REPUBLIC OF KENYA

Ministry of Health

KENYA MALARIA STRATEGY

2023-2027

NATIONAL MALARIA CONTROL PROGRAMME
MINISTRY OF HEALTH, KENYA

Komesha Malaria
Okoa Maisha

Towards a malaria-free Kenya

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2023—2027

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National Malaria Control Programme

Kenya Malaria Strategy 2023—2027

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Foreword

Malaria remains a significant public health concern in Kenya with one-third of the population living in areas with high risk of malaria. The Kenya Malaria Strategy 2023—2027 establishes a strategic framework for the delivery of malaria control and elimination interventions, along with a monitoring and evaluation performance framework. The strategy document incorporates the global guidance for malaria, including the Global Technical Strategy for Malaria 2016—2030 (2021 update), and responds to Kenya's Vision 2030 which focuses on shifting health outcomes from curative to preventive. It has been aligned with the Kenya Health Sector Strategic Plan 2023—2027. The defined strategies are guided by the Kenya Malaria Policy, which demonstrates an overall commitment to equity, human rights, and gender, with an emphasis on community participation and universal access to malaria interventions.

The Kenya Malaria Strategy sets ambitious targets achievable through collaborative partnerships between the Ministry of Health, other line Ministries of the Government of Kenya, and our development and implementing partners. It provides the necessary framework for the requisite collaborative approaches, including with the private sector, and a comprehensive articulation of the implementation arrangements at both national and county levels.

I urge all stakeholders to coordinate and take forward this strategy as we focus on our shared goal and vision of a malaria-free Kenya.

Dr. Deborah M. Barasa
Cabinet Secretary
Ministry of Health

Preface

The Kenya Malaria Strategy 2023—2027 was developed based on recommendations of a consultative, multi-stakeholder malaria programme review of the 2019—2023 malaria strategy. The new strategy therefore builds on the achievements and lessons learnt from the implementation of the previous strategy.

The strategy has set ambitious targets to reduce malaria incidence and deaths by 80 percent and 90 percent by 2027/28, respectively. In line with the Global Technical Strategy for Malaria 2016—2030 and, given the low burden of malaria in a vast area of the country, the strategy seeks to interrupt indigenous malaria transmission in select counties by 2027/28. The strategic directions provide a comprehensive plan and action across all interventions, including adoption of innovations and technologies. The strategy maintains the spirit of ensuring optimal coverage of impactful interventions.

I am confident that the adoption and implementation of the strategy will propel the country towards the vision of a malaria-free Kenya.

Ms. Mary Muthoni Muriuki, CBS
Principal Secretary, Public Health and Professional Standards
Ministry of Health

Acknowledgement

The Ministry of Health would like to thank all individuals and organisations who were involved in the development of the Kenya Malaria Strategy 2023—2027. We acknowledge and appreciate the guidance and technical direction from the World Health Organization (headquarters, Africa Regional Office, and country office). The development of the strategy would not have been possible without the participation and technical input of members of the thematic committees of experts under the leadership of the national malaria programme staff. We also highly appreciate the commitment, technical assistance, and overall stewardship of the malaria health sector working group.

Our heartfelt appreciation to the representatives from the County Departments of Health and members of civil society organisations for their active participation and invaluable insights throughout the process of developing the strategy. We greatly appreciate the U.S. President's Malaria Initiative (PMI) and the RBM Partnership to End Malaria for their financial and technical assistance.

We recognize and appreciate the commitment, leadership, and contribution of the staff from the National Malaria Control Programme.

Dr. Patrick Amoth, EBS
Director General for Health
Ministry of Health

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Abbreviations

ABER	annual blood examination rate
AL	Artemether-Lumefantrine
ANC	antenatal care
CHAs	community health assistants
CHMTs	county health management teams
CHPs	community health promoters
COEs	committees of experts
EIR	entomological inoculation rate
EMR	electronic medical record
EPR	epidemic preparedness and response
FBOs	faith-based organisations
GER	gender, equity, and human rights
HIS	Health Information System
ICD-11	International Classification of Diseases version 11
IDSR	Integrated Disease Surveillance and Response
IPTp	intermittent preventive treatment for malaria in pregnancy
IPTp-SP	IPTp-Sulfadoxine-Pyrimethamine
IRS	indoor residual spraying
KDHS	Kenya Demographic and Health Survey
KES	Kenya Shillings
KEMSA	Kenya Medical Supplies Authority
KEMRI	Kenya Medical Research Institute
KHIS	Kenya Health Information System
KHSSP	Kenya Health Sector Strategic Plan
KMIS	Kenya Malaria Indicator Survey
KMS	Kenya Malaria Strategy
KNBS	Kenya National Bureau of Statistics
KVPs	key vulnerable populations
LLINs	long-lasting insecticidal nets
LSM	larval source management
MBS	malaria behavioural survey
M&E	monitoring and evaluation
MIP	malaria in pregnancy
MOH	Ministry of Health
MPR	malaria programme review
mRDTs	malaria rapid diagnostic test kits
MTEF	medium-term expenditure framework
NMP	National Malaria Programme
OCA	Organisational Capacity Assessment
PAPfPR$_{2\text{-}10}$	population-adjusted *Plasmodium falciparum* parasite rate standardized to ages 2–10 years
PDMC	post-discharge malaria chemoprevention
PMI	U.S. President's Malaria Initiative
PMLLIN	post-mass long-lasting insecticidal net
PPB	Pharmacy and Poisons Board
PSM	procurement and supply management
SBC	social behaviour change

SCHMT	sub-county health management team
SMC	seasonal malaria chemoprevention
SME	surveillance, monitoring, and evaluation
TES	therapeutic efficacy study
UHC	universal health coverage
USD	United States Dollars
WHO	World Health Organization

Introduction

1.1 Policy and programming environment

Malaria is a public health and socioeconomic problem in Kenya. It is one of the leading causes of hospital visits, with an estimated 10,700 attributable deaths in 2021 (WHO, 2023a), and is a priority in Kenya's national development plan (Republic of Kenya, 2008). Kenya has a high national commitment to regional and international malaria control and elimination agreements and strategies, including the following: the Abuja Declaration on HIV/Acquired Immune Deficiency Syndrome (AIDS), Tuberculosis and Other Related Infectious Disease; Africa Union Catalytic Framework to End AIDS, Tuberculosis, and Eliminate Malaria in Africa by 2030; East African Community Vision 2050; the Global Technical Strategy for Malaria 2016—2030; Sustainable Development Goals (SDGs); and the Africa Union Agenda 2063. Kenya also participates in regional cross-border and regional malaria control and elimination programs, including the Great Lakes Malaria Initiative and the Intergovernmental Authority on Development Malaria Initiative (IGAD, 2024).

The 2010 Constitution of Kenya guarantees the right to life for every person, and further guarantees the right to the highest attainable standard of health. Several Acts have been enacted to achieve the provisions within the Constitution. The country's Malaria Policy (NMCP, 2024a) provides the framework for malaria strategic plans, giving room for adopting and deploying new technologies and tools as they become available. The policy aligns with the constitutional mandates, including for delivering health services in a decentralized system.

1.2 Kenya malaria strategy and the government planning cycle

The Kenya Malaria Strategy (KMS) includes medium-term targets, main activities, and a monitoring and evaluation framework aligned with the Kenya Health Sector Strategic Plan (KHSSP) 2023—2027. The KMS is aligned with the government's planning cycle (July 01—June 30) and the budgeting process. The 2012 Public Financial Management Act guides the planning and budgeting processes for the national and county governments. Moreover, various policies guide planning and budgeting in the health sector, including Kenya Vision 2030, Medium-Term Plans, Kenya Health Policy, KHSSP and the Kenya Health Financing Strategy. County governments prepare five-year county integrated development plans and county-department-of-health strategic plans aligned to the national plans.

The KMS defines the set of targets to be achieved within a five-year period, clearly outlining how the National Malaria Programme (NMP) will attain the targets and the resource requirements. Implementation of the strategy is outlined in the annual malaria work plans developed by the NMP in collaboration with the stakeholders and partners. County governments, through the malaria control coordinator and in collaboration with their stakeholders, also incorporate malaria activities within the County Department of Health annual work plans.

The medium-term expenditure framework (MTEF) links the annual planning and budgeting to the medium- and long-term plans. The MTEF budgeting process is anchored on programme-based budgeting which links the available resources to the programmes and the expected results. Within the health sector, the rationale for resources is expected to consider the disease burden and the proposed key activities that respond to the prevailing situation. The sector working group meetings provide the best opportunity for the malaria programme at the national and county level to advocate for increased resources.

Development of the KMS 2023—2027 was informed by recommendations of a consultative multi-stakeholder malaria programme review of the previous KMS 2019—2023. The review was conducted between October 2023 and March 2024.

Country Profile

2.1 Overview

Kenya is an East African country with the Indian Ocean on its eastern side. Ethiopia borders it in the north, South Sudan in the northwest, Tanzania in the south, Somalia in the east, and Uganda in the west. Eighty percent of the land area is arid or semi-arid, and only 20 percent is arable. The country has two main regions: lowlands and highlands. The lowlands include the coastal and the lake regions, and the highlands fall on both sides of the Rift Valley. Rainfall and temperatures are influenced by altitude and proximity to the Indian Ocean. The coastal region has a tropical climate, with rainfall and humidity higher than the rest of the country throughout the year. Malaria transmission and infection risk across the geographic regions in Kenya is determined largely by altitude, rainfall patterns, and temperature. The country has made significant gains in reducing the malaria burden, however future climate change will most likely increase the risk of vector-borne diseases such as malaria unless appropriate preventive measures are taken.

2.2 Socio-political system

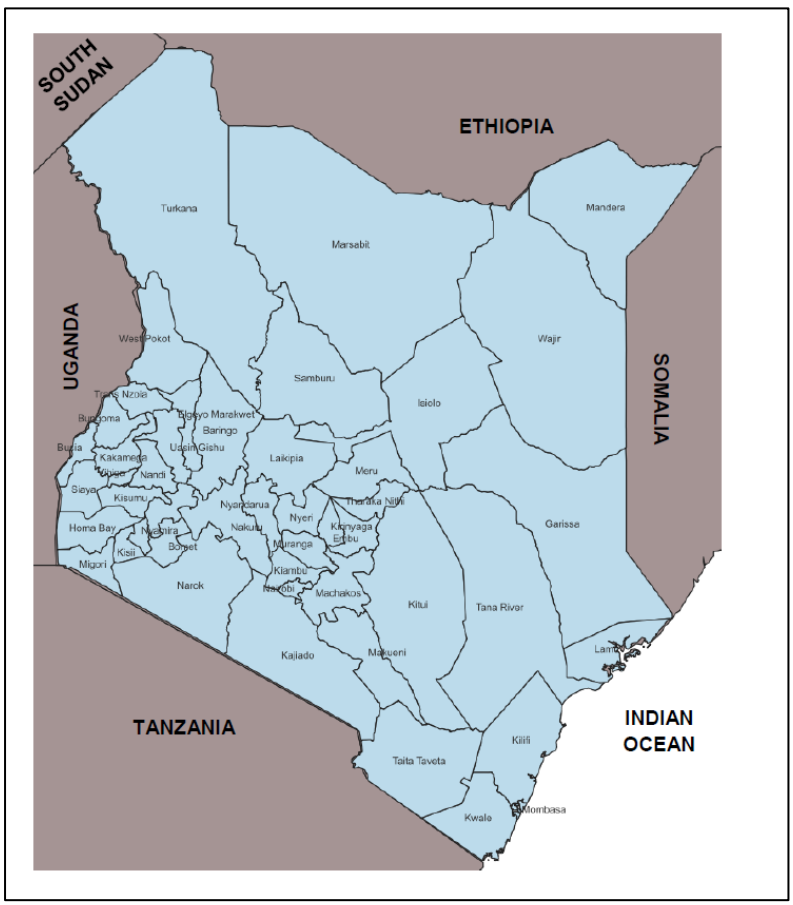
The 2010 Constitution of Kenya introduced 47 counties with clearly defined geographical boundaries as illustrated in Figure 1. The counties are further sub-divided into sub-counties; as of 2023, there were 314 sub-counties in Kenya.

Transition into the decentralized system of governance was adopted in 2013 and led to a two-tier system comprising of the national and the 47 semiautonomous county governments. Under devolution, the national level is responsible for policy and capacity building, and the county is responsible for health service delivery (Republic of Kenya, 2010). Specifically, the national level develops and disseminates policies and associated guidance documents, oversees national referral hospitals, develops norms and standards of services, facilitates capacity development, and provides technical assistance to counties. The county governments oversee county health facilities and pharmacies (service delivery), ambulance services, and promotion of primary healthcare. The Health Sector Intergovernmental Forum serves as the link between the national and county governments.

The KHSSP 2023—2027 provides the overall framework for Kenya's health development agenda (MOH, 2024), whereas the Kenya Health Policy (2014–2030) provides direction for improving the health of the Kenyan people in line with the Constitution and global commitments (Republic of Kenya, 2015). In addition, the government's Bottom-Up Economic Transformation Agenda identifies universal health coverage (UHC) as one of the key priority areas for socio-economic transformation. Establishing the Social Health Insurance Fund, rollout of primary healthcare networks, and deployment of community health promoters facilitate the achievement of UHC, hence contributing to a country free of malaria. Malaria services are offered at all levels of healthcare, including the community level. As of June 2023, there were 14,709 health facilities in the Kenya Master Health Facility List, of which 45 percent were public health facilities managed by various levels of government, 45 percent were from the private for-profit sector, and 10 percent were in the private, not-for-profit sector.

Health is a critical component of Kenya's Vision 2030, which focuses on shifting health outcomes and indicators from curative to preventive and promotive health. The strategies of Kenya Vision 2030 include establishing a robust network of health infrastructure, enhancing the quality of healthcare services to meet the highest standards, and fostering partnerships with the private sector. The KMS is aligned with these strategies and those outlined in the KHSSP and other guidance, such as the Global Technical Strategy for Malaria.

Figure 1. Map of counties in Kenya



The NMP falls under the Directorate of Primary Healthcare within the State Department of Public Health and Professional Standards. Annex 1 outlines the position and structure of the NMP within the broader sector-wide organogram. At the county level, the county malaria control coordinator reports to the county director for health, and works closely with the sub-county malaria control coordinators to plan and implement malaria management and control activities in the county.

2.3 Demographic data

The 2022 Kenya Demographic and Health Survey (KDHS) showed an improvement in health indicators such as the total fertility rate (3.9 in 2014 to 3.4 in 2022) and mortality rates among infants (39 per 1000 in 2014 to 32 deaths per 1000 in 2022) and under-five (52 per 1000 in 2014 to 41 deaths per 1000 in 2022).

The maternal mortality ratio in Kenya is approximately 335 deaths per 100,000 live births, with significant disparities between urban and rural areas (KNBS and ICF Macro, 2022). Maternal mortality is higher in rural areas due to limited access to healthcare and other essential services (Rogo et al., 2006). Generally, counties with high malaria endemicity reported the highest under-five mortality rates for the 10 years preceding the last KDHS, for example Kakamega, and Migori Counties in the malaria lake-endemic region reported 45 and 73 deaths per 1000 live births, respectively (KNBS and ICF Macro, 2022).

Table 1. Basic demographic data for Kenya[1]

Description	**2008/09**	**2014**	**2022**	**2050 (Projection)**
Population (total in millions)	38.6	43	54	85.2
Average population growth rate (%)	2.9	2.3	2.2	1.1
Urban population (% of the total population)	23%	26%	29%	46%
Population proportion by age group (%):				
Age 0—14 years	42.9	42	37.8	-
Age 15—34 years	53.63	55.58	59.32	-
Age 65+ years	3.45	2.43	2.87	-
Dependency ratios (number of dependents to the number of working-age population)	83.1 (2010)	77.1 (2015)	68.6	48
Total fertility rate (children per woman)	4.8	3.9	3.4	2.1
Infant mortality rate (per 1000 live births)	52	39	32	-
Under-five mortality (per 1000)	74	52	41	-
Net migration rate (per 100 people)	-0.963	-0.217	-0.180	-0.01

2.4 Ecosystem, environment, and climate

Forests, particularly in the highlands, are linked to increased malaria risk due to the presence of suitable larval habitats and increased vector populations. Climate variability resulting in temperature anomalies and high rainfall

[1] Source: 2014 KDHS. 2022 KDHS. Kenya Population and Housing Census, 2019 – Analytical Report on Fertility and Nuptiality Vol VI; Population ages 65 and above (percent of total population) - Kenya | Data (worldbank.org). World Health Organization (WHO) health data overview for Kenya. 2024. United Nations Data Portal Population Division (2022)

in the highlands of Western Kenya is associated with increased malaria transmission and epidemics (Githeko et al., 2006). The coastal regions of Kenya have stable malaria transmission due to the perennial transmission of malaria, with suitable climatic conditions for mosquito breeding and survival. The warm temperature increases malaria vectors' survival and reproduction rates, leading to higher transmission rates. Areas neighbouring Lake Victoria have the highest reported malaria prevalence at 19 percent (DNMP and ICF, 2021). The altitudes around Lake Victoria range from 1,200 to 1,700 metres above sea level, coupled with average temperatures ranging from 19 to 27 degrees Celsius and consistent rainfall and humidity that sustain the vector populations (Mategula and Gichuki, 2023). Malaria transmission in arid and semi-arid regions of Kenya, such as Baringo County, is seasonal and influenced by climatic factors. Short periods of intense rainfall during the rainy seasons create breeding habitats for malaria vectors, leading to increased transmission (Kipruto et al., 2017). The impact of vector interventions on malaria control and prevention is affected by insecticide resistance, global warming, and climate change.

2.5 Socioeconomic situation

The Kenyan economy experienced a growth from 4.9 percent in 2022 to 5.6 percent in 2023, highlighting the continued recovery following the COVID-19 pandemic. However, there was an increase in the total debt by 19.3 percent to 9.6 trillion Kenya Shillings (KES). There will be a need to service this high level of debt, thereby leaving a constrained fiscal space for increased funding of activities, including health and malaria.

There is a specific geographic focus on targeted economic activities to improve productivity and connectivity. Any malaria-related interventions and social mobilisation need to be mindful of the commercial activities in the area (KNBS, 2021). Gender distribution and preferences also play a significant role in these economic activities, with women involved in various sectors, particularly agriculture and informal manufacturing.

Development and poverty indicators for Kenya	
Kenya's national-level gross domestic product per capita	2,099.3 in 2022 (World Bank, 2024a)
Human Development Index and rankings	0.601 at a rank of 146 for 2022 (UNDP, 2024)
Gender Development Index, Gross National Income per capita for females and males	0.948; 3.977 (females) and 5.654 (males) in 2022 (UNDP, 2024)
Population below the international poverty line	36.1% in 2021 (World Bank, 2024b)

The geographical distribution of poverty, illiteracy, life expectancy, maternal mortality ratio, and under-five mortality rate in Kenya is closely related to the distribution of malaria burden in the country. In Kenya, life expectancy at birth has improved from 53.9 years in 2000 to 66.8 years in 2021 (WHO, 2024). Life expectancy for females was 67 years, and was 61 years for males in 2019, with significant disparities between urban and rural areas (NCPD, 2023). Poverty is more prevalent in rural areas, where access to healthcare and other essential services is often limited. Illiteracy rates are higher in rural areas, with around 30 percent of adults aged 15 to 24 years unable to read and write. Illiteracy is a significant barrier to accessing healthcare information and services, contributing to higher mortality rates. Teenage pregnancy in Kenya declines as the level of education increases, from 38 percent for women with no education to five percent for women with more than secondary education. Pregnant teenagers are at a higher risk of mortality from malaria due to late presentation to facilities and low uptake of intermittent preventive treatment for malaria in pregnancy (IPTp) due to stigma.

Seasonality of migration and nomadic practices in relation to local transmission: In Kenya, seasonal migration is common, particularly for agricultural activities. This migration can reintroduce malaria parasites and initiate a resurgence of malaria transmission in areas where it might be less prevalent (Tilaye, Tessema and Alemu, 2021). Nomadic populations in Kenya are at increased risk of contracting malaria due to their highly mobile lifestyles. They often lack access to disease control programs and preventive measures, making it difficult to implement effective malaria control interventions.

