'17
Proportion of patients with fever in last 2 weeks who received any antimalarial treatment (<5yrs and ≥5 yrs)	MIS	DOMC M&E/KNBS	3 years	None	-	40			100			100	
Proportion of patients with fever in last 2 weeks who received ACT within 24 hrs from onset of fever (<5yrs and ≥5 yrs)	MIS	DOMC M&E/ KNBS	3 years	15.2% (<5yrs)	MIS 2007	40			100			100	
Proportion of patients with fever in the last 2 weeks who had a finger or heel stick (<5 yrs and ≥5 yrs)	MIS	DOMC M&E/ KNBS	3 years	None		40			100			100	
Proportion of patients with gold standard diagno-sis of malaria who were prescribed ACT	National HF survey	DOMC M&E/ KNBS	3 years	None	-	30			100			100	
Proportion of patients with fever presenting to health facility who are tested for malaria with RDT or microscopy	Case mgt mon-itoring/ PMM survey	DOMC/ KEMRI WT	Bian-nual	None	-	50	60	80	100	100	100	100	100
Proportion of patients with fever presenting to health facility who are man-aged in accord-ance with national malaria guidelines	Case mgt mon-itoring/ PMM survey	DOMC/ KEMRI WT	Bian-nual	None	-	50	60	80	100	100	100	100	100
Proportion of patients pre-senting to HF with fever and ACT prescribed who had counsel-ling and ACT dispensing tasks performed according to national guidelines	Case mgt moni-toring/ PMM survey	DOMC/ KEMRI WT	Bian-nual	None	-	50	60	80	100	100	100	100	100

Continued

Table J3, *continued*: M&E framework for Objective 2

Objective 2: By 2013, to have 100 per cent of fever cases presenting to a health worker have access to prompt and effective diagnosis and treatment

Outcome / coverage indicator	Source	Responsibility	Frequency	Baseline		Targets (2010–2017) (Percentage)							
				Data	Source/ year	'10	'11	'12	'13	'14	'15	'16	'17
Proportion of health facilities having no stock out of ACTs / RDTs for 7 consecutive days in past 3 months (for each ACT weight band)	Case mgt monitoring/ PMM survey	DOMC/KEMRI WT	Biannual	None	-	50	60	80	100	100	100	100	100
Proportion of targeted health workers trained in malaria diagnosis and treatment	Activity reports	DOMC Case Management	Quarterly	50%	Activity report 2009	50	70	100	100	100	100	100	100
Median cost to patients, of full course of treatment (adult/child) with quality assured ACTs/non-quality assured ACTs/artemisinin monotherapy/ other anti-malarials, in private outlets	AMFm evaluation report	DOMC Case Management / Contractor	Every 2 years	None	-	40	60	80	80	80	80	80	80
Proportion of districts implementing community strategy that includes HMM	Activity reports	DOMC	Quarterly	0%	Activity report 2009	40	60	80	100	100	100	100	100
Proportion of patients with fever who tested positive by a CHW who were treated with ACT	Activity reports	DOMC	Quarterly	0%	Activity report 2009	40	60	80	100	100	100	100	100
Proportion of targeted districts with CHWs trained on HMM	Activity reports	DOMC	Quarterly	0%	Activity report 2009	40	60	80	100	100	100	100	100

Table J4: M&E framework for Objective 3

Objective 3: By 2010, to ensure that all malaria epidemic prone districts have the capacity to detect and preparedness to respond to malaria epidemics annually

Outcome / coverage indicator	Source	Respon-sibility	Fre-quency	Baseline		Targets (2010–2017) (Percentage)							
				Data	Source/ year	'10	'11	'12	'13	'14	'15	'16	'17
Proportion of target dis-tricts with functional sentinel facilities for epidemic detection and response	Super-vision reports	DOMC M&E and EPR	Quar-terly	60%	Super-vision reports 2009	80	100	100	100	100	100	100	100
Proportion of EPR sentinel facilities in target districts with updated surveillance graphs (alert thresholds) for detecting epidemics	District reports	DOMC EPR/ DDSOs	Annual	47%	District reports 2009	70	80	100	100	100	100	100	100
Proportion of target districts with an epidemic prepared-ness and response plan	Super-vision reports	DOMC EPR/ DDSOs	Annual	100%	Super-vision reports 2009	100	100	100	100	100	100	100	100
Proportion of target districts with adequate EPR resources in readiness for epidemics	Super-vision reports	DOMC EPR/ DDSOs	Annual	100%	Super-vision report 2009	100	100	100	100	100	100	100	100
Proportion of malaria epidemics detected within 2 weeks of onset	District reports	DOMC EPR/ DDSOs	Quar-terly	100%	District report 2009	100	100	100	100	100	100	100	100
Proportion of the detected epidemics properly managed as per the EPR guidelines	District reports	DOMC EPR/ DDSOs	Quar-terly	100%	Super-vision report 2009	100	100	100	100	100	100	100	100