Healthcare access: Nomadic groups often face barriers to healthcare services, including geographical and financial constraints. This can limit their access to malaria prevention and treatment interventions. It is essential to

develop strategies that cater to the unique needs of this population. In Kenya, the counties that include significant nomadic populations have the lowest child national schedule vaccination coverage and the highest fertility rates (NCPD, 2023).

Women and social mobilisation: Women are often more active in health education programs and self-protection campaigns than their male counterparts. Women play integral roles in their communities as educators, caregivers, and agents of change, as indicated by a study in Kenya highlighting the importance of engaging women in effectively designing and implementing culturally acceptable and sustainable vector control interventions (Ernst K.C., and Barrett E., 2018).

Housing conditions: Housing conditions in urban and rural areas of Kenya significantly impact malaria distribution and the deployment of prevention interventions. Addressing the need for housing improvement through government support, community engagement, and logistics management is crucial for effective malaria control and elimination. Housing conditions vary significantly between urban and rural areas in Kenya in terms of access to electricity, flooring, and roofing materials (KNBS and ICF Macro, 2022). A study in western Kenya found that eave screening significantly reduced indoor mosquito densities, indicating a potential long-term solution to reduce malaria transmission further (Abongo et al., 2022).

Social and cultural practices and malaria transmission in the country: Social and cultural practices in Kenya play a significant role in malaria transmission (Amref Health Africa, 2022). These practices include traditional beliefs about the cause and mode of malaria transmission, which often lead to misconceptions and ineffective prevention methods. A study in Baringo County reported respondents who believed malaria was caused by bad air or spread through social drinking and farm activities (Mutua et al., 2016). These misconceptions can hinder the effectiveness of malaria control measures.

2.6 Health system analysis

The health system in Kenya faces significant challenges in delivering personal and population-based services to those in need and when required. The system is inequitable, with limited access and coverage for marginalized groups. Out-of-pocket payments for malaria are a significant burden, and many households experience catastrophic health expenditures (NMCP, 2024b). The country has yet to progress towards achieving international benchmarks, such as the Abuja target of allocating 15 percent of the government's budget to the health sector. By 2021, the health expenditure (percentage of gross domestic product) was 4.55 percent (WHO, 2024). Devolution in Kenya has focused on improving the supply side of health services. However, there needs to be more emphasis on promoting the demand side, including acceptability and use of services.

Analysis of equity in the health system in terms of access and coverage

Progressive realization of the right to health is enshrined in national health policies and strategies as outlined in Article 21 of the Constitution (Republic of Kenya, 2010). However, according to the Kenya Malaria Matchbox Assessment Report, though the malaria programme has strategic prevention approaches, not everyone has access to malaria services due to contextual limitations such as health workers' attitudes towards beneficiaries, and limited mainstreaming of gender, equity and human right in service provision (Amref Health Africa, 2022).

Generally, malaria programs suffer from a lack of adequate funding, which hampers their ability to reach and serve key vulnerable populations (KVPs) effectively. The underfunding limits the resources available for critical activities such as prevention, diagnosis, treatment, and community engagement. Similarly, there are issues related to the equitable allocation of resources. Often, resources are concentrated in urban areas or regions with better infrastructure, leaving rural and hard-to-reach communities underserved (Macharia, Mumo, and Okiro, 2021). This imbalance exacerbates health disparities and undermines the overall effectiveness of malaria programs.

Gender, equity, and human rights (GER) integration statements are incorporated into health and malaria-specific strategic and policy documents, including the Global Fund malaria grant (MOH, 2014, 2018; NMCP, 2019, 2024). However, a review of Kenyan malaria strategies and related strategic documents from 2010 to 2024 reveals challenges at the level of implementing GER activities due to insufficient funding of activities (DOMC, 2010; MOH, 2014, 2022, 2024; NMCP, 2019b, 2019a, 2024; NMCP, 2024a). GER-related interventions are not incorporated into budgets, making it difficult to attain universal coverage. Addressing these financial issues is crucial for enhancing the reach and impact of malaria programs, ensuring that all populations, especially the most vulnerable, have access to the necessary prevention and treatment services.

Health systems equity

Significant disparities exist between the high-income and the low-income households in terms of accessing health resources. The impact of health systems equity, distribution and use of health resources, and quality of care on health status indicators is significant (NCPD, 2023). The malaria programme review indicated that malaria control and elimination resources in Kenya are limited, with significant disparities in resource allocation across different regions (NMCP, 2024b).

3.1 Historical perspective of the malaria problem

International and political commitments: Kenya has had several malaria strategic plans, and they are always aligned with global and regional commitments to end malaria. The launch of the Zero Malaria Starts with Me Campaign as well as the End Malaria Council and Fund during the last KMS are evidence of high-level commitment to attain a malaria-free Kenya.

Past malaria control interventions and strategic approaches: The interventions and strategic approaches implemented between 2010 and 2023 included the distribution of long-lasting insecticidal nets (LLINs), indoor residual spraying (IRS), larval source management (LSM), epidemic preparedness and response (EPR), surveillance, social behaviour change (SBC), IPTp, malaria case management, and malaria vaccination. The interventions and strategies were implemented based on the level of endemicity in different regions of the country (Table 2). Level of endemicity was defined by a model-based map of the intensity of Plasmodium falciparum transmission that stratified the country into five endemicity levels: lake stable endemic, coast seasonal stable endemic, highland epidemic prone, seasonal low transmission, and low risk areas.

Table 2. Past malaria interventions by epidemiological zone

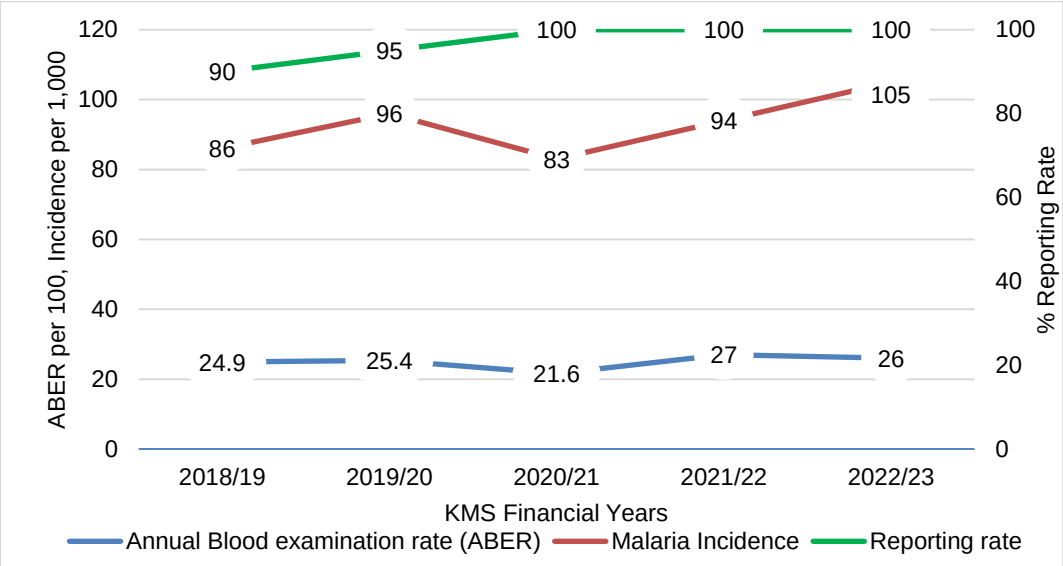
Epidemiologic strata	Case Management	IPTp	LLIN	IRS, LSM	Surveillance	EPR	SBC	Malaria Vaccine
Lake stable endemic	X	X	X	X	X		X	X
Coast seasonal stable endemic	X	X	X	X	X		X	
Highland epidemic prone	X		X	X	X	X	X	
Seasonal low transmission including arid and semi-arid	X					X	X	
Low risk	X				X		X	

Source: National Malaria Policy 2010

Past successes and failures in malaria control and elimination: Effective malaria control in Kenya has reduced its prevalence and total malaria cases. Nationally, there has been an overall reduction in malaria prevalence from eight percent in 2015 to six percent in 2020 (DNMP and ICF, 2021). The prevalence remains highest in the lake-endemic region, but with significant reduction from 27 percent to 19 percent between 2015 and 2020. Among children ages six months to 14 years who tested positive for malaria, the prevalence of *Plasmodium falciparum* parasites reduced from 81 percent in 2015 to 76 percent in 2020 (DNMP and ICF, 2021). In terms of cases, health facilities reported 9.2 million clinical cases in 2007, which remained at the same level for the preceding 12 years (DOMC, 2010). The number of malaria cases decreased to approximately 5.6 million cases, accounting for an estimated 16 percent of outpatient consultations in 2023; this was a significant reduction when compared to 30 percent in 2010 (DOMC, 2010; MOH, 2023). The malaria incidence reduced from 113 per 1000 population in 2016 to 83 per 1000 in 2020/21, and was on an increasing trend thereafter to 105 per 1000 in 2022/23 (Figure 2). Inpatient malaria deaths per 100,000 population decreased from 2.2 in 2018/19 to 1.5 in 2022/2023. Diagnostic testing increased from 70 percent in 2018 to 83 percent in 2022, but remained below the 100 percent target. Over the years, prevention and chemoprevention interventions have expanded to include IRS, LSM and the RTS, S malaria vaccine. Vector control through IRS has been successful in Homa Bay and Migori Counties, resulting in a tremendous reduction in malaria incidence, dropping from 477 per 1000 population in 2016 to 103 in 2020 in Homa Bay. The county registered the lowest malaria prevalence (3.6 percent) in the region in 2020. IRS was withdrawn from Homa Bay County after the 2023 spray campaign, and shifted to Busia County, which had the highest prevalence (39 percent) in 2020.

In addition, there were notable challenges in maintaining consistent usage of LLIN, provision of IPTp, and compliance to case management guidelines by the health workers (NMCP, 2024b). Partner funding through the U.S. President's Malaria Initiative (PMI) has remained constant at United States Dollars (USD) 33.5 million in 2022/23 and in 2023/24, while the Global Fund resources reduced by 10 percent to USD 72.9 for the 2024/27 grant period (NMCP, 2024b).

Figure 2: Malaria incidence, reporting rates, and ABER for 2018/19 to 2022/23



Source Kenya Health Information System (KHIS) accessed on December 15, 2023

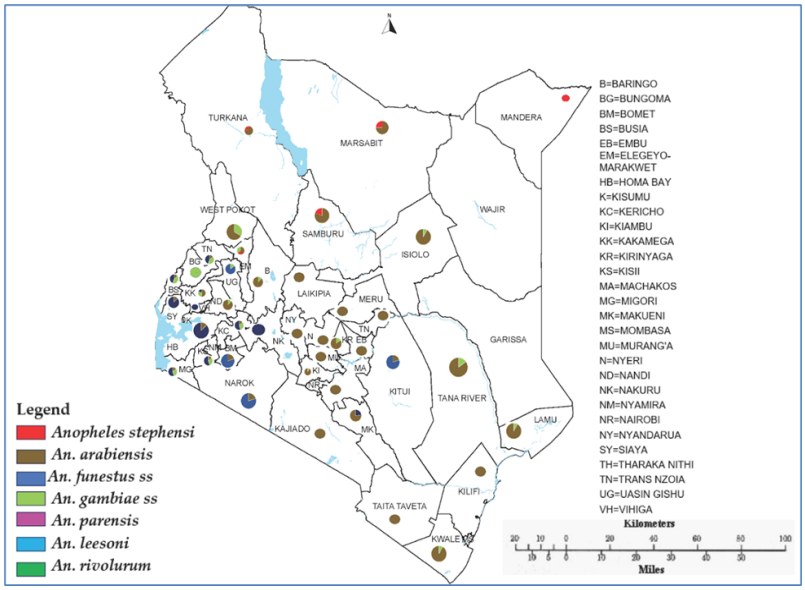
3.2 Epidemiology

Malaria parasites: The Kenya Malaria Indicator Survey (KMIS) conducted in 2020 revealed that 76 percent of children ages six months to 14 years who tested positive for malaria had a *Plasmodium falciparum* infection, four percent had *Plasmodium malariae*, one percent had *Plasmodium ovale,* and 19 percent had a mix of *Plasmodium falciparum* and *Plasmodium malariae* infection (DNMP and ICF, 2021). Lately, counties in northern Kenya (Isiolo, Mandera, Turkana, Marsabit, and Wajir) have reported, through routine surveillance, *Plasmodium vivax* cases. In Turkana County, 2.1 percent of household members of patients with *Plasmodium falciparum* infections were infected with *Plasmodium vivax* (O'Meara et al., 2023).

Malaria vectors: The main malaria vectors include *Anopheles funestus s.l.*, *Anopheles gambiae s.l.*, and *Anopheles arabiensis* (Figure 3). Over time, sustained distribution and use of LLINs in western Kenya and coast-endemic regions have led to shifts in species composition, with *An. arabiensis* replacing *An. gambiae s.s* as the dominant species (Bayoh *et al.*, 2010; Mwangangi *et al.*, 2013). Similarly, *An. funestus* populations declined the most after the introduction of insecticide-treated nets in the 1990s in Asembo in western Kenya (Gimnig et al., 2003), and collections of *An. funestus* in the region remained low until at least 2008. The *An. funestus* vector has re-emerged to population dominance in the lake-endemic counties (McCann et al., 2014; Abt Associates Inc., 2018; Kosgei *et al.*, 2024). More recently, the invasive *An. stephensi* species was detected in Marsabit and Turkana Counties (Ochomo et al., 2023). Intensified entomological surveillance confirmed the presence of *An. Stephensi* in Marsabit, Turkana, and Mandera Counties, which border the Horn of Africa, and Isiolo, Samburu, and Elgeyo Marakwet Counties (NMCP, 2024b). *An. coluzzii*, initially known to be restricted to West and Central Africa was also detected at the Kakuma refugee camp in Turkana (Kamau *et al.*, 2024). Changes in vector behaviour, leading to residual transmission, and the dynamics in species composition, including the emerging threat of new malaria vectors, call for enhanced and targeted entomological surveillance (Degefa et al., 2017; Ochomo et al., 2023).

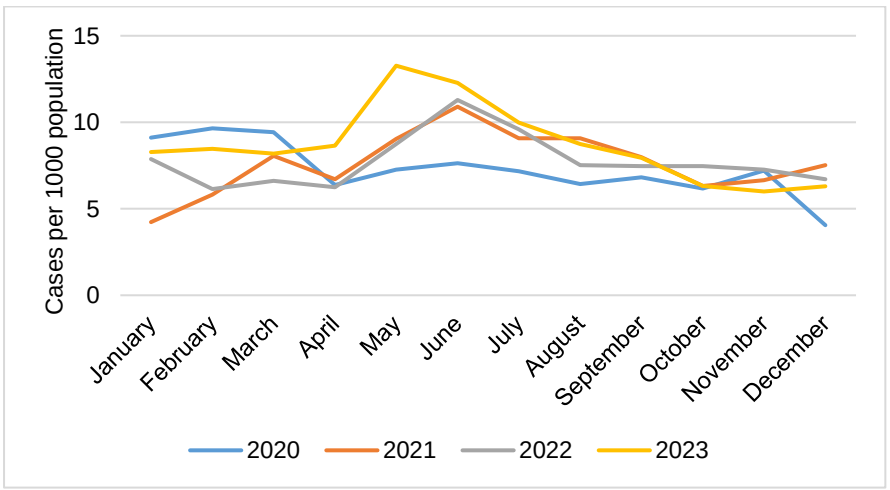
Insecticide resistance studies in western Kenya have shown *An. gambiae s.l.* to be resistant to deltamethrin and permethrin, which led to the shift to using Piperonyl Butoxide nets in these areas (The PMI VectorLink Project, 2021).

Figure 3. Distribution of the vector species in Kenya (2018—2023)



Dynamics of malaria transmission and level of endemicity:
The annual seasonal variation of malaria cases is displayed in Figure 4, with peaks after the rainy season in May and June/July. However, changes in climate may cause an increase of the malaria vectors and affect the seasonal patterns of transmission. Future strategies should focus on maintaining and improving intervention coverage, monitoring climate-related changes, and adapting control measures according to levels of endemicity.

Figure 4. Monthly malaria outpatient cases in Kenya 2020—2023.



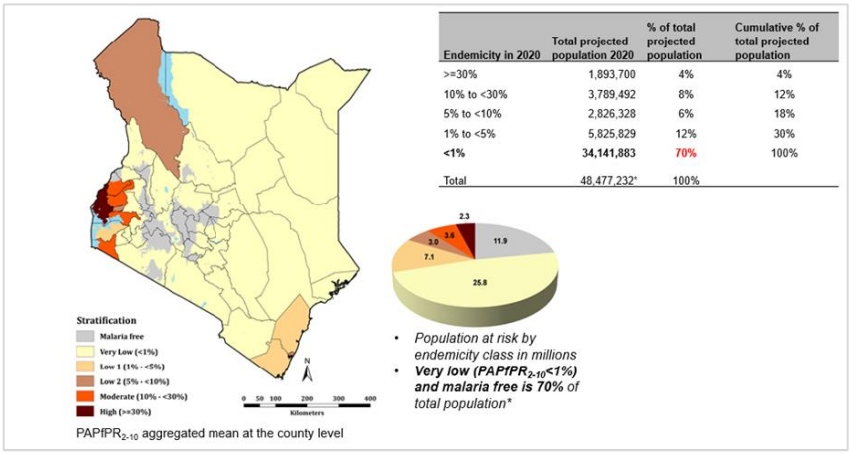
Source Kenya Health Information System (KHIS) accessed on December 15, 2023

Malaria stratification and mapping

In 2020, malaria infection prevalence mapping classified sub-county level mean of population-adjusted *Plasmodium falciparum* parasite rate standardized to ages 2–10 years (PAP*f*PR$_{2\text{-}10}$) into five classes (Figure 5). Aggregating to the county level, for health policy planning purposes, Busia and Siaya Counties had mean PAPfPR$_{2\text{-}10}$≥30%, while a large number of the counties (34) were classified as very low transmission (PAPfPR$_{2\text{-}10}$<1%) (Table 3). Nairobi was classified as malaria-free based on data and historical evaluation of the malaria situation in the county (Alegana et al., 2021).

About 30 percent of the Kenyan population live in areas with mean PAPfPR$_{2\text{-}10}$ between one and greater than or equal to 30 percent, with all the eight counties in the lake region among those with highest risk of malaria (Table 3). In 2020, malaria prevalence by microscopy among children 6—59 months was 5.6 percent. Children aged 10—14 years and those living in rural areas had the highest prevalence, with eight percent and seven percent respectively (DNMP and ICF, 2021).

Figure 5. Population at risk of malaria in Kenya categorized by endemicity, 2020[2]



Endemicity classes (malaria-free, Temperature Suitability Index = 0), areas of very low risk (PAPfPR$_{2–10}$ <1%); low risk (PAPfPR$_{2–10}$ 1% to <5%); low-moderate risk (PAPfPR$_{2–10}$ 5% to <10%); moderate risk (PAPfPR$_{2–10}$ 10% to <30%); and the high endemicity areas of PAPfPR$_{2–10}$ ≥30%.

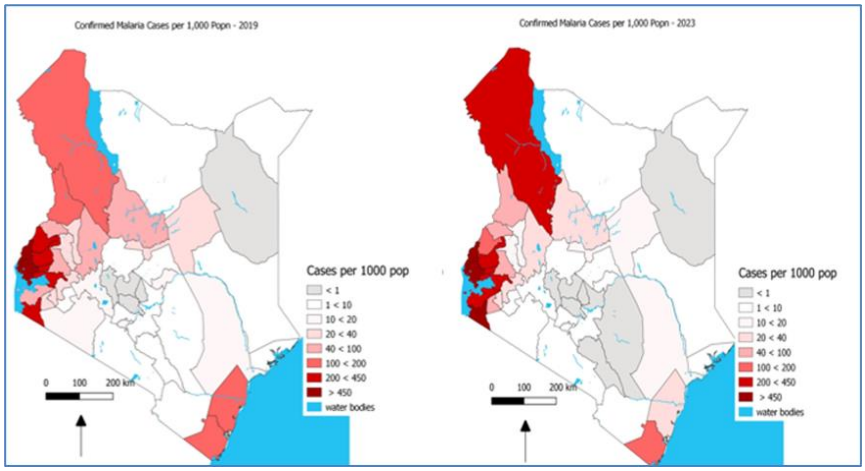
Table 3. Classification of counties by endemicity classes

Endemicity class	**Counties**
Malaria-free	Nairobi
<1%	Baringo, Bomet, Elgeyo-Marakwet, Embu, Garissa, Isiolo, Kajiado, Kericho, Kiambu, Kirinyaga, Kisii, Kitui, Laikipia, Lamu, Machakos, Makueni, Mandera, Marsabit, Meru, Murang'a, Nakuru, Nandi, Narok, Nyamira, Nyandarua, Nyeri, Samburu, Taita Taveta, Tana River, Tharaka-Nithi, Trans Nzoia, Uasin Gishu, Wajir, West Pokot
1% - <5%	Homa Bay, Kilifi, Kwale
5% - <10%	Mombasa, Turkana, Vihiga
10% - <30%	Bungoma, Kakamega, Kisumu, Migori
>=30%	Busia, Siaya

Using passive surveillance data from the Kenya Health Information System (KHIS), there have been notable variations in the incidence of malaria between 2019 and 2023, with incidence rates nearly doubling (from 100—200 cases to 200—350 per 1,000 population) in the north-western Turkana County, and decreasing in some coastal counties such as Kilifi (Figure 6). As of 2019, 26 counties in the western highlands and seasonal malaria transmission zones were prone to epidemics (MOH, 2020).

[2] Temperature suitability index values of zero have been used to represent absence of transmission (malaria free).

Figure 6. Malaria incidence per 1000 population in Kenya in 2019 and 2023



The malaria programme developed an analytical framework to perform stratification mapping using five-year (2019—2023) passive surveillance data, environmental data, and KDHS information on health seeking behaviour. This involved use of the principal component analysis technique, which condenses information of multiple variables by investigating their correlations. The non-modelling analytical approach grouped the 47 counties into six strata based on malaria burden (Figure 7). The very high burden areas comprised of six counties (Busia, Kakamega, Kisumu, Migori, Siaya, and Vihiga) with an average adjusted incidence of 748 malaria cases per 1,000 people (Table 4). Nairobi was uniquely classified as a 'no transmission' area due to historical evidence of very low risk of local transmission. The resulting stratification map will be used to inform intervention targeting.

Figure 7: Malaria stratification using routine surveillance data

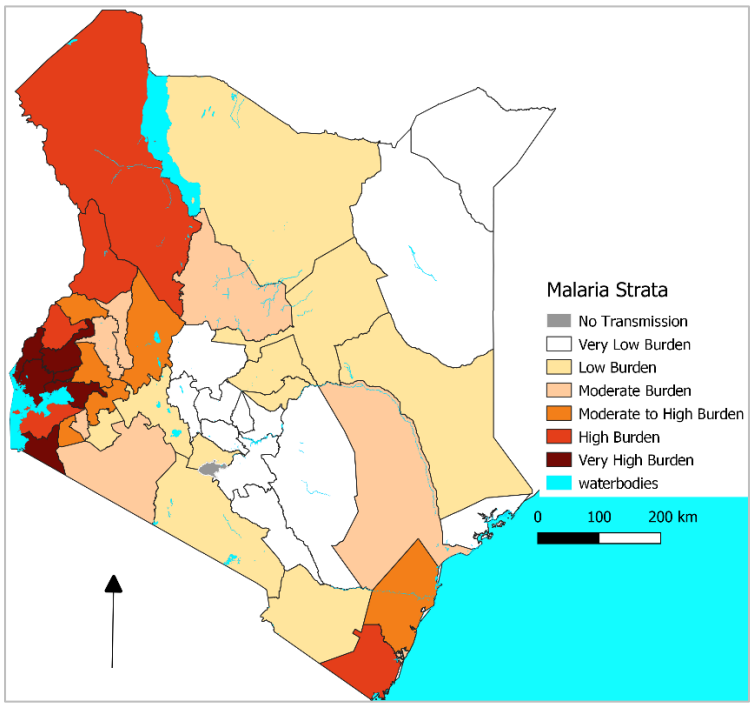


Table 4: Classification of counties based on malaria burden

Classification of malaria burden	Adjusted incidence, median (interquartile range)	Counties
No transmission	-	Nairobi
Very low burden	2.0 (1.0—3.2)	Embu, Kirinyaga, Kitui, Laikipia, Lamu, Machakos, Makueni, Mandera, Murang'a, Nyandarua, Nyeri, Wajir
Low burden	11.0 (9.0—15.5)	Bomet, Garissa, Isiolo, Kajiado, Kiambu, Marsabit, Meru, Nakuru, Taita Taveta, Tharaka-Nithi
Moderate burden	54.0 (30.5—71.0)	Elgeyo-Marakwet, Mombasa, Narok, Nyamira, Samburu, Tana River, Uasin Gishu
Moderate to high burden	95.0 (82.0—117.0)	Baringo, Kericho, Kilifi, Kisii, Nandi, Trans Nzoia
High burden	474.0 (343.0—478.0)	Bungoma, Homa Bay, Kwale, Turkana, West Pokot
Very high burden	748.0 (649.0—850.0)	Busia, Kakamega, Kisumu, Migori, Siaya, Vihiga

Morbidity and mortality: An average of 4.9 million outpatient malaria cases per year were reported over the last five years, and the annual incidence has risen from 96 cases per 1000 population to 105 cases per 1000 between 2019 and 2023 (Figures 2 and 6). Malaria prevalence varies across different epidemiological zones, ranging from 19 percent in lake-endemic areas to less than one percent in low-risk regions (DNMP and ICF, 2021), and this diversity underscores the necessity for tailored approaches to intervention deployment. The prevalence among children aged 10—14 years has remained disproportionately high, highlighting the need for targeted interventions for this age group.

Unlike malaria morbidity, which was disaggregated by region, malaria mortality in Kenya was not segregated by region. It will be necessary to segregate by region to monitor the progress of the various counties in the reduction of mortality. The severe case fatality rate has declined from 6.8 percent in 2018 to 0.7 percent in 2022 against a target of 0.9 percent in 2022/2023 (NMCP, 2024b).

3.3 Review of the KMS 2019—2023

The Malaria Programme Review (MPR) of the KMS 2019—2023, including planning meetings, was conducted between October 12, 2023 and March 15, 2024. The goal of the KMS 2019—2023 was to reduce malaria incidence and deaths by at least 75 percent of the 2016 levels by 2023. The objectives of the strategy were as follows:

1. To protect 100 percent of people living in malaria risk areas through access to appropriate malaria preventive interventions
2. To manage 100 percent of suspected malaria cases according to the Kenya malaria treatment guidelines
3. To establish systems for malaria elimination in targeted counties
4. To increase utilisation of appropriate malaria interventions in Kenya to at least 80 percent
5. To strengthen malaria surveillance and use of information to improve decision-making for programme performance
6. To provide leadership and management for optimal implementation of malaria interventions at all levels for the achievement of all objectives

The MPR identified 2713 planned activities under the six strategic objectives. Seventy-one percent were fully implemented by the NMP and partners, 23 percent were partially implemented, and six percent were not implemented. The review reported an overall implementation performance rating of 60 percent based on the WHO guidance for scoring quality of implemented activities (WHO, 2023b; NMCP, 2024b).

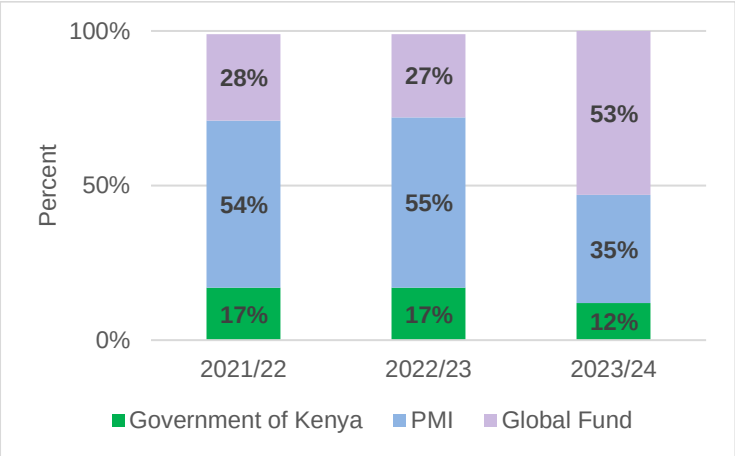
At the end of the strategic plan cycle, malaria incidence was reduced by only seven percent compared to the target of 75 percent; however, malaria prevalence dropped from eight percent to six percent (KMIS 2015; KMIS 2020). Malaria mortality was also reduced by 32 percent, with inpatient malaria deaths per 100,000 population per year decreasing from 2.2 in 2018/19 to 1.5 in 2022/2023.

The entomological inoculation rates (EIR) of primary malaria vectors, *Anopheles gambiae s.s.* and *An. funestus s.l.,* were high in lake endemic counties (2.9, 2.3, and 1.5 in 2019, 2020 and 2021), except for Migori, which had an EIR of zero, indicating varying transmission risks. The emergence of the invasive vector *Anopheles stephens*i in northern Kenya presents a new challenge, particularly for urban malaria transmission. Furthermore, the documented pyrethroid resistance in regions of high and moderate transmission suggests the urgent need for alternative insecticides and integrated vector management approaches based on the country's Insecticide Resistance Monitoring and Management Plan.

Status of malaria programme financing

The aggregate total government allocation to health increased from 9.1 percent in 2019/2020 to 9.7 percent in 2023/2024. However, the NMP experienced challenges in the timely disbursement and absorption of funds. The government directly contributes to the national malaria programme through annual direct budget allocations and salaries of health workers. The Global Fund and PMI are the major donors, as illustrated in Figure 8. The cost of implementing the KMS 2019—2023 was estimated at KES 61.92 billion for the five years. The financing of the strategy was low; however, the funding gap decreased from 55 percent in 2018/19 to 20 percent in 2022/23 (NMCP, 2024b).

Figure 8. Allocation to malaria by source between FY2021/22 and FY2023/2



Source: National Treasury Annual Budgets, PMI MOP Budgets, Global Fund Grant Application Budgets

Implementation of the KMS objectives

Objective 1: To protect 100 percent of people living in malaria risk areas through access to appropriate malaria preventive interventions

There was suboptimal coverage of the key vector control intervention, with LLIN distribution only achieving 53 percent universal coverage (one net for every two persons in a household) in the lake-endemic region and 42 percent in the coast-endemic region during the 2020-2021 mass net campaign. This fell significantly short of the 100 percent target. The proportion of the general population, among households with at least one LLIN using a net the night before the survey was 66 percent in 2020 (DNMP and ICF, 2021) and 96 percent in 2022 (KNBS and ICF Macro, 2022). Only 47 percent of eligible pregnant women in targeted areas received three or more doses of IPTp. Malaria vaccine was rolled out in 51 of the 63 lake-endemic sub-counties targeted for this intervention.

Objective 2: To manage 100 percent of suspected malaria cases according to the Kenya malaria treatment guidelines

The proportion of suspected cases of malaria presenting to public health facilities and tested with malaria rapid diagnostic tests (mRDTs) or microscopy increased from 70 percent in 2018/19 to 89 percent in 2022/23, but remained below the 100 percent target. The COVID-19 pandemic affected health-seeking behaviour, reduced testing rates, and disrupted the procurement and supply of commodities. Only 55 percent of the suspected cases of malaria at the outpatient departments were managed per the Kenya malaria treatment guidelines. However, there was improvement in reducing the case fatality rate from 6.8 percent in 2018 to 0.7 percent in 2022, against the backdrop of strengthened capacity through the mentorship of healthcare workers for managing severe malaria cases.

Objective 3: To establish systems for malaria elimination in targeted counties

A malaria elimination unit was set up within the NMP, and four county reference laboratories supporting malaria elimination were established in Nyandarua, Laikipia, Kirinyaga, and Nyeri Counties. Though training was conducted in the four targeted counties, there has been limited financial investment at the national and county levels to fulfil the elimination mandate, including on establishment of a case-based surveillance system.

Objective 4: To increase utilisation of appropriate malaria interventions in Kenya by at least 80 percent

Seventy-nine percent of the households had at least one LLIN post-mass long-lasting insecticidal-net (PMLLIN) distribution in 2022, and only 50 percent had one LLIN for every two persons. Among households with at least one LLIN, the proportion of population using an LLIN increased from 87 percent in 2018 to 96 percent in 2022. The uptake of three doses of IPTp and health-seeking for children under-five with fever remained low (34 percent and 42 percent, respectively). Limited resources continue to hamper sustained implementation of social behaviour change interventions.

Objective 5: To strengthen malaria surveillance and use of information to improve decision-making for programme performance

A major strength of the malaria programme is the availability of data visualization platforms, including an epidemic monitoring dashboard, within the KHIS to facilitate use of data for planning and decision-making. Over 90 percent of the health facilities provide timely malaria reports in KHIS. The impact of COVID-19 on healthcare-seeking behaviour resulted in low reporting (75 percent) and a low annual blood examination rate in 2020/21. There was incomplete reporting of malaria inpatient morbidity and mortality data during the KMS 2019—2023 period, partly due to capacity gaps among data managers and clinicians at the subnational level, especially in counties outside the lake-endemic region. The unavailability of health information system (HIS) reporting tools, lack of information technology equipment, lack of interoperability between electronic medical record (EMR) systems and other digital systems, and suboptimal reporting by the private providers continue to affect availability of quality malaria data.

Objective 6: To provide leadership and management for optimal implementation of malaria interventions at all levels for the achievement of all objectives

There were expanded partnerships, including those in the private sector and the launch of the End Malaria Council and the Zero Malaria Starts with me Campaign in 2021. The KMS 2019—2023 was not fully implemented due to a funding gap. A comprehensive risk management plan was also lacking in the strategy document. Data on proportion of counties implementing at least 75 percent of the malaria activities in their annual work plans in line with the KMS was not available. There were notable gaps in the commodity stock levels between the national and county levels, particularly for injectable artesunate.

The key recommendations from the review of the KMS 2019—2023 were as follows:

- Increase resource allocation to address gaps in malaria prevention and control interventions such as the gap in LLIN coverage
- NMP to foster multi-sectoral collaboration for resource mobilisation, including private-sector engagement
- Enhance digitalization of mass campaigns and examine or align data tools and methodologies for assessing the performance of malaria interventions
- Monitor vector and human behaviour across all epidemiological zones to inform intervention deployment
- NMP to closely collaborate with the Division of Reproductive and Maternal Health to improve IPTp uptake by addressing gaps in antenatal care attendance and commodity availability
- A recommendation to implement an on-the-job mentorship model to scale up capacity in case management among healthcare workers nationally
- Sustain engagement and commitment of national and county health leadership, governors, partners, and other stakeholders to prioritize, allocate resources for, and participate in malaria elimination activities
- Establish and operationalize a case-based surveillance system anchored in KHIS
- Integrate SBC within capacity-strengthening programs to enhance the skills of healthcare workers, community health promoters, and beneficiaries
- Emphasise and allocate resources towards operational research and the strategic application of SBC data
- Accelerate the adoption of digital technologies at the national level to enhance the delivery of malaria SBC interventions, and to expand the reach of SBC messages through innovative media platforms

- Provide targeted training of healthcare workers to improve the availability of quality inpatient morbidity and mortality malaria data
- Explore innovative capacity-building approaches for malaria surveillance, including virtual training, continuous medical education sessions, and mentorship
- Enhance engagement with the Division of Digital Health, Informatics, and Innovations to improve the availability of malaria data
- Establish a system to identify and resolve procurement bottlenecks to mitigate supply chain disruption
- Employ and deploy staff with the correct skills mix, especially entomologists and laboratory staff, at the county level to empower the county malaria programmes and drive the malaria elimination and control agenda

Process of developing the current strategic plan

The NMP led an end-term evaluation of the KMS 2019—2023 using guidelines from the WHO regarding malaria programme reviews (WHO, 2023b). Recommendations from the review informed development of the new KMS 2023—2027. The review and the subsequent development of the new strategy was a consultative process with representation from the Ministry of Health (MOH), county governments, civil society, in-country partners, stakeholders, and WHO. The review process ensured comprehensive consolidation of information using standard tools to gather data. An online review tool provided an avenue for gathering views and recommendations from all 47 counties countrywide. Workshops were held to gather the stakeholders and facilitate interactive sessions for discussions, such as the analysis of the programme's strengths, weaknesses, opportunities and threats. The goal-setting and articulation of the strategic objectives considered the MPR findings and recommendations (NMCP, 2024b) and aimed to move closer to achieving the vision for a malaria-free Kenya, despite the low performance of the impact indicators of the last strategic plan. Consequently, the draft document was subjected for review by the committees of experts (COEs) and the Malaria Health Sector Working Group.

Kenya Malaria Strategy 2023—2027

Vision: A malaria-free Kenya

Mission: To lead and coordinate efforts towards a malaria-free Kenya through inclusive, equitable, and multi-sectoral actions

Strategic directions and policy priorities

The malaria programme focuses on planning, coordination, resource mobilisation, implementation, and capacity development for malaria control and elimination in Kenya. The programme aims to catalyse the efficiency of the delivery of malaria services to reduce malaria incidence and deaths significantly. Critical to realizing this mission, the programme will strengthen collaboration with national and county governments, development and implementation agencies, civil society, the private sector, academic and research institutions, and the communities. Further, the programme will address the prevailing constraints to promote a transformative, resilient, fit-for-purpose organisational system with sustainable financing mechanisms to realize the programme objectives and assure commodity security. By building robust monitoring and evaluation capabilities, the programme will strengthen accountability and the use of evidence to inform policy, planning, and decision-making. Cross-border collaboration will be prioritized to achieve the vision of a malaria-free Kenya. In order to progress toward this vision, the NMP will be guided by the following strategic directions:

i. Optimise coverage of appropriate and impactful interventions.

ii. Accelerate the adoption of research, innovation, and emerging technologies to enhance malaria control and elimination efforts.

iii. Ensure a resilient, sustainable, and collaborative malaria programme through transformative leadership and governance at all levels.

Goals

1. To reduce malaria incidence by 80 percent and malaria deaths by 90 percent of 2023 levels by 2027/2028
2. To interrupt indigenous malaria transmission in selected counties by 2027/2028

Strategic objectives and key activities

The overall objectives under each strategic direction are as follows:

Optimise coverage of appropriate and impactful interventions:

1. To ensure universal coverage of appropriate vector control interventions in all populations at risk of malaria
2. To ensure optimum coverage of malaria chemoprevention interventions and vaccines in eligible populations
3. To ensure malaria cases are managed according to the national diagnosis, treatment, and prevention guidelines
4. To ensure optimal utilisation of malaria interventions

Accelerate adoption of research, innovation, and emerging technologies to enhance malaria control and elimination efforts:

5. To strengthen malaria surveillance and generation of evidence for decision-making
6. To interrupt indigenous malaria transmission in four targeted counties by 2027/2028

Ensure a resilient, sustainable, and collaborative malaria control programme through transformative leadership and governance at all levels:

7. To strengthen leadership, management, governance, sustainable financing, and commodity security for effective malaria programming at all levels

Guiding principles

The following principles will guide implementation of the strategies by the NMP and stakeholders. They are aligned with the Kenya Malaria Policy and the KHSSP 2023—2027.

1. A people-centred and participatory approach to malaria interventions
2. Devolution of implementation services
3. Equity, human rights, and gender in the provision of malaria services
4. Multi-sectoral approach to realizing malaria goals
5. Social accountability and efficient use of resources
6. Tailored, adaptive, and innovative tools, approaches, and strategies for effective programme implementation

4.1 Objective 1. To ensure universal coverage of appropriate vector control interventions in all populations at risk of malaria

This objective will focus on people-centred and participatory approaches in scaling up vector control initiatives, including provision of LLINs, IRS, and LSM interventions according to risk stratification in the context of integrated vector management. Innovations will be adopted and implemented as appropriate, especially those that address the emerging threat of insecticide resistance and modern, effective malaria vector control methods.