Table J5: M&E framework for Objective 4

Objective 4: By 2011, to strengthen surveillance, monitoring and evaluation systems so that key malaria indicators are routinely monitored and timely evaluated in all malarious districts

Outcome / coverage indicator	Source	Responsi-bility	Fre-quency	Baseline		Targets (2010–2017) (Percentage)							
				Data	Source/ year	'10	'11	'12	'13	'14	'15	'16	'17
Proportion of target districts with updated EPR guidelines	Activity / super-vision reports	DOMC EPR	Annual	0%	Super-vision report 2009	50	100	100	100	100	100	100	100
Proportion of target group trained on M&E guidelines	Activity reports	DOMC M&E	Quar-terly	None	-	30	50	70	100	100	100	100	100
Proportion of districts with functional MIAS	Activity reports	DOMC M&E	Quar-terly	2%	Activ-ity report 2009	20	40	60	80	100	100	100	100
Proportion of scheduled surveys successfully conducted	Activity reports	DOMC M&E	Annually	None	-	100	100	100	100	100	100	100	100
Proportion of survey reports printed and disseminated within 6 months of survey completion	Activity reports	DOMC M&E	Annually	None	-	100	100	100	100	100	100	100	100
Proportion of target districts reporting on malaria disease surveillance	DDSR reports	DOMC EPR and M&E	Monthly	None	-	50	100	100	100	100	100	100	100

Table J6: M&E framework for Objective 5

Objective 5: By 2014, to strengthen advocacy, communication and social mobilization capacities for malaria control to ensure that at least 80 per cent of people in malarious areas have knowledge on prevention and treatment of malaria

Outcome / coverage indicator	Source	Responsibility	Frequency	Baseline		Targets (2010–2017) (Percentage)							
				Data	Source/ year	'10	'11	'12	'13	'14	'15	'16	'17
Proportion of districts with updated ACSM guidelines	Supervision reports	DOMC ACSM	Quarterly	0%	Activity report 2009	50	100	100	100	100	100	100	100
Proportion of targeted health workers and other service providers trained on updated ACSM guidelines	Activity reports	DOMC ACSM	Quarterly	0%	Activity report 2009	0	30	100	100	100	100	100	100
Proportion of health facilities supplied with updated ACSM material	Supervision reports	DOMC ACSM	Quarterly	10%	Supervision report 2009	30	60	80	100	100	100	100	100
Proportion of districts conducting World Malaria Day Activities	Activity reports	DOMC ACSM	Annual	70%	Activity reports 2009	70	80	80	80	80	80	80	80
Proportion of people reached by ACSM messages on malaria prevention and treatment	Surveys	DOMC M&E and ACSM	2–3 yrs	None	-	30	-	-	80	-	-	80	-
Proportion of people who correctly cite fever as the principal symptom of malaria	Surveys	DOMC M&E and ACSM	2–3 yrs	None	-	30	-	-	80	-	-	80	-
Proportion of mothers/care givers who have heard that ACT is an appropriate treatment for malaria	Surveys	DOMC M&E and ACSM	2–3 yrs	38.8 %	MIS 2007	50	-	-	80	-	-	80	-

Table J7: M&E framework for Objective 6

Objective 6: By 2013, to strengthen capacity in programme management in order to achieve malaria programmatic objectives at all levels of the health care system

Outcome / coverage indicator	Source	Responsibility	Frequency	Baseline		Targets (2010–2017) (Percentage)							
				Data	Source/ year	'10	'11	'12	'13	'14	'15	'16	'17
Proportion of malarious districts with current national malaria control strategies reflected in their annual plans	Activity reports	DOMC Prog. Management	Quarterly	0%	Activity reports 2009	40	60	80	100	100	100	100	100
Proportion of malarious districts with an formally designated and trained malaria focal point	Activity reports	DOMC Prog Management	Quarterly	0%	Activity reports 2009	30	70	80	100	100	100	100	100
Proportion of malarious districts supported with office equipment	Activity reports	DOMC Prog Management and M&E	Quarterly	0%	Activity reports 2009	30	70	80	100	100	100	100	100
Proportion of districts supervised as per the guidelines	Activity reports	DOMC Prog. Management and M&E	Quarterly	13%	GF activity reports 2009	30	50	65	80	80	80	80	80
Proportion of activities in the strategic plan which have been financed	Activity reports	DOMC Prog. Management	Quarterly	67%	Malaria business plan 2008/09	70	80	80	80	80	80	80	80
Proportion of malarious districts using the LMIS	Activity reports	DOMC	Quarterly	58%	LMIS reports 2008/09	60	70	80	100	100	100	100	100

Annex K: Terms of Reference for the Malaria Inter-Agency Coordinating Committee (MICC)

The MICC is the national technical coordinating agency for the national malaria control programme. The MICC's role is to advocate for and mobilize resources for malaria control and elimination in Kenya, agree on priority areas of investment, set national targets based on global and Roll Back Malaria targets for malaria control and elimination, support coordination of implementation activities, and monitor and review performance and progress.