In collaboration with research institutions and partners, data on composition of vector species and spatial distribution, vector densities, changes in vector behaviour, human biting rates, parous rates, and vector susceptibility to insecticides will be continuously collected.

The objective will be implemented through the following strategies:

4.1.1: LLIN distribution as per the updated stratification maps

Digitalized mass net distribution campaign will be conducted every three years. To sustain optimum LLIN coverage and address the gap in attrition, continuous distribution of LLINs to pregnant women and children under one year will be implemented through antenatal care (ANC) clinics, child welfare clinics, and community channels.

4.1.2: Indoor residual spraying

Annual IRS campaigns to reduce malaria transmission will be conducted in select counties according to the IRS implementation strategy. Focalized IRS will be undertaken in response to malaria upsurges, while reactive IRS will be undertaken in the malaria elimination settings.

4.1.3: Larval source management

Appropriate LSM interventions will be conducted in targeted areas.

4.1.4: Adopt new appropriate vector control interventions or technologies

The NMP and its stakeholders will review and utilize innovations in vector control as they become available.

4.1.5: Review and update vector control guidelines

The NMP will review and update the country's vector control strategy documents and guidelines, such as the IRS Implementation Strategy, Insecticide Resistance Management Plan, Entomological Surveillance Operational Guidelines, and the Integrated Vector Control Strategy for malaria. The Integrated Vector Management strategy will be finalized, and an LSM Implementation strategy will be developed. Studies are underway to generate evidence for the impact of spatial repellents at the community level. A spatial repellents guideline will then be developed to inform scale-up of the intervention.

4.1.6: Strengthen malaria surveillance for generation of vector bionomics and insecticide resistance profiles

The NMP will conduct entomological surveillance at sentinel sites and ensure quality entomological data is available quarterly. Timely procurement of entomological surveillance tools and training of county-level entomologists will be key in ensuring quality implementation of the surveillance activity. Annual monitoring of vector susceptibility to insecticides will be done. The entomological data will be used to develop the country's entomological profiles.

4.1.7: Optimise entomological data capture and use for decision-making

To streamline the collection and storage of entomological data, an entomology database and data collection tools will be finalized. National and county level entomology teams will be trained on the data tools; the teams will be supported through annual meetings to operationalize the reporting system and to continuously capture, analyse, and share quality entomological data. The meetings will foster collaboration, knowledge sharing, and identification of best practices. Biannual review meetings will facilitate monitoring of markers of malaria transmission to inform implementation of targeted interventions.

4.1.8: Strengthen the generation of data on the efficacy and effectiveness of vector control tools and technologies

The efficacy and effectiveness of LLINs, IRS and LSM will be monitored through LLIN durability survey, pre- and post-spray insecticide residual efficacy assessments, and entomological surveillance activity respectively.

4.2 Objective 2. To ensure optimum coverage of malaria chemoprevention interventions and vaccines in eligible populations

Malaria chemoprevention refers to the use of medicines to prevent malaria infection and its consequences, particularly in populations at high risk such as pregnant women and children. Kenya is currently implementing intermittent preventive treatment of malaria in pregnancy using Sulfadoxine-Pyrimethamine (IPTp-SP) in 15 counties, 14 in coast- and lake-endemic region, Turkana County as well as in sub-counties bordering the four fringe counties (Kisii, Nyamira, Nandi, and Kericho). Seasonal malaria chemoprevention (SMC) is being piloted among children under-five in Turkana County.

The malaria vaccine is administered to children from six months of age in 51 sub-counties in the malaria lake-endemic region.

To attain optimal coverage of the intervention to prevent malaria in pregnancy (MIP), the country will introduce implementation of community-IPTp that involves integrating community and digital health to increase demand and uptake of the interventions.

4.2.1: Ensure at least 80 percent of all eligible pregnant women at risk receive IPTp

Erratic stock supply, late initiation of IPTp-SP among pregnant women due to delays in ANC initiation, and missing out on many teenage pregnancies are contributing factors to the low coverage of three or more doses of IPTp. Community Health Promoters (CHPs) will be engaged in referring pregnant women who miss doses of IPTp to scale up its routine administration at the health facility level. The mentorship model will be used to strengthen healthcare workers' capacity on MIP and facilitate effective intervention delivery. CHPs will also map the referral clients and conduct follow-up of pregnant women and adolescent girls yearly. The NMP and counties will review implementation strategies on community-IPTp service delivery.

4.2.2: Adopt other relevant chemoprevention strategies

Guidelines will be reviewed to incorporate other relevant chemoprevention interventions as local evidence emerges on their potential for burden reduction. This will include use of antimalarial medication for population-based prevention of malaria among young children in highly seasonal transmission areas. NMP will also consider implementation of post-discharge malaria chemoprevention (PDMC) to reduce readmission and death among children recently discharged from hospital after recovery from severe anaemia.

4.2.3: Ensure all populations eligible for the malaria vaccine are covered

The malaria vaccine, when combined with other preventative measures, can significantly reduce the incidence of clinical malaria, severe malaria, hospitalizations, and malaria-related mortality. Data on case incidence, prevalence, and child mortality will be used to inform scale-up of the recommended malaria vaccine. The vaccine will be implemented through the country's expanded programme on immunization, with the malaria programme providing a supporting role through integrating malaria messages in social behaviour change communication, participating in joint activities, and engaging the vaccine experts in NMP coordination structures.

4.2.4: Develop innovative solutions and strategies to address gender and equity barriers in the implementation of malaria chemoprevention

Innovative ways to deliver IPTp, such as through group-ANC models for adolescent girls and young women, will be explored as appropriate. Additional activities to address barriers to implementation that are due to the diversity among pregnant women will include identifying existing women leaders who can act as mentors and role models in chemoprevention interventions.

4.3 Objective 3. To ensure malaria cases are managed according to the national diagnosis, treatment, and prevention guidelines

The national diagnosis, treatment, and prevention guideline recommends the testing of all suspected cases of malaria, as well as the administration of the first dose of Artemether-Lumefantrine under direct observation by a health worker at the health facility or by CHPs trained in community case management of malaria at the community level. About one-third of patients seek care in the private sector; therefore, the strategies to achieve this objective will involve engagement with facilities in the private sector to improve compliance with the guidelines and to create an enabling environment for effective malaria case management.

4.3.1: Ensure 100 percent of confirmed malaria cases receive appropriate treatment

The malaria diagnosis, treatment, and prevention guidelines and the community case management training curriculum and manual will be reviewed and updated in line with globally recommended approaches and interventions including implementation of Multiple First-line Therapy and innovative technologies. A training of trainers will be undertaken to facilitate cascading the skills and knowledge on uncomplicated and severe malaria case management through regular mentorship at the health facilities. The focus at the health facilities will include strengthening clinical audit and quality improvement activities for severe malaria. Mapping and analysis of granular data will be done to identify health facilities and catchment areas in the high endemic counties that receive or manage high number of severe malaria cases to inform response interventions and strategies including targeted capacity-building.

4.3.2: Ensure 100 percent of suspected malaria cases receive quality-assured parasitological diagnosis at all levels of care

The in-service parasitological diagnosis training curriculum and manual for medical laboratory officers will be reviewed to ensure they are up-to-date and aligned with current best practices. Following this review, master trainers in the eight lake-endemic counties will be trained in quality assurance for malaria parasitological diagnosis, and they will be expected to disseminate the knowledge and skills within their counties. An annual national quality assurance review meeting will be conducted to evaluate the progress made and identify areas for improvement in diagnostic practices. Quality assurance of community-based diagnosis using mRDTs will be conducted through routine supportive supervision.

4.3.3: Strengthen public-private engagement and partnerships for quality malaria case management

The private sector's quality of care will be monitored through periodic data reviews and health facility assessments including review of the data in the M-jali platform. Private health providers will be mapped to provide an understanding of their level of involvement in malaria case management. The providers will be trained through digital platforms in malaria case management to improve their knowledge and skills for delivery of effective malaria case management. The case management guidelines and standard operating procedures will be disseminated to the private sector to standardize practices and promote adherence to guidelines on malaria care.

4.4 Objective 4. To ensure optimal utilisation of malaria interventions

The KMS 2023—2027 targets to reduce malaria incidence by 80 percent and mortality by 90 percent of the 2023 levels, which hinges on rapidly and effectively scaling up equitable coverage of appropriate and cost-effective interventions. Social behaviour change will be vital in promoting intervention coverage, mobilizing communities, and catalysing the adoption and uptake of the right interventions. SBC will also support efforts to advocate for increased investments, strengthen evidence-based community activities, enhance SBC coordination structures, and amplify awareness creation efforts.

4.4.1: Advocacy at all levels for increased investments and utilisation of malaria interventions

Advocacy forums will be conducted for health and budget committees, the council of governors, and partners to increase investments in malaria interventions. Advocacy briefs will also be developed at national and county levels. Biannual advocacy sessions will be held with relevant stakeholders, including other government sectors, religious leaders, opinion leaders, youth, and the private sector stakeholders. Targeted advocacy campaigns will be carried out for special populations.

4.4.2: Enhance awareness and utilisation of malaria interventions through comprehensive, evidence-based SBC approaches

Malaria education programs in schools will be implemented to foster awareness and understanding among students and teachers, noting that in Kenya, malaria is most prevalent among youth ages 10—14. These programs will include interactive sessions, competitions, and the establishment of malaria clubs to engage young people actively in the fight against malaria. Tailored malaria workplace programs for community workplaces will be developed and disseminated to help educate employees about prevention and treatment of malaria. To further enhance community awareness, awareness and risk communication campaigns during malaria outbreaks will be conducted to create awareness of the malaria preventive measures and encourage prompt treatment seeking. An omnibus survey will be carried out every year to assess programme effectiveness and identify areas that require additional focus.

4.4.3: Strengthen the structure for coordination and delivery of malaria SBC interventions at all levels

County SBC plans will be reviewed and updated every three years to ensure that malaria prevention and treatment messages are tailored to county-specific needs and contexts. SBC coordination forums will be held quarterly at all levels to facilitate the implementation and monitoring of the county SBC plans. Dialogue sessions between the community and link health facilities will be conducted to improve provider-community relations, enhance service delivery, and increase access to malaria services. Recognizing the importance of rights-based issues, capacity-strengthening on gender and disability inclusion for health providers will be undertaken to help create an equitable and accessible health system.

4.4.4: Evidence-based SBC approaches for removing barriers to gender, equity, and human rights in the utilisation of malaria interventions

Rapid gender analysis, barrier assessments, and matchbox assessments will be conducted to inform the development of targeted interventions. Messages targeting the KVPs will be developed in collaboration with affected communities to ensure that the communication materials are culturally appropriate and accessible, and resonate with the intended audience. Populations at risk, such as pregnant women, will be engaged in sensitization activities to empower them to take an active role in their health and promote the uptake of malaria services. A malaria behavioural survey (MBS) will be carried out halfway through the strategy period to evaluate these interventions' effectiveness and to identify areas for improvement.

4.5 Objective 5. To strengthen malaria surveillance and generation of evidence for decision-making

The NMP will continue to work with the Division of Digital Health, Informatics, and Innovations to increase the availability and use of routine data collection and reporting tools at all levels. Availability of the HIS tools will ensure that critical malaria data, including on malaria-related mortality, is accurately captured and reported. Health worker capacity to report inpatient data will also be enhanced. Routine stratification of the malaria burden will be conducted to inform targeting of interventions. Malaria bulletins and county profiles will be developed to foster a culture of data-driven decision-making and implementation of evidence-based interventions that effectively address the unique malaria challenges faced by counties and communities. By building robust monitoring and evaluation capabilities, the programme will strengthen accountability and the use of evidence to inform policy, planning and decision-making.

4.5.1: Strengthen reporting of routine malaria data

The NMP will quantify the gap in data capture and reporting tools and advocate for above 95 percent routine data reporting in public health facilities. Health workers will be trained on the International Classification of Diseases 11th Revision (ICD-11), linked to reporting of inpatient data in the KHIS tracker, to fast-track the change in data quality and improve reporting of morbidity and mortality data. Health workers from health facilities owned by faith-based organisations (FBOs) and the private sector will be capacity-strengthened in routine reporting to the KHIS.

4.5.2: Improve the quality of routine malaria data from 76 to 90 percent in all counties by 2027/28

Data quality assessments will be conducted and data quality improvement plans developed to address identified gaps in data. Annual malaria data review meetings will be held with County Health Management Teams (CHMTs) to share insights and strategize on effective interventions based on informed decision-making. Mentorship and support supervision will be implemented at all levels to foster a culture of continuous learning among health workers, ensuring they have the skills and knowledge necessary to collect and analyse malaria data effectively at their respective levels.

4.5.3: Ensure optimal and timely epidemic monitoring for a prompt and informed response

Monitoring epidemic thresholds for malaria at the subnational level will ensure timely detection of potential outbreaks, enabling appropriate responses to mitigate the impact on affected communities. The EPR monitoring app anchored in KHIS will provide information on any threshold surpassed to enable counties and sub-counties to implement their response plans, including notifying all levels and generating situation reports. Rapid pre-epidemic readiness assessments and post-epidemic evaluations will be conducted to provide data on the strengths and weaknesses of the EPR system, informing the development of evidence-based strategies to strengthen resilience and responsiveness. Annual EPR review and planning meetings will be held to evaluate the effectiveness of existing strategies, identify areas for improvement, and develop targeted interventions to enhance epidemic preparedness.

4.5.4: Conduct periodic assessments and population surveys to inform programmatic decisions

Periodic assessments and population surveys (namely the KMIS, PMLLIN, and KDHS) will be carried out at set intervals to assess the effectiveness of malaria interventions, help identify areas needing improvement, and enhance the understanding of malaria and health dynamics in the population. Malaria health facility assessments will be conducted in health facilities managed by the public, FBOs, and private sectors to evaluate service delivery and access to quality malaria treatment. An assessment of the malaria surveillance system will be undertaken to provide a systematic evaluation of the system in country.

4.5.5: Strengthen the dissemination and use of malaria data-backed information products

Capacity-building on KHIS and the malaria data visualization platforms (malaria surveillance dashboards, malaria scorecard, and malaria module) will be conducted for the CHMT and sub-county health management team (SCHMT) members to enhance data-driven decision-making at the level of intervention implementation. Regular updates to the malaria stratification maps will be done to ensure that interventions are targeted to areas with the greatest need. The malaria data-backed information products such as the stratification maps, malaria bulletins and profiles will be regularly updated in collaboration with stakeholders at all levels to promote transparency, facilitate knowledge sharing, and identify emerging themes for action.

4.5.6: Track and disseminate malaria operational research findings to inform programming

A comprehensive database of malaria research studies will be updated annually to support consolidating research findings and to facilitate access to information that can inform policy and practice. The malaria programme research agenda will be updated regularly to ensure it remains relevant and aligned with emerging malaria control and elimination issues. A biennial national malaria research-to-policy conference will be held to provide a platform for stakeholders to discuss findings, share insights, and translate research into actionable policies. An integrated malaria data repository will be developed to enhance data accessibility and usability, allowing for more effective analysis and collaboration among researchers, policymakers, and health practitioners, thus strengthening the evidence base for malaria interventions, and supporting the ongoing fight against the disease.

4.6 Objective 6. To interrupt indigenous malaria transmission in four targeted counties by 2027/2028

Malaria transmission within the country is heterogeneous, with the lowest transmission and burden in areas epidemiologically classified as very low transmission with prevalence rate less than one percent. Given this low burden in a vast area in the central part of the country and following the establishment of malaria elimination structures in the previous KMS, the malaria elimination target counties of Kirinyaga, Laikipia, Nyeri, and Nyandarua

will continue to implement interventions in the context of pre-elimination. This is in line with the Global Technical Strategy for Malaria (2016—2030) guidance, which states that all countries, irrespective of the burden, should accelerate efforts towards eliminating and attaining malaria-free status.

4.6.1: Strengthen programme capacity for malaria elimination at all levels

Advocacy for political commitment and support for the malaria elimination agenda will be carried out at all levels. The elimination unit will ensure the revision of the diagnosis and treatment guidelines, standard operating procedures, and job aids, including malaria case definition and management in elimination settings. A follow-up malaria elimination assessment and sub-national malaria verification will be conducted to assess progress towards the elimination objective.

4.6.2: Operationalize case-based surveillance and response in targeted counties

A case-based surveillance system will be developed to enable the tracking of individual cases and the identification of transmission hotspots. Health workers in the targeted counties will be trained as part of the rollout of the case-based surveillance system. Targeted or reactive indoor residual spraying in active foci will be conducted to interrupt transmission and prevent the spread of the disease. Identification of malaria hotspots and stratification will be done to inform effective and granular intervention targeting.

4.6.3: Foster multi-sectoral collaboration and promote risk communication and community engagement

Strategies that create a collaborative environment will include engaging various community networks, community-based organisations, and multi-sectoral state and non-state actors to participate in malaria elimination efforts. Malaria elimination messages will be disseminated to targeted audiences via preferred communication channels, including interpersonal communication, to raise awareness and promote behaviours that contribute to malaria elimination. Continued capacity-building for the CHMTs from the targeted malaria-elimination counties will be undertaken to empower officials from those counties to be champions of the malaria elimination agenda within their jurisdictions.

4.7 Objective 7. To strengthen leadership, management, governance, sustainable financing, and commodity security for effective malaria programming at all levels

Continuous organisational capacity development and succession management at national, county, and sub-county levels will be necessary to ensure the NMP has adequate skills and knowledge in malaria programming. Developing and implementing robust management and performance frameworks to enhance the coordination, monitoring, and evaluation of the malaria programme will strengthen the systems to achieve the KMS goal. The NMP will endeavour to engage senior county government leadership through the Council of Governors caucus for health to be proactive in malaria control efforts to enhance programme sustainability. The programme management strategies will focus on good governance practices, sustainable financing, commodity security, collaboration, and partnerships, including resilience and climate change adaptability.

4.7.1: Strengthen leadership and governance structures at all levels for the delivery of the strategy

To realize the ambitious goal set to reduce malaria cases and incidence, especially in the eight lake-endemic counties, the programme's organisational structure at the national and county levels will be revised to include a requisite skillset among the malaria teams. Each malaria team will comprise of appropriately skilled entomologists, laboratory technologists, and epidemiologists or surveillance officers to support the country's malaria control efforts toward the KMS goal. The national level will provide leadership and oversight to ensure the counties and sub-counties are on the right track to deliver the KMS goal. The NMP will establish a program management technical working group, and will routinely review and update the terms of reference for all COEs and subcommittees. Policy dialogues and advocacy on integrating GER to promote equitable access to malaria interventions and services will be held.

4.7.2: Ensure 100 percent availability of appropriate malaria commodities through effective supply chain management at all levels

The NMP will promote malaria commodity security and management at all levels to ensure the consistent availability and proper utilisation of the essential malaria prevention, diagnosis, and treatment tools. Commodity management will involve strengthening supply chain systems, improving forecasting and quantification, and enhancing storage and distribution practices. Reporting poor-quality medicines and conducting post-market surveillance for malaria medicines annually will seek to maintain the integrity of the drug supply chain and protect patients from potential harm. The quality control measures will include pre-shipment inspections, post-delivery testing, and regular monitoring of storage conditions. By prioritizing malaria commodity security and quality, health

systems can guarantee that communities have access to effective, safe, and reliable malaria interventions, ultimately reducing the burden of malaria in Kenya.

4.7.3: Secure at least 80 percent of the required funding for the costed KMS through diversified resource mobilisation initiatives

The NMP will advocate for the prioritization and increased funding for malaria interventions with key decision-makers across various forums at both national and county levels to mobilize the necessary resources to combat malaria effectively. County malaria financing needs assessments will be undertaken to provide a clear understanding of the financial requirements for effective malaria control and to help identify gaps that need to be addressed locally. The private sector will be engaged to identify financing opportunities for malaria and unlock additional resources. The NMP will routinely track the allocation and expenditure of malaria funds at all levels to ensure transparency and accountability, and to allow stakeholders to assess the effectiveness of investments and make informed decisions about future funding. By integrating these strategies, stakeholders can create a robust financial framework that supports sustained malaria elimination and control efforts.

4.7.4: Strengthen stakeholder collaboration and coordination for improved malaria programming

The NMP will ensure increased capacity in malaria programming at all levels. The programme will conduct annual mapping of partners and stakeholders at all levels and ensure a functional malaria health sector working committee and COEs. A multi-sectoral collaboration and coordination framework will be developed. The NMP will participate in joint planning and implementation of priorities adopted in cross-border initiatives.

4.7.5: Achieve at least 80 percent of malaria programme performance

The 2024 MPR recommended that the NMP devise an approach for engagement with the counties at the beginning and end of reporting periods and assess the implementation levels of the county annual work plans, focusing on malaria activities. Critical to this engagement will be the support to define and clearly articulate epidemiological and entomological targets at subnational level to facilitate achievement of the nation-wide goal. The KMS and other relevant policy documents will be disseminated to facilitate alignment of malaria control and elimination efforts across various stakeholders. The NMP will support joint annual review and planning meetings with counties and partners to foster collaboration and ensure that all parties are informed about progress, challenges, and strategic priorities. This collective approach allows for the tracking of progress in county malaria activity implementation, providing valuable insights into the effectiveness of interventions and enabling timely adjustments to strategies as needed. By integrating these activities, stakeholders can enhance the overall impact of malaria control efforts, ensuring that resources are utilized efficiently and that the goal of reducing malaria incidence and mortality is achieved.

4.7.6: Strengthen resilience and climate change adaptability for malaria programming

Over the past few years, health inequities have been exacerbated by the impacts of interlinked crises, including climate change. Climate change adaptation will be incorporated into the NMPs' activities. To increase knowledge of the climate change health connection, a multidisciplinary approach will be employed to train and mentor national and county teams on climate change and malaria. The training and mentorship will enhance capacity to address the impacts of environmental changes on malaria transmission. The NMP will advocate for inclusion of climate data in the KHIS to enable integration of environmental factors into health planning and decision-making processes, thereby improving the effectiveness of malaria interventions.

5.1 Implementation plan

Table 5 summarizes the main activities, implementation timelines, and the entities responsible for the activities. This plan shall guide the implementation of activities by the malaria programme, at national and county levels, as well as the partners.

Table 5: Objectives, strategies, activities, and implementation timelines

Strategies	Main Activities	Financial Years					Responsible
		2023/24	2024/25	2025/26	2026/27	2027/28	
Objective 1: To ensure universal coverage of appropriate vector control interventions in all populations at risk of malaria							
1.1 LLIN distribution as per the updated stratification maps	1.1.1 Conduct digitalized mass net distribution campaign every three years	X			X		NMP, Counties, and Partners
	1.1.2 Distribute LLINs routinely to pregnant women and children under one year through ANC and child welfare clinics	X	X	X	X	X	
	1.1.3 Distribute LLINs through community channels		X	X			
1.2 Indoor residual spraying	1.2.1 Conduct annual IRS campaign in targeted areas according to the IRS implementation strategy		X	X	X	X	NMP, Counties, and Partners
	1.2.2 Conduct focalised IRS in response to malaria upsurges		X	X	X	X	
	1.2.3 Conduct reactive IRS in elimination settings		X	X	X	X	
1.3 Larval source management	1.3.1 Conduct LSM in targeted areas according to LSM implementation guidelines			X	X	X	NMP, Counties, and Partners
1.4 Adopt new appropriate interventions or technologies	1.4.1 Review and use innovations in vector control		X				NMP, Counties, and Partners
	1.4.2 Expand the implementation of spatial repellents for an increased understanding of operational feasibility			X	X	X	
1.5 Review and update vector control guidelines	1.5.1 Review and update existing vector control strategy documents and guidelines		X				NMP, Counties, and Partners
	1.5.2 Develop LSM implementation guidelines		X	X	X	X	
	1.5.3 Finalise the Integrated Vector Management strategy and spatial repellent guidelines		X	X	X	X	NMP, Division of Vector-Borne and Neglected Tropical

							Diseases, Counties, and Partners
1.6 Strengthen malaria surveillance for generation of vector bionomics and insecticide resistance profiles	1.6.1 Procure entomological surveillance tools		X	X	X	X	NMP, Counties, and Partners
	1.6.2 Review and update the selection of sentinel sites for entomological surveillance		X		X		
	1.6.3 Review and update the selection of sentinel sites for vector susceptibility testing		X		X		
	1.6.4 Conduct quarterly entomological surveys		X	X	X	X	
	1.6.5 Strengthen entomological surveillance capacity for county-level entomologists		X		X		
	1.6.6 Conduct annual monitoring of vector susceptibility to insecticides		X	X	X	X	
	1.6.7 Develop entomological profile maps for select sub-counties		X		X		
1.7 Optimise entomological data capture and use for decision-making	1.7.1 Finalize and operationalize an entomology database and accompanying data capture tools		X				NMP, Counties, and Partners
	1.7.2 Sensitize national and county entomologists on the entomological data capture processes		X		X		
	1.7.3 Hold annual meetings to support operationalisation and continuous capture of entomology data into the entomology database		X	X	X	X	
	1.7.4 Hold biannual review of entomological data to monitor markers of transmission		X		X		
	1.8.1 Monitor efficacy and effectiveness of LLINs using the LLIN durability survey		X	X	X	X	NMP, Counties, and Partners

1. 8. Strengthen the generation of data on the efficacy and effectiveness of vector control tools and technologies	1.8.2 Monitor efficacy and effectiveness of IRS through pre- and post-spray assessments		X	X	X	X	
	1.8.3 Monitor efficacy and effectiveness of LSM through routine entomological surveillance			X	X	X	
Objective 2: To ensure optimum coverage of malaria chemoprevention interventions and vaccines in eligible populations							
2.1 Ensure at least 80 percent of all eligible pregnant women at risk receive IPTp	2.1.1 Conduct annual review meetings at the county level for each fringe county	X	X	X	X	X	NMP, Counties, and Partners
	2.1.2 Conduct annual review meetings at the national level	X	X	X	X	X	
	2.1.3 Conduct three orientation meetings, targeting facility-level staff, on MIP interventions in fringe areas and Turkana County	X	X				
	2.1.4 CHPs to map referral cases and follow-up of pregnant women and adolescent girls	X	X	X	X	X	NMP, National Vaccine Program, Counties, and Partners
	2.1.5 Implement strategies on community-IPTp service delivery in select counties	X	X	X	X	X	NMP, Reproductive Health Unit, Counties, and Partners
2.2 Adopt other relevant chemoprevention strategies	2.2.1 Implement SMC among eligible children in target areas	X	X	X	X	X	NMP, Child Health Unit, Counties, and Partners
	2.2.2 Review national chemoprevention guidelines to include SMC and PDMC once the NMP adopts them				X		
2.3 Ensure all populations eligible for the malaria vaccine are covered	2.3.1 Incorporate vaccine experts into existing COE	X	X	X	X	X	NMP, National Vaccinate Programme, Child Health, Counties, and Partners
	2.3.2 Map and validate the eligible population for malaria vaccination scale-up	X	X	X	X	X	
2.4. Develop innovative solutions and strategies to address gender and equity barriers in the implementation of malaria chemoprevention	2.4.1 Capacity-building of healthcare workers on gender and equity barriers that may affect malaria chemoprevention	X	X	X	X	X	NMP, Counties, and Partners
Objective 3: To ensure all malaria cases are managed according to the national diagnosis, treatment and prevention guidelines							
3.1 Ensure 100 percent of confirmed malaria cases receive appropriate treatment	3.1.1 Revise the national malaria diagnosis, treatment, and prevention guidelines		X				NMP, Counties, and Partners
	3.1.2 Update the community case management and biosafety guidelines		X				

	3.1.3 Update the community case management training curriculum and manual		X				
	3.1.4 Orient healthcare workers on the management of uncomplicated malaria, using a blended approach (physical/virtual, hybrid)		X	X	X	X	
	3.1.5 Train and mentor Community Health Assistants (CHAs) and CHPs on community case management of malaria in 10 counties		X				
	3.1.6 Train pre-service instructors on malaria case management		X				
	3.1.7 Provide mentorship to health workers on uncomplicated and severe malaria case management at the health facility level		X	X	X	X	NMP, Counties, and Partners
	3.1.8 Conduct support supervision for uncomplicated malaria case management to CHAs and CHPs		X	X	X	X	
	3.1.9 Conduct community case management mentorship by case management experts		X	X	X	X	
	3.1.10 Conduct training of trainers and cascade severe malaria case management training to facility health workers		X	X			NMP, Counties, and Partners
	3.1.11 Train health workers on correctly classifying malaria morbidity and mortality using ICD-11		X	X			
	3.1.12 Strengthen clinical audit and quality improvement activities for severe malaria		X	X	X	X	
	3.1.13 Conduct mortality audits for deaths due to severe malaria		X	X	X	X	
	3.1.14 Conduct therapeutic efficacy studies every two years		X	X			
	3.1.15 Pilot multiple first-line therapeutics to diversify first-line antimalarial drugs			X	X		
3.2 Ensure 100 percent of suspected malaria cases receive quality-assured parasitological diagnosis at all levels of care	3.2.1 Review and update malaria parasitological diagnosis guidelines and quality assurance guidelines		X				NMP, Counties, and Partners
	3.2.2 Review the in-service parasitological diagnosis training curriculum and manual for medical laboratory officers		X				
	3.2.3 Train master trainers from the eight lake-endemic region in quality assurance for malaria parasitological diagnosis		X				
	3.2.4 Scale up proficiency testing for malaria microscopy		X	X	X	X	NMP, National Public Health Laboratory

	3.2.5 Facilitate technical support supervision and mentorship for malaria parasitological diagnosis in 47 counties		X	X	X	X	NMP, Counties, and Partners
	3.2.6 Conduct national external competence assessment of malaria microscopists for quality assurance officers		X				
	3.2.7 Conduct external competence assessment of malaria microscopists for national core group		X	X	X	X	NMP, National Public Health Laboratory
	3.2.8 Conduct national annual quality assurance review meeting		X	X	X	X	NMP, Counties, and Partners
	3.2.9 Conduct histidine-rich protein 2 gene deletion surveys every two years			X			NMP
	3.2.10 Strengthen the national malaria reference laboratory slide bank		X	X	X	X	NMP, National Public Health Laboratory
	3.2.11 Establish mRDT proficiency testing program			X	X	X	NMP, National Public Health Laboratory
	3.2.12 Establish sentinel sites for routine malaria molecular surveillance in 14 counties		X	X			NMP
	3.2.13 Strengthen the capacity of the genomic laboratory staff to conduct molecular analysis		X	X			NMP, National Public Health Laboratory
	3.2.14 Conduct quality assurance for mRDTs at the community level		X	X	X	X	NMP, Counties, and Partners
3.3 Ensure at least 50 percent of private sector facilities adhere to national malaria diagnosis, as well as treatment and prevention guidelines	3.3.1 Map the private health providers to understand their level of involvement in malaria case management	X	X	X	X	X	NMP, Counties, and Partners
	3.3.2. Train private health providers on malaria case management through digital platforms		X	X	X	X	NMP
	3.3.3 Disseminate case management guidelines and standard operating procedures in the private sector	X	X	X	X	X	NMP
	3.3.4 Conduct mentorship sessions for private health providers	X	X	X	X	X	NMP
	3.3.5 Monitor the quality of care provided by the private sector through periodic data review		X	X	X	X	NMP
Objective 4: To ensure optimal utilisation of malaria interventions							
4.1 Advocacy at all levels for increased investments and utilisation of malaria interventions	4.1.1 Build capacity for malaria advocacy at all levels		X		X		NMP, Division of Health Promotion, Counties and Partners
	4.1.2 Develop advocacy briefs for national and county levels		X				

	4.1.3 Conduct high-level advocacy activities for increased utilisation of malaria interventions		X	X	X	X	NMP, Counties, Partners
	4.1.4 Conduct biannual advocacy sessions with relevant stakeholders on utilisation of malaria interventions		X	X	X	X	NMP, Division of Health Promotion, Partners, Kenya Malaria Youth Corps
	4.1.5 Carry out targeted advocacy campaigns for special populations		X	X	X	X	
	4.1.6 Engage civil society organisations, community-based organisations, communities, and other networks to promote social accountability and utilisation of malaria interventions through the community scorecard, i-monitor tool, and community action cycle approaches		X	X	X	X	NMP, Division of Health Promotion, Division of Community Health Services, Counties, and Partners
4.2 Enhanced awareness and utilisation of malaria interventions through comprehensive, multi-channelled, evidence-based SBC approaches	4.2.1 Develop, disseminate, and distribute malaria SBC package in channels and formats (including digital modules) to promote the utilisation of all malaria interventions at the household level		X	X	X	X	NMP, Division of Health Promotion, Partners, Counties, and community-based organizations
	4.2.2 Conduct mass media activities and campaigns		X	X	X	X	NMP, Division of Health Promotion, and Partners,
	4.2.3 Conduct malaria SBC campaign targeting key and vulnerable populations		X	X	X	X	NMP, Division of Health Promotion, Partners
	4.2.4. Support innovative solutions and technologies to disseminate targeted malaria messages to the masses		X	X	X	X	NMP, Division of Health Promotion, Counties, and Partners
	4.2.5 Conduct integrated SBC capacity-strengthening for CHPs, health workers, and community-based groups, including special interest groups		X	X	X	X	NMP, Division of Community Health Services, Counties, and Partners
	4.2.6 Conduct capacity-strengthening sessions for local leaders, influencers, and religious leaders on their role in influencing community participation in malaria prevention, control, and elimination		X	X	X	X	NMP, Counties, and Partners
	4.2.7 Facilitate community-led dialogue and sensitization sessions to promote the uptake of preventive measures		X	X	X	X	NMP, Division of Community Health Services, and Partners
	4.2.8 Implement school malaria education programs, including interactive sessions, competitions, and clubs		X	X	X	X	NMP, Ministry of Education, Counties, and Partners
	4.2.9 Develop and disseminate workplace malaria programs for implementation at community workplaces (gap identified in the malaria matchbox assessment)		X	X			NMP, Counties, and Partners

	4.2.10 Conduct awareness and risk communication campaigns for malaria outbreaks		X	X	X	X	NMP, IDSR, Division of Health Promotion, Counties, and Partners
	4.2.11 Conduct omnibus survey		X	X	X	X	NMP, Partners
4.3 Strengthen the structure for coordination and delivery of malaria SBC interventions at all levels	4.3.1 Conduct capacity-strengthening for coordination of SBC activities		X	X	X	X	NMP, Division of Community Health Services, and Counties
	4.3.2 Develop triennial county SBC plans every three years		X			X	NMP, Counties, and Partners
	4.3.3 Hold quarterly SBC coordination forums at all levels.		X	X	X	X	NMP, Division of Community Health Services, Counties, and Partners
	4.3.4 Hold quarterly SBC COE meetings		X	X	X	X	NMP, Partners
	4.3.5 Conduct capacity-strengthening sessions on provider interpersonal communication to improve service delivery communication	X	X	X	X	X	NMP, Division of Health Promotion, Counties, and Partners
	4.3.6 Conduct community health facility dialogues to improve community provider relations for improved service delivery and access to malaria services		X	X	X	X	NMP, Division of Community Health Services
	4.3.7 Conduct capacity strengthening for health providers on rights-based issues and gender, including disability inclusion in the key and vulnerable population		X	X	X	X	NMP, Partners, Counties, Kenya NGOs, Alliance Against Malaria (KeNAAM)
4.4: Evidence-based SBC approaches for removing barriers to gender, equity, and human rights in the utilisation of malaria interventions	4.4.1 Conduct rapid gender analysis, rapid barrier assessments, and malaria matchbox assessment		X			X	NMP, Counties, Partners KeNAAM
	4.4.2 Co-create KVP messages		X	X	X	X	NMP, Counties, Partners, and KeNAAM
	4.4.3 Engage the populations at risk (e.g., pregnant women) in sensitization activities		X	X	X	X	NMP, Counties, Partners, and KeNAAM
	4.4.4 Engage champions to sensitize on the utilisation of available malaria interventions		X	X	X	X	NMP, Counties, Partners, and KeNAAM
	4.4.5 Raise awareness among women, men, adolescents, and persons living with disabilities, among others, on utilisation of available malaria interventions		X	X	X	X	NMP, Counties, Partners, and KeNAAM
	4.4.6 Conduct malaria behavioural survey				X		NMP, Counties, Partners, and KeNAAM

Objective 5: To strengthen malaria surveillance and generation of evidence for decision-making							
5.1 Strengthen reporting of routine malaria data	5.1.1 Quantify the data capture and reporting tools gap, and advocate for above 95 percent routine data reporting in public health facilities	X	X	X	X	X	NMP, Counties
	5.1.2 Capacity-building of health workers at health facilities owned by FBO and the private sector in reporting of routine data into the KHIS	X	X	X	X	X	NMP, Counties
	5.1.3 Capacity-build healthcare workers on ICD-11 to improve reporting of malaria inpatient data	X	X	X	X	X	NMP, Division of Health Informatics, and Counties
5.2 Improve the quality of routine malaria data from 76 percent to 90 percent in all counties by 2027/28	5.2.1 Conduct data quality assessment and develop data quality improvement plans			X	X		NMP, Counties, and Partners
	5.2.2 Hold annual malaria data review meetings with key CHMTs to inform decision-making	X	X	X	X	X	NMP, Counties
	5.2.3 Implement mentorship and support supervision at all levels	X	X	X	X	X	NMP, Counties, and Partners
5.3 Ensure optimal and timely epidemic monitoring for a prompt and informed response	5.3.1 Monitor epidemic threshold for timely response	X	X	X	X	X	NMP, Counties
	5.3.2 Conduct rapid pre-epidemic readiness assessments and post-epidemic evaluation	X	X	X	X	X	NMP, Counties
	5.3.3 Conduct annual EPR review and planning meetings	X	X	X	X	X	NMP, Counties
5.4 Conduct periodic assessments and population surveys to inform programmatic decisions	5.4.1 Conduct Kenya Malaria Indicator Survey			X			NMP, KNBS, and Partners
	5.4.2 Support KDHS survey				X		MOH, NMP, KNBS, and Partners
	5.4.3 Conduct malaria health facility assessment in the public, FBO, and private sectors	X	X	X			NMP, Partners
	5.4.4 Conduct PMLLIN survey	X				X	NMP, Partners

	5.4.5 Conduct malaria surveillance system assessment			X	X		NMP, Partners
5.5 Strengthen dissemination and use of malaria data-backed information products	5.5.1 Capacity-build CHMT and SCHMT members on utilisation of KHIS, malaria surveillance dashboards, malaria scorecard, and malaria module.	X	X	X	X	X	NMP
	5.5.2 Regularly update malaria stratification maps for targeting of interventions	X	X	X	X	X	NMP, Counties
	5.5.3 Develop and share malaria surveillance bulletins and profiles			X		X	NMP, Counties
5.6. Track and disseminate malaria operational research findings to inform programming	5.6.1 Create and maintain a database of malaria research studies	X	X	X	X	X	NMP
	5.6.2 Update research agenda and build capacity on malaria operational research	X	X	X	X	X	NMP
	5.6.3 Hold biennial national malaria research to policy conference			X		X	NMP, Partners
	5.6.4 Develop an integrated malaria data repository	X	X	X	X	X	NMP, Partners
Objective 6: To interrupt indigenous malaria transmission in four targeted counties by 2027/2028							
6:1 Strengthen programme capacity for malaria elimination at all levels	6.1.1 Advocate for political commitment and support for malaria elimination agenda at all levels		X	X	X	X	NMP, Counties, and Partners
	6.1.2 Hold quarterly COE and technical working group meetings at national and county levels, respectively			X	X	X	NMP, Counties, and Partners
	6.1.3 Build capacity for malaria elimination at all levels			X			NMP, Partners
	6.1.4 Revise diagnosis and treatment guidelines, standard operating procedures, and job aids to include malaria case management in elimination-settings aspects		X				NMP, Counties, and Partners
	6.1.5 Conduct a follow-up malaria elimination assessment to understand health system readiness to implement malaria elimination					X	NMP, Counties, and Partners