Terms of Reference

1. To advise and guide the Ministry of Public Health and Sanitation and the Ministry of Medical Services on national malaria policy, strategies and priorities, including cross-border issues.
2. To advise and support the DOMC, MOPHS and MOMS in mobilizing resources for malaria control interventions.
3. To advise and guide the DOMC and other implementing partners on the content and organisation of their malaria work plans.
4. To act as a forum for exchange of information on partners' malaria control and research activities.
5. To identify and advise on strategic areas for coordination nationally and internationally.
6. To define and review the output of technical working groups and subcommittees and take account of their findings in formulating advice and recommending action.
7. To receive and review progress and performance reports against set targets.
8. To identify problems and obstacles to implementation of malaria control activities and recommend solutions.
9. To report to the MOPHS twice yearly on achievements and progress against objectives.

Membership

Permanent Secretary MOPHS (Chair)
Director of Public Health and Sanitation (Alternate Chair)
Head, Department of Disease Prevention and Control
Head, Technical Planning and Coordination
Head, Division of Malaria Control (Secretary)

Chief Pharmacist
Head of Curative Services
Deputy Secretary Finance
Head, Division of Vector Borne and Neglected Diseases
Head, Division of Reproductive Health
Head, Division of Child and Adolescent Health
Head, Division of Primary Health Care
Head, Department of Health Promotion
Head, Health Management Information System (HMIS)
Provincial Medical Officers (rotating, i.e., all PMOs attend one meeting each per year)
Chief Public Health Officer
Deputy Director Research and Development KEMRI
KEMRI/Wellcome Trust Programme
Ministry of Education
Ministry of Finance
Ministry of Information and Broadcasting
KEMRI/CDC
USAID/PMI
AMREF
World Health Organization
Department for International Development
United Nations Children's Fund
World Bank

Frequency of meetings

The Committee will meet quarterly, with the volume of business and hence frequency of meetings kept under review. Ad hoc meetings on specific business may be arranged in exceptional circumstances.

Annex L: Terms of Reference for the NMCP Technical Working Groups

Surveillance, Monitoring, Evaluation and Operations Research (SMEOR) Technical Working Group

Purpose	Terms of reference	Chair	Secretariat	Membership
To agree on mechanisms for monitoring and evaluating progress against strategic objectives and assess research needs and implica-tions of emerging evidence	▪ To agree on methods for measuring the indicators for malaria as stipulated by the National Malaria Strategy ▪ To identify the logistical and resource issues associated with applying the proposed methodology and make recommendations on the way forward ▪ To advise on the surveillance modalities for malaria control. ▪ To advise on methods and routes for disseminating the results of monitoring and evaluation and ensuring they are taken into account in strategic planning and review ▪ To form a subcommittee to oversee operation research issues including: ▪ To advise on needs for malaria research to support National Malaria Strategy implementation ▪ To set a prioritized research agenda for malaria control in Kenya as well as review progress in the various ongoing research activities ▪ To mobilize partners and advocate for funds for such research ▪ To identify and advise on emerging evidence and implications for policy and strategy ▪ To develop, and oversee the implementation of a strategy for dissemination of research findings relevant to National Malaria Strategy implementation ▪ To report regularly to MICC	Head, Disease Prevention and Control department	DOMC	DOMC, HMIS, KNBS, NCAPD, PMI, PSI, KeNAAM, DDSR, WHO, UNICEF, DVBD, KEMRI Partners, CDC, PMI/MSH, National Universities, ICIPE, AMREF, PPB, Technical Planning and Coordination

Malaria Research Technical Working Group

Purpose	Terms of Reference	Chair	Secretariat	Membership
To assess research needs and implications of emerging evidence	▪ To identify and advise on needs for malaria research to support *National Malaria Strategy* implementation ▪ To mobilize partners and advocate for funds for such research ▪ To monitor, collate and disseminate emerging research evidence nationally and international in relation to policy issues in the *National Malaria Strategy* ▪ To report regularly to the Malaria inter-agency coordinating committee (MICC)	KEMRI	DOMC	KEMRI, KEMRI Partners (CDC, Walter Reed Project, Wellcome Trust) DOMC, public universities, DVBD, ICIPE, AMREF, KeNAAM, Pyrethrum Board of Kenya, Development partners (PMI/USAID, PSI, MSH, WHO, UNICEF, World Bank), Health Sector Reform Secretariat