	6.1.6 Disseminate the malaria elimination guidance documents in the four targeted counties	X	X	X			NMP, Counties, and Partners
	6.1.7 Undertake sub-national malaria verification in the malaria elimination target areas				X	X	NMP, Counties, and Partners
	6.1.8 Participate in local and international malaria elimination engagement forums	X	X	X	X	X	NMP, Counties, and Partners
6:2 Operationalise case-based surveillance and response in targeted counties	6.2.1 Set up a case-based surveillance system		X				NMP, Counties and Partners
	6.2.2 Strengthen passive and active case detection and notification systems in the targeted malaria elimination counties		X	X	X	X	NMP, Counties, and Partners
	6.2.3 Provide training on case-based surveillance for malaria elimination in targeted counties		X	X	X	X	NMP, Counties, and Partners
	6.2.4 Support health facility in-charges in two counties to conduct case notification		X	X	X	X	NMP, Counties, and Partners
	6.2.5 Conduct targeted reactive IRS for active foci		X	X	X	X	NMP, Counties, and Partners
	6.2.6 Conduct stratification for granular targeting of intervention in targeted counties		X		X		NMP, Counties, and Partners
	6.2.7 Hold cross-county surveillance review meetings with the four malaria elimination targeted counties		X	X	X	X	NMP, Counties, and Partners
6:3 Promote risk communication and community engagement, and foster multi-sectoral collaboration	6.3.1 Engage various community networks, community-based organisations, multi-sectoral state and non-state actors through a variety of approaches to participate in malaria elimination efforts		X	X	X	X	NMP, Counties, and Partners
	6.3.2 Disseminate appropriate malaria elimination messages to targeted audiences through a variety of preferred communication channels, including interpersonal communication		X	X	X	X	NMP, Counties, and Partners
	6.3.3 Strengthen the four malaria elimination CHMTs' capacity as malaria elimination agenda champions		X	X	X	X	NMP, Counties, and Partners
Objective 7: To strengthen leadership, management, governance, sustainable financing, and commodity security for effective malaria programming at all levels							
7.1 Strengthen leadership and governance structures at all levels for the delivery of the strategy	7.1.1 Strengthen capacity to advocate for increased malaria visibility in various forums	X	X	X	X	X	NMP, Counties, and Partners
	7.1.2 Revise the programme organisational structure at the national and county level to incorporate the proposed county malaria teams	X			X		MOH, County Departments of Health

	7.1.3 Strengthen capacity staff on GER integration in malaria programming at national and county levels	X			X		NMP, Counties, and Partners
	7.1.4 Assign and strengthen capacity GER focal points for the malaria programme at national and county levels	X			X		
	7.1.5 Establish programme management technical working group	X					NMP
	7.1.6 Periodic review and update of the terms of reference and membership for all COEs and subcommittees	X		X		X	NMP, Partners
	7.1.7 Conduct policy dialogues and advocacy on the integration of GER to promote equitable access to malaria interventions or services	X		X		X	NMP, Counties, and Partners
7.2 Ensure 100 percent availability of appropriate malaria commodities through effective supply chain management at all levels	7.2.1 Promote malaria commodity security and management at all levels	X	X	X	X	X	NMP, Counties, and Partners
	7.2.2 Ensure the quality of malaria commodities for prevention, diagnosis, treatment, and control	X	X	X	X	X	NMP, Pharmacy and Poisons Board
7.3 Secure at least 80 percent of the required funding for the costed KMS through diversified resource mobilisation initiatives	7.3.1 Advocate for prioritization and increased funding for malaria interventions with key decision-makers in various forums at all levels	X	X	X	X	X	NMP, Counties, and Partners
	7.3.2 Undertake county malaria financing needs assessments	X			X		NMP, Counties, and Partners
	7.3.3 Engage the private sector on financing opportunities for malaria	X	X	X	X	X	NMP, Counties, and Partners
	7.3.4 Routinely track allocation and expenditure of malaria funds at all levels	X	X	X	X	X	NMP, Counties
	7.3.5 Conduct public expenditure reviews	X	X	X	X	X	NMP, Counties
	7.3.6 Disseminate the malaria investment case to the county leadership and potential funders	X					NMP
	7.3.7 Generate evidence to support advocacy efforts for increased funding at all levels	X	X	X	X	X	NMP, Counties, and Partners
7.4 Strengthen stakeholder collaboration and coordination for improved malaria programming	7.4.1 Strengthen malaria coordination platforms at national and county levels	X	X	X	X	X	NMP, Counties, and Partners
	7.4.2 Develop capacity for malaria programming at national and county-level	X	X	X	X	X	NMP, Counties, and Partners
	7.4.3 Develop a multi-sectoral collaboration and coordination framework	X		X			NMP, Counties, and Partners

	7.4.4 Ensure availability of a functional malaria health sector working committee, COEs, and other technical working groups at all levels	X	X	X	X	X	NMP, Counties, and Partners
	7.4.5 Develop and disseminate a private sector engagement framework	X	X				NMP, Counties, and Partners
	7.4.6 Conduct joint planning and implementation of priorities adopted in cross-border initiatives	X	X	X	X	X	NMP, Counties, and Partners
	7.4.7 Conduct annual mapping of partners and stakeholders at all levels	X	X	X	X	X	NMP, Counties
7.5 Achieve at least 80 percent of malaria programme performance	7.5.1 Disseminate the Kenya Malaria Strategy and other policy documents	X		X		X	NMP
	7.5.2 Conduct annual review and planning meetings with partners	X	X	X	X	X	NMP, Counties, and Partners
	7.5.3 Conduct annual review and planning meetings with counties	X	X	X	X	X	NMP, Counties
	7.5.4 Facilitate the mid-term review process for the Kenya Malaria Strategy			X			NMP, Counties, and Partners
	7.5.5 Facilitate end-term review process for the Kenya Malaria Strategy					X	NMP, Counties, and Partners
	7.5.6 Track progress in county malaria activity implementation	X	X	X	X	X	NMP, Counties, and Partners
7.6: Strengthen resilience and climate change adaptability for malaria programming	7.6.1 Undertake training and mentorship of national and county teams on climate change and malaria		X	X	X		NMP, Partners
	7.6.2 Advocate and support the inclusion of climate change data in KHIS		X	X	X	X	NMP, Partners
	7.6.3. Respond to malaria epidemics within 24 hours of notification	X	X	X	X	X	NMP, Counties

5.2 Implementation arrangements

Planning and implementation mechanisms

To strengthen the capacity for malaria programming at national and county levels, the NMP will leverage existing mechanisms in the engagement of senior county leadership through the Council of Governors Caucus for Health, among other forums. Existing human resource and structures, such as the county entomologists within the Division of Vector-Borne and Neglected Tropical Diseases, will link up with the NMP and research institutions on an integrated vector management approach for a well-defined operational modality that is fundamental to both support systematic vector surveillance and proactively identify and manage arising programmatic issues at the county implementation levels. A robust programme structure with a well-defined and functional organisational framework for the malaria programme will be established across all levels. The framework will detail specific roles, responsibilities, and skill requirements for technical staff to bolster the country's execution of malaria initiatives.

Every year, the malaria programme will review its progress in the reduction of cases and deaths of malaria, and interrogate its contribution to the success or failure of the overall country goals. Performance monitoring will be continuously planned for at the beginning of the strategy implementation to collect the data needed for the outcome indicators, and to ensure counties have clear activity implementation timelines.

Partnership coordination system

The national malaria programme leads the coordination of all implementation strategies related to malaria elimination by both development partners and the MOH. The NMP will work with established and new strategic partnerships from MOH, other Government sectors, development partners, research organisations, philanthropies, civil society organisations, donors, academic institutions, and industry leaders to support malaria control and elimination. These partnerships contribute a range of financial, technical, and operational support to facilitate the implementation of malaria interventions in Kenya.

Capacity strengthening

To address the capacity constraints identified in the MPR and other recent evaluations, the NMP has prioritised targeted capacity-strengthening initiatives to improve the skills and competencies necessary for delivering high-quality interventions, and particularly to enhance county-level capabilities. The NMP will establish a programme advisory and oversight committee to oversee programme implementation and facilitate high-level advocacy and resource mobilisation for malaria control and elimination activities. Based on a rational competency framework, annual capacity-strengthening plans will be developed to bridge identified gaps in leadership and governance, communication and advocacy, knowledge management, data analysis and use, and GER. At national and county levels, a malaria data repository will be established as a one-stop shop for all malaria control and elimination information (data, tools, research, reports, surveys, assessments, etc.), and a focal point for online learning and knowledge dissemination will be appointed. The NMP will also ensure that GER strengthening activities are clearly outlined in the work plan, along with strategies to increase staff capacities in GER planning and implementation.

Procurement and supply management (PSM) system

The malaria procurement and supply chain system ensures the continuous availability of malaria commodities through effective supply chain investments and commodity security. Supply chain investments through the Government, Global Fund grants, and PMI funding cycles have progressively focused on funding malaria commodities and capacity strengthening at all levels.

In Kenya, the Public Procurement and Asset Disposal Act No. 33 of 2015 (Republic of Kenya, 2015) guides the procurement of commodities and services for malaria control. The MOH procures malaria medicines and commodities through the Kenya Medical Supplies Authority (KEMSA). KEMSA is mandated to procure, warehouse, and distribute essential medicines and medical supplies in Kenya under the KEMSA Act of 2013. The PMI-funded commodities are warehoused and distributed by the Mission for Essential Drugs and Supplies. Procurement of malaria commodities under special programmes like the Global Fund follows government regulations, and regulations from their respective organisations bind procurement by other donor agencies.

Financial resource management

The national and county-level malaria programmes will focus on the government resource allocation criteria when advocating for resources and using evidence like the investment case for increased funding from the decision-makers. During the financial year, as implementation progresses, the programme at the national and county levels will undertake periodic performance reviews and end-term evaluations to ensure programme implementation is on track; this will include the spending of available resources.

Risk management and mitigation

The KMS 2023—2027 risk assessment identified key risks that could impede the strategy's implementation, and evaluated each risk based on its likelihood and potential impact. Generally, the evaluation found that funding risks, supply chain inefficiencies, and climate change pose significant challenges, with high likelihood and high impact ratings. Specifically, reduced funding and supply chain disruptions are likely to occur, and these could severely disrupt service delivery and implementation efforts. Financial management issues, such as low burn rates and exchange rate variations, also present moderate-to-high risks. Mitigating actions include resource mobilisation, improved financial oversight, and close monitoring of supply chain processes, with contingency plans to realign implementation strategies if these risks materialise. The county treasuries must be more involved, in allocating funds for malaria programming than they were during KMS 2019—2023. Table 6 details the KMS 2023—2027 risk plan.

Table 6. KMS 2023—2027 risk plan

Nature of the risk	Risk ID	Risk description	Impact	Severity	Owner	Mitigating action	Contingent action
Funding risk	R.001	Reduced and inadequate funding from the current funding streams Austerity measures due to the reduced budgetary allocation from the government	Inadequate funding impedes the implementation of the key priorities in the strategies, thereby slowing progress and realisation of the overall goal	High	Principal Secretary – MOH Programme Manager – NMP Malaria Coordinators - County Department of Health	Domestic resource mobilisation, including expanding private sector partnerships for funding and increasing insurance coverage Diversification of the funding, including from non-traditional donors	Review the implementation plan and realign the existing budget Promote integration of malaria activities with other service delivery activities.
Financial management	R.002	Low burn rates due to duration taken to approve and release funds for implementation, leading to non-implementation within the expected timelines	Results in pending bills and negatively affects future allocation and disbursement of funds. It also results in delay of activity implementation	High	Programme Manager – NMP The National Treasury County Treasuries	Proper management of the work plan Better coordination between NMP, KEMSA, and The National Treasury Institute a budget tracking system	Review the implementation plan and realign the existing budget Prioritise what can continue in the absence of funding Communication with relevant affected parties
	R.003	Exchange rate variations	Affects the cost of inputs, impacting the implementation of interventions	Low	Programme Manager – NMP Malaria Coordinators – County Departments of Health	Institute a routine budget tracking system Negotiate favourable terms with suppliers and service providers	Prioritisation of high-impact malaria activities
	R.004	Mismanagement of funds	Impedes implementation of interventions	Medium	Principal Secretary – MOH	Robust fiduciary and/or pecuniary systems (e.g., financial controls, financial	Remedial action

Nature of the risk	Risk ID	Risk description	Impact	Severity	Owner	Mitigating action	Contingent action
					Programme Manager NMP County Malaria Coordinators – County Departments of Health	management capacity strengthening)	
Supply chain risks	R.005	Supply chain inefficiencies such as quality control inefficiencies (including specifications) Delayed decision making	Disruption of service delivery and sub-optimal programme implementation	High	Programme Manager – NMP KEMSA	Close monitoring of the PSM plan	Develop and implement a robust PSM plan
	R.007	Delays in procurement and supplies	Increase in malaria morbidity and mortality	High	PSM – NMP KEMSA Principal Secretary – MOH	Implementation and regular tracking of the PSM plan Min/max stock management at all levels	Redistribution of commodities at the county level.
Human resource for health risks	R.008	Inadequate staffing (numbers) and inadequate skilled staffing Human resource for health industrial actions	Disruption of service delivery (timeliness) Sub-optimal programme implementation (quality and quantity)	High	Principal Secretary – MOH County Chief Officer for Health – County Public Service Board	Institute and operationalise the human resource plans Regular capacity strengthening Retention of relevant skilled personnel	On-the-job capacity strengthening Institute human resource management procedures (task sharing, task shifting, reallocation)
	R.010	Staff turnover (attrition)	Disruption of service delivery (timeliness) Suboptimal programme implementation (quality and quantity)	High	Principal Secretary – MOH County Chief Officer for Health –	Institute and operationalise the Human Resource Plans Regular capacity strengthening Retention of relevant skilled	Institute human resource management procedures (task sharing, task shifting, reallocation) Motivation (monetary and non-monetary)

Nature of the risk	Risk ID	Risk description	Impact	Severity	Owner	Mitigating action	Contingent action
					County Public Service Board	personal Motivation (monetary and non-monetary)	
Biological risks	R.011	Drug and insecticide resistance	Resurgence, upsurges, and/or emergence of cases	High	NMP	Drug and insecticide resistance monitoring Vector surveillance research	Rotation of drugs and insecticide
Environmental risks	R.012	The emergence of new vectors and parasites	Resurgence, upsurges, and/or emergence of cases	High	NMP	Vector and parasite surveillance	Contain and add new tools to interrupt transmission
	R.013	Climate change-unpredictable climate variables that lead to vector proliferation	Potential for changes in vector behaviour leading to increased transmission, occurrence of new breeding habitats	High	NMP Environmental health unit and climate change focal point – MOH Ministry of Environment	Climate change mitigation or adaptability plan Cross-directorates' and county planning for mitigation Awareness creation Epidemic preparedness and response plan	Disaster management Resilience, public-private partnership
Disasters and humanitarian crises	R.014	Public health emergencies of international concern	Disruption of service delivery Increased mortality and morbidity	Medium	Emergency Operation Centre Manager	Multi-sectoral pandemic preparedness and response plan	Operationalise the multi-sectoral pandemic preparedness and response plan On-board key stakeholders for the emergency response Tailored contingency
Population migration	R.015	Population migration	Disrupt transmission patterns	Low	NMP	Cross-border collaborations	Tailored contingency

Nature of the risk	Risk ID	Risk description	Impact	Severity	Owner	Mitigating action	Contingent action
			Imported cases Disruption of service delivery Increased mortality, and morbidity				On-board key stakeholders for the emergency response
Insecurity	R.016	Banditry, crime, terrorism, political Instability	Impedes service delivery Impedes the implementation of interventions	Medium	Ministry of Interior Coordination of government National and county governments Other Nations	Prior identification of common insecurity hotspots Engagement of county security teams and national government administrative officers before and during the implementation of activities	Engagement of county security teams and national government administrative officers before and during the implementation of activities Some activities may be postponed to later dates if the insecurity situation escalates
Litigation and regulatory risks	R.018	Non-compliance Change in policy	Delay in registration of insecticides impedes service delivery (e.g., community case management of malaria).	Low	Pest Control Products Board NMP	Implement rigorous protocols to avoid legal issues related to treatment and intervention failures Coordination between the MOH legal unit, other Ministries and sectors, technical partners, parliamentarians, senators, county health committees, civil society organisations, and community members	Expedited registration of essential medicines and products Emergency use authorisation
Operational risks	R.019	Inefficient hierarchical system that delays processes	Delay in implementation of interventions and evidence generation	High	All partners and principal investigators	Early planning and system preparedness Improve systems and	Enforce adherence to clear service charter

Nature of the risk	Risk ID	Risk description	Impact	Severity	Owner	Mitigating action	Contingent action
			for policy and decision-making			processes by integrating technology	
	R.020	Counties, NMP, and MOH units working in silos in the implementation of KMS	Operational inefficiency, communication and coordination issues	High	NMP Counties	Foster a culture of open collaboration and integration within the NMP and MOH	Employ a multifaceted approach to empower staff and county ownership, including better communication channels, encouraging collaboration for improved programme performance
Communication risks	R.021	Misinformation and disinformation	Impedes service delivery and uptake of interventions	High	SBC focal point – NMP Partners	NMP listing contact information and physical address and an "About Us" on the MOH website and malaria information material Setting up social media, web monitoring, and alerting services for identifying and tracking fake news related to malaria	Engagement with intervention end users to ensure trust is established and maintained
Non-involvement of counties, partners, and other MOH sectors in KMS implementation	R.022	Marginalisation of regions or counties	Impacts on ownership of the KMS and its aspirations	Medium	NMP – MOH County Health Departments	Implementing comprehensive equity, gender equality, and human rights approaches for an inclusion approach to planning and implementation of prioritized interventions	Convening of ad hoc meetings to mainstream decisions for involvement in actions by the marginalised sectors/regions
	R.023	Non-inclusion of partners/stakeholders in implementation	Disjointed implementation and duplication of effort, including conflicts	High	NMP County Health Departments	Stakeholder mapping Deliberate inclusion of the partners in planning and decision-making processes	Develop a mechanism for the identification and inclusion of excluded partners

Nature of the risk	Risk ID	Risk description	Impact	Severity	Owner	Mitigating action	Contingent action
Inequities in representation	R.024	Non-involvement of communities/end-users in planning and implementation	Impacts the ownership and uptake of interventions and tools by households	High	NMP County Health Departments	Adopting a participatory approach in co-creation and utilisation of community scorecards Adopting a process of mandatory reporting of all constituency inclusion	Implementing interventional validation processes by relevant stakeholders and constituency participation
Community engagement risks	R.025	Inadequate community-centred approaches in implementation	Impacts community involvement, uptake of interventions, and ownership for sustainability	Medium	NMP County Health Departments Partners	Developing a culture of participatory co-creation and implementation with beneficiary communities in all activity processes from inception Implement comprehensive community engagement and education programs	Instituting interventional interventions, including community validation plans and activities

5.3 Cost of the KMS 2023—2027

This section describes in detail the level of resource requirements for the strategic plan period, the available resources, and the gap between what is anticipated and what is required.

The costing of the KMS 2023—2027 used a result-based approach to estimate the total financial resources needed to implement the strategy for the five fiscal years. The financial resources were estimated by costing all the activities (activity-based) necessary to achieve the expected outputs in each of the strategic objectives. The KMS implementation plan informed the activity-based costing, which uses a bottom-up input-based method indicating the cost of all inputs, up to sub-activity level, required to achieve the objectives.

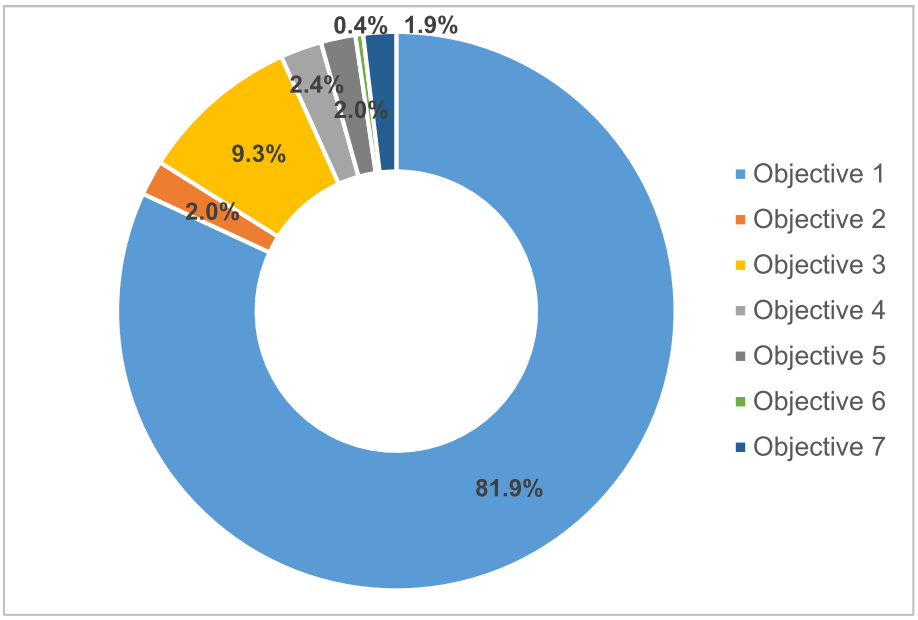
Resource requirements

The total resource need for the KMS 2023—2027 is KES 86.2 billion, as detailed in Table 7.

Table 7: Cost requirement by strategic objectives (KES millions)

Strategic objective	2023/24	2024/25	2025/26	2026/27	2027/28	Total
Objective 1. To ensure universal coverage of appropriate vector control interventions in all populations at risk of malaria	11,866.1	14,339.4	14,610.0	14,444.1	15,339.1	70,598.6
Objective 2. To ensure optimum coverage of malaria chemoprevention interventions and vaccines in eligible populations	324.6	326.1	342.4	364.0	386.9	1,744.0
Objective 3. To ensure malaria cases are managed according to the national diagnosis, treatment and prevention guidelines	1,763.6	1,388.7	1,423.9	2,227.4	1,239.0	8,042.7
Objective 4. To ensure optimal utilisation of malaria interventions	126.4	549.4	426.0	480.1	468.7	2,050.6
Objective 5. To strengthen malaria surveillance and generation of evidence for decision-making	169.4	702.9	362.3	236.8	239.3	1,710.7
Objective 6. To interrupt indigenous malaria transmission in four targeted counties by 2027/2028	56.9	97.0	95.1	67.1	66.9	382.9
Objective 7. To strengthen leadership, management, governance, sustainable financing, and commodity security for effective malaria programming at all levels	231.8	332.9	370.9	354.3	390.4	1,680.4
Total	**14,538.8**	**17,736.4**	**17,630.7**	**18,173.8**	**18,130.3**	**86,210.0**

Figure 9: Proportion of resource need per KMS objective



Malaria prevention interventions implemented under Objective 1 account for the highest percent of the resources needed (Figure 9). Table 8 shows the resources needed for each of the key strategies

Table 8: Resource requirements by strategies (KES millions)

Strategic objective	2023/24	2024/25	2025/26	2026/27	2027/28	Total
Objective 1. To ensure universal coverage of appropriate vector control interventions in all populations at risk of malaria	**11,866.1**	**14,339.4**	**14,610.0**	**14,444.1**	**15,339.1**	**70,598.6**
Strategy 1.1 LLIN distribution as per the updated stratification maps	487.6	2,046.9	1,586.2	585.7	622.6	5,329.1
Strategy 1.2 Indoor residual spraying	10,631.0	11,272.0	11,982.1	12,737.0	13,539.4	60,161.6
Strategy 1.3 Larval source management	95.1	379.4	403.3	428.7	455.8	1,762.3
Strategy 1.4 Adopt new appropriate interventions or technologies	422.5	466.0	483.6	528.2	546.5	2,446.8
Strategy 1.5 Review and update vector control guidelines	76.3	11.3	-	-	-	87.5
Strategy 1.6 Strengthen malaria surveillance for generation of vector bionomics, and insecticide resistance profiles	118.0	125.4	133.3	141.7	150.6	668.9
Strategy 1.7 Optimise entomological data capture and use for decision-making	35.7	38.4	21.4	22.7	24.1	142.4
Strategy 1.8 Strengthen the generation of data on the efficacy and effectiveness of vector control tools and technologies	-	-	-	-	-	-
Objective 2. To ensure optimum coverage of malaria chemoprevention interventions and vaccines in eligible populations	**324.6**	**326.1**	**342.4**	**364.0**	**386.9**	**1,744.0**
Strategy 2.1 Ensure at least 80 percent of all eligible pregnant women at risk receive IPTp	54.7	49.0	47.8	50.8	54.0	256.4
Strategy 2.2 Adoption of other relevant chemoprevention strategies	256.2	262.5	279.0	296.6	315.3	1,409.6
Strategy 2.3 Ensure all populations eligible for the malaria vaccine are covered	5.2	5.5	5.8	6.2	6.6	29.3
Strategy 2.4 Develop innovative solutions and strategies to address gender and equity barriers in the implementation of malaria chemoprevention	8.6	9.1	9.7	10.3	11.0	48.7
Objective 3. To ensure malaria cases are managed according to the national diagnosis, treatment, and prevention guidelines	**1,763.6**	**1,388.7**	**1,423.9**	**2,227.4**	**1,239.0**	**8,042.7**
Strategy 3.1 Ensure 100 percent of confirmed malaria cases receive appropriate treatment	1,557.7	1,133.6	1,165.3	1,879.6	1,239.0	6,975.2

Strategic objective	2023/24	2024/25	2025/26	2026/27	2027/28	Total
	189.5	201.4	214.1	227.6	0.0	832.7[3]
Strategy 3.2 Ensure 100 percent of suspected malaria cases receive quality-assured parasitological diagnosis at all levels of care	16.5	42.0	44.1	120.1	-	222.7
Strategy 3.3 Ensure at least 50 percent of private sector facilities adhere to national malaria diagnosis, treatment, and prevention guidelines	-	11.7	0.4	0.1	-	12.1
Objective 4. To ensure optimal utilisation of malaria interventions	**126.4**	**549.4**	**426.0**	**480.1**	**468.7**	**2,050.6**
Strategy 4.1 Advocate at all levels for increased investments and utilisation of malaria interventions	24.3	27.2	28.9	30.8	31.1	142.3
Strategy 4.2 Enhance awareness and utilisation of malaria interventions through comprehensive, multichannelled evidence-based SBC approaches	100.8	360.6	392.0	405.8	412.7	1,671.9
Strategy 4.3 Strengthen the structure for coordination and delivery of malaria SBC interventions at all levels	1.2	148.1	2.2	2.3	2.0	155.8
Strategy 4.4 Implement evidence-based SBC approaches for removing gender, equity, and human rights barriers in the utilisation of malaria interventions	-	13.6	2.9	41.3	22.9	80.6
Objective 5 To strengthen malaria surveillance and generation of evidence for decision-making	**169.4**	**702.9**	**362.3**	**236.8**	**239.3**	**1,710.7**
Strategy 5.1 Strengthen reporting of routine malaria data	24.8	222.0	42.1	44.7	47.5	381.1
Strategy 5.2 Improve the quality of routine malaria data from 76 percent to 90 percent in all counties by 2027/28	80.3	111.9	104.1	126.5	109.9	532.6
Strategy 5.3 Ensure optimal and timely epidemic monitoring for a prompt and informed response	-	13.1	13.9	14.8	15.7	57.6
Strategy 5.4 Conduct periodic assessments and population surveys to inform programmatic decisions	-	285.0	143.8	-	-	428.8
Strategy 5.5 Strengthen dissemination and use of malaria data-backed information products	53.0	55.1	39.1	41.5	44.1	232.8
Strategy 5.6 Track and disseminate malaria operational research findings for programming	11.3	15.8	19.5	9.3	22.0	77.8
Objective 6 To interrupt indigenous malaria transmission in four targeted counties by 2027/2028	**56.9**	**97.0**	**95.1**	**67.1**	**66.9**	**382.9**

[3] The KES 823.7 is cost related to proposed strategy to guarantee equitable availability of vital malaria medicines. Refer to the costing template for additional details.

Strategic objective	2023/24	2024/25	2025/26	2026/27	2027/28	Total
Strategy 6.1 Strengthen programme capacity for malaria elimination at all levels	13.3	27.5	38.2	6.5	7.0	92.5
Strategy 6.2 Operationalize case-based surveillance and response in targeted counties	7.3	16.4	10.0	10.6	6.9	51.2
Strategy 6.3 Promote risk communication and community engagement and foster multi-sectoral collaboration	36.3	53.1	46.9	49.9	53.0	239.3
Objective 7 To strengthen leadership, management, governance, sustainable financing, and commodity security for effective malaria programming at all levels	**231.8**	**332.9**	**370.9**	**354.3**	**390.4**	**1,680.4**
Strategy 7.1 Strengthen leadership and governance structures at all levels for the delivery of the strategy	18.5	62.1	59.6	60.4	64.2	264.8
Strategy 7.2 Ensure 100 percent availability of appropriate malaria commodities through effective supply chain management at levels	55.2	37.1	39.5	42.0	44.6	218.3
Strategy 7.3 Secure at least 80 percent of the required funding for the costed KMS through diversified resource mobilisation initiatives	45.5	58.8	57.6	64.5	65.1	291.5
Strategy 7.4 Strengthen stakeholder collaboration and coordination for improved malaria programming	32.7	48.9	36.9	39.3	41.0	198.8
Strategy 7.5 Achieve at least 80 percent of malaria programme performance	80.0	119.6	173.8	147.0	167.1	687.5
Strategy 7.6 Strengthen resilience and climate change adaptability for malaria programming	-	6.4	3.4	1.2	8.4	19.5
Total	**14,538.8**	**17,736.4**	**17,630.7**	**18,173.8**	**18,130.3**	**86,210.0**

5.4 Resource availability and funding gap

The projected available funds based on the funding levels of the government and the development partners is KES 41.7 billion over the five years (Table 9). The Kenyan government allocates resources through its national and county health budgets. The Global Fund and PMI provide substantial financial and technical assistance to help implement large-scale malaria prevention and treatment efforts across the country. WHO provides technical leadership on malaria policy, strategic direction, and standards and normative guidance. The private sector and philanthropic organisations like the Bill and Melinda Gates Foundation support research, innovation, and community-based malaria control initiatives. The estimation of the available resources assumes that funding from these sources will remain fairly stable based on the current funding levels and commitments.

Table 10 provides the funding gap based on the expected total cost of the KMS 2023—2027 (Table 8) and the breakdown of the available resources (Table 9). The NMP requires KES 44.5 billion to bridge the financing gap for the implementation of the KMS 2023-2027.

Table 9: Estimated financial resources available by source (KES millions)

Source	2023/24	2024/25	2025/26	2026/27	2027/28	Total
Government	1,353.6	1,504.0	1,654.4	1,819.9	2,001.8	**8,333.7**
Development Partners	5,113.5	5,387.0	6,387.5	10,086.3	6,387.5	**33,361.8**
Total Available	**6,467.1**	**6,891.0**	**8,041.9**	**11,906.2**	**8,389.3**	**41,695.5**

Table 10: Financial gap for the KMS 2023—2027 (KES millions)

Item	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	Total
Total requirement	14,538.8	17,736.4	17,630.7	18,173.8	18,130.3	**86,210.0**
Project available resources	6,467.1	6,891.0	8,041.9	11,906.2	8,389.3	**41,695.5**
Funding Gap	**8,071.7**	**10,845.4**	**9,588.8.4**	**6,267.6**	**9,741.0**	**44,514.5**

Malaria financing in Kenya

The Government of Kenya allocates resources to combat malaria through its national and county health budgets, particularly in high-risk regions. The development partners through the Global Fund and PMI are the major contributors providing substantial financial and technical assistance. The private sector and nongovernmental organisations such as the Bill & Melinda Gates Foundation support research, innovation, and community-based malaria control initiatives. Kenya is exploring innovative financing mechanisms, including public-private partnerships, to enhance malaria funding. These partnerships combine public resources with private sector expertise to improve the distribution of malaria prevention tools and healthcare services. Innovative mechanisms like social impact bonds are also being considered to attract private investment into malaria programs.

Community involvement is crucial in Kenya's malaria strategy. Local fundraising, volunteer work, and microfinance initiatives help support malaria control efforts at the grassroots level. Community health promoters play a key role in educating the public, promoting prevention, and ensuring prompt access to treatment.

Strategies to ensure available resources are sustained

Sustainable financing remains a challenge for Kenya, requiring continuous resource mobilisation and effective allocation. To sustain resources for malaria control in Kenya, it will be crucial to enhance domestic resource mobilisation. This includes advocating for increased government budget allocations to malaria within both national and county budgets, ensuring that the disease remains a priority in health sector funding. Additionally, integrating malaria interventions into national health insurance schemes like the Social Health Insurance Fund can help cover costs and reduce the financial burden on government spending. Strengthening public-private partnerships by engaging the private sector can bring additional funding through corporate social responsibility initiatives and philanthropic contributions. Innovative financing mechanisms, such as social impact bonds and malaria bonds, offer new avenues for sustaining malaria funding. These mechanisms allow private investors to fund malaria control initiatives upfront, with returns tied to the success of the respective programs.

Strengthening accountability and transparency mechanisms remains essential in ensuring funds are used efficiently. Optimizing resource use is essential for sustaining malaria control efforts. This includes focusing on cost-effective interventions like use of LLINs and IRS while improving supply chain efficiency to minimize waste and ensure the timely availability of malaria commodities. Changes in climate may alter malaria transmission patterns, and Kenya's financing strategies will then need to adapt, requiring additional resources for research and innovative interventions.

Sustained advocacy and political commitment are vital for long-term malaria control. Continuous engagement with political leaders at both national and county levels is needed to keep the topic of malaria high on the policy agenda and to ensure consistent funding and policy stability. Additionally, mobilizing communities to support malaria interventions can generate public pressure on local leaders to maintain or increase funding.

Regularly publishing financial and programmatic reports builds trust among donors, government agencies, and the public, encouraging continued investment. Effective monitoring and evaluation systems are necessary to track the success of malaria interventions, demonstrating tangible results that justify ongoing resource allocation and, ultimately, attracting further funding.

Strategies to ensure efficiency in resource utilisation

Implementation of targeted interventions are essential for maximizing impact. Data-driven decision-making ensures that interventions are directed where they are needed most. In addition, adopting cost-effective approaches and scaling up proven interventions like use of LLINs and IRS provides significant benefits to the health system.

Integrating malaria control activities with other health programs, such as maternal and child health services, helps to reduce operational costs by leveraging shared resources.

Capacity-building through regular training of healthcare workers ensures they are well-equipped to manage resources and implement best practices. Strengthening the role of CHPs helps deliver services efficiently at the grassroots level.

To ensure efficiency in resource utilisation, strengthening supply chain management is crucial. This involves optimizing distribution networks for malaria commodities and implementing robust inventory management systems to track stock levels in real time, prevent stock-outs, and reduce wastage.

Promoting community involvement is key to efficient resource use. Engaging communities in malaria control efforts and investing in behaviour change communication campaigns help ensure that interventions are well-received, and resources are used effectively. Informed communities contribute to better outcomes and efficient use of available resources.

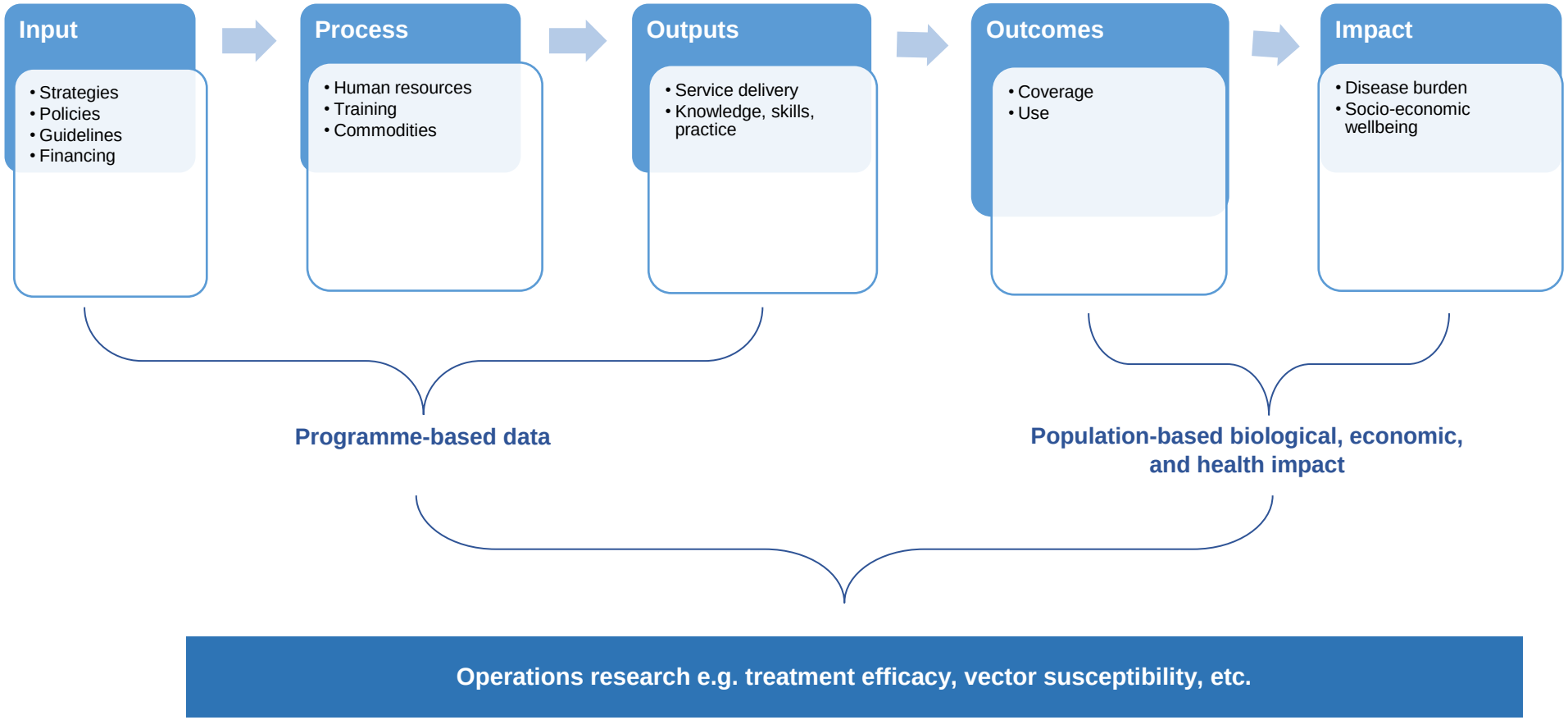
Robust monitoring and evaluation (M&E) systems are necessary to track programme performance and outcomes. Regular assessments identify inefficiencies and allow for timely adjustments. Transparent reporting and accountability measures, including audits and public records, build trust and ensure resources are used as intended.

KMS 2023–2027 Monitoring and Evaluation

This section provides a comprehensive framework that will ensure regular and effective monitoring of the performance of the malaria program; facilitate use of relevant information for decision-making; enhance effective use of resources through coordination of M&E efforts; and allow comparability of results through standardization of data collection, survey methods, and indicator measurement.

Development of this framework was informed by the KMS implementation plan, which details the strategies and key activities that will be implemented under each strategic objective. The Kenya malaria programme has adopted the basic M&E framework connecting programme inputs to processes, outputs, outcomes, and to the ultimate impact (Figure 10).

Figure 10. The basic framework adopted for M&E of KMS 2023—2027



A detailed M&E performance framework was developed that defines the impact, outcome, process, output, and input level indicators that would guide the overall monitoring and evaluation of the KMS 2023—2027 (Annex 2). The performance framework highlights the specific indicators, their data sources, frequency of data collection, and responsible entities for availing each indicator's data.

The evaluation plan includes mid-term and end-term reviews of KMS 2023—2027 which will be conducted to evaluate achievements and determine impediments to attainment of the programme goals and objectives, including identification of lessons learned. In line with WHO guidance, the end-term review will be conducted in 2027, and recommendations of the evaluation will inform the next strategy.

6.1 Performance framework

In addition to the detailed performance framework, targets were set for the impact indicators that measure achievement of the KMS goal and for key outcome indicators under each objective (Table 11). Definition of the indicators is provided in Annex 3.