Vector Control Technical Working Group

Purpose	Terms of reference	Chair	Secretariat	Membership
To provide policy direction and technical support for Integrated vector management for malaria control activities	▪ To provide a forum for the private and public sector groups to consider and review policy direction and against solicited market research ▪ To solicit and tender targeted research on market-sizes and consumer behaviour ▪ To review modalities and costs of GOK/donor assisted targeted distribution of LLINs to populations at risk ▪ To liaise with the ACSM TWG on appropriate messaging to support vector control activities ▪ To provide forum for sharing of technical information with PCPB on new malaria vector control products ▪ To advise MICC on vector control policy directions	Head, Department of Disease Prevention and Control	Division of Malaria Control	DOMC, DDSR, DRH, Department of Primary Health Care, Division of Child and Adolescent Health, Private sector representation, PCPB, PSI, DVBD, UNICEF, DEH, KeNAAM, CHAK, WHO, PMI and partners, KEMRI, KEMRI/CDC, Ministry of Environment, Ministry of Local Government, Ministry of Agriculture, KEMSA, ICIPE

Advocacy Communication and Social Mobilization Technical Working Group

Purpose	Terms of reference	Chairman	Secretariat	Membership
To advise on advocacy, and communication for malaria control interventions.	▪ To advise on all aspects of the ACSM to support malaria control interventions including research, design, production, dissemination, monitoring and evaluation ▪ To contribute to and support the establishment of a network linking all stakeholders in advocacy and BCC in malaria ▪ To identify best practices in malaria control and prevention and provide technical advice on updating and dissemination of appropriate messages and best practices. ▪ To collaborate with Ministry of Education and Kenya Institute of Education on life-skills curriculum development for students and teachers ▪ To report regularly to the MICC	Head, Department of Health Promotion	DOMC	DOMC, Department of Health Promotion, Ministry of Education, Department of Information and Public Communications(Ministry of Information and Communication), Division of Community Strategy, Merlin, Division of Reproductive Health, Kenya Red Cross, Public Relations Officer (MOPHS), PMI/USAID, UNICEF, WHO, AMREF, PSI, World Vision, MEDS

Malaria in Pregnancy Technical Working Group

Purpose	Terms of reference	Chair	Secretariat	Membership
To advise on policy issues related to prevention and treatment of malaria in pregnancy	▪ To advise the MICC on policies and strategies including suitable products for IPTp ▪ To provide technical guidance for the implementation of activities for the prevention and treatment of malaria in pregnancy ▪ To review the performance of MIP on a regular basis ▪ To advise on operational research for the prevention and treatment of malaria in pregnancy ▪ To advise on curriculum review for pre-service and in-service training for health workers	Head, DRH	DOMC	DOMC, DRH, Division of Obstetrics and Gynaecology MOMS, University of Nairobi Department of Obstetrics and Gynaecology, MEDS, KEMRI, KEMSA, JHPIEGO, KMTC, WHO, UNICEF, PSI, CDC, Kenya Obstetrical and Gynaecological Society, Department of Health Promotion, Division of Community strategy, HMIS, Nursing Council of Kenya

Case Management Technical Working Group

Purpose	Terms of reference	Chair	Secretariat	Membership
To advise on policy issues related to diagnosis and treatment of malaria	▪ Provide policy guidelines on malaria treatment and chemoprophylaxis based on available evidence. ▪ Maintain a review of the quality of antimalaria drugs to ensure safe and effective antimalaria medicines are available in the market ▪ Monitor the implementation of the current treatment policy, identify problems and recommend solutions. ▪ Review pre-service and in-service training needs for case-management and laboratory diagnosis and recommend changes to curricula or training packages to meet these needs ▪ Technical advice on the quantification of antimalaria medicines and diagnostic equipment based on country needs ▪ Report regularly to and advise MICC on case management policy directions	Head, DOMC	DOMC	DOMC, PPB, KEMSA, KMA, University of Nairobi, MEDS, KEMRI KEMRI-Wellcome Trust, AMREF, Department of Pharmacy, Pharmaceutical Society of Kenya, Nursing and Clinical Officer National Councils, NPHLS, KMTC, WHO, UNICEF, PSI, MSH/SPS, NQCLS, Division of Child and Adolescent Health (DCAH), CDC

NOTES

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