Table 11: Targets for the impact and key outcome indicators

Indicators	Data source	Frequency	Responsible	Baseline		Targets 2023-2027				
				Year (Source)	Data	2023/24	2024/25	2025/26	2026/27	2027/28
Goals **1. To reduce malaria incidence by at least 80 percent and deaths by at least 90 percent of the 2023 levels by 2027/28** **2. To interrupt indigenous malaria transmission in selected counties by 2027/2028**										
Total confirmed malaria cases (per 1,000 persons per year)	Routine surveillance	Annually	NMP, Counties	2023	105	73.8	58.0	42.2	31.6	21.1
Total malaria deaths (per 100,000 persons per year)	Routine surveillance	Annually	NMP, Counties, Civil Registration and Vital Statistics	2023	1.08	1	0.75	0.5	0.25	0.1
Number of counties with zero indigenous malaria cases	Case-based surveillance	Annually	NMP, Counties	No data	No data	-	-	1	1	2
Objective 1: To ensure universal coverage of appropriate vector control interventions in all populations at risk of malaria										
Proportion of households with universal coverage of LLINs in malaria risk areas	PMLLIN, KMIS	6 months after mass net campaign, every three years	NMP, Counties, and Partners	2022 (PMLLIN)	48%	80%	70%	60%	80%	70%
Proportion of population in targeted areas protected through IRS within the last 12 months	IRS campaign activity reports	Annually	NMP, Counties, and Partners	2023 (Activity report)	79%	82%	85%	85%	85%	85%
Percent reduction in larval density in habitats targeted for LSM	Entomological surveillance	Quarterly	NMP, Counties, and Partners	2023	95%	95%	95%	95%	95%	95%
Annual entomological inoculation rate	Entomological surveillance	Annually	NMP, Counties, and Partners	2023	1.1	1.1	0.6	0.3	0.14	0.07

Indicators	Data source	Frequency	Responsible	Baseline		Targets 2023-2027				
				Year (Source)	Data	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28
Objective 2: To ensure optimum coverage of malaria chemoprevention interventions and vaccines in eligible populations										
Proportion of eligible pregnant women in targeted counties who received three or more doses of IPTp during their last pregnancy	Household surveys	2—3 years	NMP, KNBS	2023 (KHIS)	48%	54%	61%	67%	74%	80%
Confirmed malaria cases as a percentage of total outpatient attendance among children under-five in areas where Seasonal Malaria Chemoprevention (SMC) has been implemented	Routine Surveillance, SMC activity reports	Annually	NMP, Counties	2023 (KHIS)	10%	9%	8%	7%	6%	5%
Proportion of the eligible population vaccinated with fourth dose of malaria vaccine	National vaccine programme reports	Annually	NMP, National Vaccine Program	2023 (NVIP)	74%	79%	84%	90%	95%	100 %
Objective 3: To ensure all malaria cases are managed according to the national diagnosis, treatment, and prevention guidelines										
Proportion of suspected malaria cases presenting to public health facilities managed in accordance with the Kenya malaria treatment guidelines	Health facility assessment reports	Annually	NMP	2023 (KHIS)	89%	100 %	100 %	100 %	100 %	100 %
Proportion of suspected malaria cases presenting to private facilities managed in accordance with the Kenya malaria treatment guidelines	Health facility assessment reports	Annually	NMP	No data	No data	100 %	100 %	100 %	100 %	100 %
Proportion of suspected malaria cases presenting to public health facilities tested with mRDT or microscopy	Routine surveillance	Monthly	NMP, Counties	2023 (KHIS)	89%	100 %	100 %	100 %	100 %	100 %

Indicators	Data source	Frequency	Responsible	Baseline		Targets 2023-2027				
				Year (Source)	Data	2023/24	2024/25	2025/26	2026/27	2027/28
Proportion of suspected malaria cases presenting to private facilities tested with mRDT or microscopy	Routine surveillance	Monthly	NMP, Counties	No data	No data	100 %	100 %	100 %	100 %	100 %
Proportion of suspected malaria cases presenting to CHPs in targeted areas tested with mRDT	Routine surveillance	Monthly	NMP, Counties	2023 (KHIS)	83%	100 %	100 %	100 %	100 %	100 %
Proportion of parasitologically confirmed malaria cases presenting to public facilities who received artemisinin-based combination therapy	Routine surveillance	Monthly	NMP, Counties	2023 (KHIS)	91%	100 %	100 %	100 %	100 %	100 %
Proportion of parasitologically confirmed cases presenting to targeted private facilities who received artemisinin-based combination therapy	Routine surveillance	Monthly	NMP, Counties	2023 (KHIS)	85%	100 %	100 %	100 %	100 %	100 %
Proportion of parasitologically confirmed cases presenting to CHPs who received artemisinin-based combination therapy	Routine surveillance	Monthly	NMP, Counties	2023 (KHIS)	97%	100 %	100 %	100 %	100 %	100 %
Malaria case fatality rate	Routine surveillance	Quarterly	NMP, Counties	2022	0.7%	0.57 %	0.45 %	0.32 %	0.19 %	0.07 %
Proportion of laboratories performing malaria microscopy enrolled in external quality assurance program	Activity reports	Biannually	National Public Health Laboratory	2023	33%	57%	71%	86%	100 %	100 %
Objective 4: To ensure optimal utilisation of malaria interventions										

Indicators	Data source	Frequency	Responsible	Baseline		Targets 2023-2027				
				Year (Source)	Data	2023/24	2024/25	2025/26	2026/27	2027/28
Proportion of the population in malaria risk areas who slept under an LLIN the night before the survey	KMIS, MBS, KDHS, PMLLIN	Every five years	KNBS, NMP	2022 (PMLLIN)	80%	81%	82%	83%	84%	85%
Proportion of population using LLIN among households with universal coverage	KMIS, MBS, KDHS, and PMLLIN	Every five years	KNBS, NMP	2022 (PMLLIN)	97%	96%	97%	98%	99%	100 %
Proportion of children under-five with fever in the last two weeks for whom advice or treatment was sought within 24 hours	KMIS, MBS, KDHS, and PMLLIN	Every five years	KNBS, NMP	2022 (KDHS)	70%	72%	75%	78%	82%	85%
Proportion of the population with comprehensive knowledge about malaria	KMIS, MBS	Every five years	KNBS, NMP	2022 (MBS)	44%	50%	60%	70%	80%	85%
Objective 5: To strengthen malaria surveillance and generation of evidence for decision-making										
Proportion of expected health facility reports received on time	Routine surveillance	Monthly	NMP, Counties	2023 (KHIS)	97%	95%	95%	95%	95%	95%
Proportion of health facilities reporting quality malaria data (threshold greater than 90 percent and less than 110 percent)	Routine malaria data quality assessment reports	Annually	NMP, Counties	Malaria DQA report	No data	90%	90%	90%	90%	90%
Objective 6. To interrupt indigenous malaria transmission in four targeted counties by 2027/2028										
Proportion of confirmed malaria cases notified within 24 hours	Case-based surveillance	Quarterly	NMP, Counties	No data	No data	-	10%	25%	75%	100 %

Indicators	Data source	Frequency	Responsible	Baseline		Targets 2023-2027				
				Year (Source)	Data	2023/24	2024/25	2025/26	2026/27	2027/28
Proportion of malaria cases investigated within 72 hours		Quarterly	NMP, Counties	No data	No data	-	10%	25%	75%	100 %
Proportion of malaria foci responded to within seven days		Quarterly	NMP, Counties	No data	No data	-	10%	25%	50%	75%
Proportion of health workers in the target counties with adequate knowledge on malaria elimination (KAP Score > 80%)	Malaria elimination readiness assessment reports	Every three years	NMP, Counties	No data	No data	-	-	-	-	80%
Objective 7: To strengthen leadership, management, governance, sustainable financing and commodity security for effective malaria programming at all levels										
NMP Organizational Capacity Assessment (OCA) score	OCA reports	Biennial (every two years)	NMP	No data	No data				75%	
Proportion of established positions filled with appropriate staff, disaggregated by sex	Human resource reports	Annually	NMP, Counties	No data	No data	100 %	100 %	100 %	100 %	100 %
Proportion of activities in the annual malaria workplan implemented as planned	Programme review reports	Annually	NMP, Counties	2023 (Programme report)	76%	100 %	100 %	100 %	100 %	100 %
Proportion of GER mainstreaming activities implemented	Programme review reports	Annually	NMP, Counties	No data	No data	100 %	100 %	100 %	100 %	100 %

Indicators	Data source	Frequency	Responsible	Baseline		Targets 2023-2027				
				Year (Source)	Data	2023/24	2024/25	2025/26	2026/27	2027/28
Proportion of funding mobilised to KMS costed need, disaggregated by source	Programme reports	Annually	NMP, Partners, and Counties	2022 (Programme report)	80%	80%	80%	85%	90%	90%
Proportion of public health facilities reporting stock-out at the end of the month of key malaria commodities										
All Artemether-Lumefantrine (AL)	Routine surveillance	Monthly	NMP, Counties	2023 (KHIS)	28%	0%	0%	0%	0%	0%
Injectable artesunate					64%	0%	0%	0%	0%	0%
Sulfadoxine-Pyrimethamine tabs					22%	0%	0%	0%	0%	0%
mRDTs					37%	0%	0%	0%	0%	0%
LLINs					26%	0%	0%	0%	0%	0%
Proportion of key malaria commodities forecasted within ±25 percent forecast error (composite of eight items: AL—all sizes, injectable artesunate, mRDTs, Sulfadoxine-Pyrimethamine, LLINs)	Malaria pipeline monitor, routine surveillance	Monthly	NMP, Counties	2023 (malaria pipeline monitor)	100%	100 %	100 %	100 %	100 %	100 %

6.2 Data management systems

The M&E performance framework lists the various data sources that will be used to measure progress of the indicators. Routine epidemiological surveillance will be done primarily through the KHIS while programme monitoring will be conducted to track changes in programme performance over time. Periodic epidemiological surveillance will include household surveys that are used to measure population-based coverage and examine changes in desired health outcomes and impact. Additionally, health facility surveys and special assessments will be done to evaluate questions related to quality of malaria case management, assessment of malaria diagnosis, and supply chain management. Genomic surveillance will be done to monitor the emergence of molecular markers of drug resistance, or the emergence and spread of relevant molecular markers, such as HRP2 gene deletions.

Routine entomologic surveillance

Entomological surveillance will be carried out through sentinel surveillance for malaria vectors and the periodic monitoring of the efficacy of vector control tools. Sentinel surveillance will encompass routine entomological observations of changes in vector species, density and composition, behaviour, susceptibility to insecticides, and trends in malaria transmission. Periodic surveillance will be done for insecticide resistance-monitoring and LLIN durability studies.

The malaria programme has strong collaborative research networks that bring together researchers, health practitioners, policymakers, and other stakeholders to support implementation of identified research studies to inform appropriate interventions and policy.

This section summarizes the data systems that will be used to collect and manage the requisite epidemiological and entomological malaria data. A detailed description of the data systems is provided in the Kenya malaria surveillance guideline (DNMP, 2022).

Routine epidemiologic surveillance

Health facility-level and community-level malaria epidemiological data are routinely reported through the integrated web-based KHIS. The following categories of data will be obtained through the KHIS:

a. Outpatient service delivery data

Information of patients seeking treatment at the outpatient departments are recorded in paper-based primary registers daily, and summarised into the facility reporting tools on a monthly basis. The monthly reports are then submitted to the sub-county office for uploading into the KHIS. Some health facilities have health records officers who submit these data directly to the KHIS, while some level 5 and 6 health facilities capture the data in EMR. In all cases, the reporting structures are under the authority of MOH, and it is expected that health service providers, both public and private, provide the defined health information data through the KHIS.

b. Inpatient service delivery data

Routine inpatient morbidity and mortality data are captured in event reports of the KHIS tracker. The data entry of events is captured in case-based event forms from the patient case notes, discharge summary forms, or death notification forms. The events are categorised based on International Classification of Diseases (ICD) version 11.

c. Malaria data from the community level

Paper-based community data are collected by the CHPs at the household level, and are then collated by CHAs at the health facility level and reported into KHIS. In 2023 the MOH deployed an electronic community health information system to transition from manual to digital reporting of community health services. Integration of the community health system into KHIS is ongoing. The CHAs are in charge of community health units and charged with ensuring that quality community-level data are available at the unit's link health facilities for further collation into the KHIS.

d. Weekly reporting for epidemic preparedness and response

Malaria is one of the notifiable diseases under the Integrated Disease Surveillance and Response (IDSR) system in Kenya. The IDSR strategy integrates surveillance, laboratory, and response activities at all levels using standard case definitions for detection. In the case of malaria, this notification is done on a weekly basis by compiling the data reported at the outpatient department (suspected cases of malaria, tested cases, malaria-positive cases), as well as the inpatient data on malaria-related deaths.

Kenya implements a malaria epidemic monitoring app in KHIS that enables automatic tracking of malaria upsurges and outbreaks in the 128 epidemic-prone sub-counties, providing the necessary alerts for prompt action.

e. Malaria commodity data

Malaria commodity reporting includes health facility and community data such as stock on hand, stock received, stock issued out, stock dispensed to user or consumption, losses, and expiries. This includes data for all malaria commodities used for prevention, diagnosis, and treatment. The data are submitted monthly into KHIS and are aggregated, analysed, and presented through a health commodities dashboard embedded in the KHIS.

f. EMR

There are different types of EMR being implemented at mainly level 5 and 6 hospitals across the country. For EMR that are not disease specific, malaria patient and commodity data are captured at the outpatient, inpatient, laboratory, and pharmacy departments. However, most EMR are generally not configured to collect all the essential data elements for malaria surveillance, and health workers using these EMR still resort to manual records to document and report malaria data into the KHIS.

g. Case-based surveillance

Active and passive case-based surveillance are planned to be implemented in malaria elimination settings in a system that will be integrated into the KHIS. Passive surveillance will involve the collection of case-based malaria data from persons who seek care voluntarily in health facilities or community health units. Active surveillance will include reactive case detection in certain households or populations in response to index cases detected at the health facilities. It will also include proactive case detection, whereby deliberate case search and collection of case-based malaria data in targeted households and populations classified as high risk for malaria will be done.

Monitoring malaria prevention interventions

a. Indoor residual spraying

During spray campaigns, standard forms are used by spray operators to collect daily IRS-specific data at the household. The data collected includes name and gender of the household head; date of spraying; geographical data; population protected by IRS segregated by gender, children under-five, and pregnant women; whether the house is sprayed or not; reason for non-spray; and availability and usage of nets. These data are collected using a mobile phone application and submitted to the IRS database. The reports are then generated from the database for the different levels majorly focusing on spray coverage and spray progress, as well as proportion of population protected. NMP provides oversight of the IRS activities and assessments. In addition to compiling reports on the implementation process, a pre- and post-spray assessment of facilities used for environmental compliance and entomological indices is undertaken.

b. LLINs distribution

Kenya has adopted use of a digital platform (DigimalKE) for mass net campaigns. Tools designed for the mass distribution are reviewed before each campaign. The data on household registration and issuance of LLINs are available in DigimalKE. Routine distribution of LLINs through ANC and child welfare clinics is captured using the harmonized HIS tools reported through KHIS. Outcome indicators are assessed using the KMIS and other related surveys.

Community and facility-based surveys

Several periodic assessments and population-based surveys will be undertaken during the KMS 2023—2027 to inform programmatic decision making. The community surveys are conducted in collaboration with the Kenya National Bureau of Statistics (KNBS), a government agency mandated with collecting, analyzing, storing, and disseminating the country's statistical data. The malaria programme will conduct or participate in the following surveys:

a. KDHS

This is a nationally representative household survey that provides data for a wide range of monitoring and impact evaluation indicators in the areas of population, health, and nutrition. It is carried out every five years. The malaria program participates in the execution of the survey, and mobilizes resources for the malaria module in KDHS.

b. KMIS

Conducted every three to five years, the KMIS collects data on all of the internationally recognized malaria indicators, including household ownership of LLINs and their use, especially by children under-five years of age and pregnant women; IPTp; and malaria parasite prevalence at the population level. Kenya will use the survey to collect information on molecular markers to assess emergence of anti-malarial drug resistance, reduced mRDTs efficacy among other relevant indicators.

c. PMLLIN survey

The PMLLIN survey is carried out six months after a mass net distribution campaign and takes place every three years to evaluate the processes and outcomes of the mass net campaign.

d. Knowledge, attitude, and practices survey

This is a population-based cross-sectional survey carried out on an ad hoc basis and intended to inform malaria SBC programmes. It measures several social science indicators about malaria prevention and care-seeking behaviours. The most recent malaria behavioural survey was carried out in 2022.

e. Malaria health facility assessment

The malaria health facility assessment is carried out at Kenya's health facilities to establish the latest performance levels in terms of system readiness and adherence to national guidelines. It also informs the malaria programme about health

workers' perceptions of usefulness and impact of malaria trainings, and future training needs within the broader domains of malaria control. This assessment will be carried out on an annual basis in the public and FBO sector. In the private sector, it will be conducted once during the period of the KMS 2023—2027. Quality of care will also be monitored through periodic data reviews.

f. Quality control and quality assurance of diagnostic methods

In collaboration with Pharmacy and Poisons Board (PPB), NMP will undertake post-market surveillance of mRDTs to ensure the quality of kits is acceptable. The kits will be sampled and tested against known standards at the National Quality Control Laboratory. At the health facility level, confirmation of mRDT test results will be done by laboratories that have the capacity to undertake expert microscopy. Quality assurance for mRDTs will also be done at the community level. In addition, a country-wide external competency assessment of malaria microscopists will be conducted for quality assurance once during the strategy period.

g. Quality control and quality assurance of medicines

The National Quality Control Laboratory tests pre-market batches of malaria medicines entering the public sector. Post-marketing surveillance for drug quality assurance is typically a regulatory activity undertaken by Kenya's national medicines regulator, the Pharmacy and Poisons Board. The malaria programme will continue to collaborate with PPB in post-market surveillance of malaria medicines.

h. Drug efficacy and resistance studies

During the life of KMS 2023—2027, therapeutic efficacy studies (TES) will continue to be conducted once every two years at selected sites in Kenya. TES are prospective evaluations of patients' clinical and parasitological responses to directly observed treatment for uncomplicated malaria. Surveillance of antimalarial drug efficacy and drug resistance will be complemented by surveillance of antimalarial drug quality.

i. Malaria chemoprevention studies

Seasonal malaria chemoprevention and post-discharge malaria chemoprevention intervention will be implemented among the target population. The malaria programme will provide technical oversight on pilot studies to develop appropriate service delivery platforms for the interventions.

j. Entomological surveys and monitoring of insecticides resistance

In collaboration with the Vector-Borne Disease Unit and various research institutions, the NMP will continue to undertake surveillance of vector bionomics in selected sentinel sites. The entomological surveys will be conducted quarterly to establish malaria vector distribution, vector abundance, behaviour, sporozoite rate, and entomological inoculation rate. The malaria programme will also conduct annual monitoring of vector susceptibility to insecticides at selected sentinel sites in the counties implementing vector control with either LLINs or IRS. Special studies will be conducted to measure the efficacy of vector control tools against epidemiological endpoints

Surveillance of vector bionomics will be strengthened through development of an entomology database, acquisition of appropriate tools, and capacity building in entomological surveillance at all levels. The entomological data will be reviewed biannually to allow monitoring for markers of transmission. Entomology profile maps for selected sub-counties will also be developed

k. Monitoring efficacy and effectiveness of vector control interventions

Special studies will be conducted to monitor efficacy and effectiveness of LLINs, IRS, and LSM. The studies will provide evidence to support use of new vector control tools and technologies.

l. *Entomological surveillance in malaria elimination counties*

Baseline entomological surveillance will be done in the four counties targeted for malaria elimination. This will enable the generation of malaria vector distribution maps and their indices. Thereafter, annual entomological surveillance will be done in three sub-counties of each of these four counties. Annual cross-county surveillance review meetings will also be held.

m. Longitudinal surveillance of mRDT HRP2 gene deletion

Prospective surveys of mRDT kits to determine the status of their diagnostic performance will be undertaken. HRP2 gene deletion surveys will be done once every two years.

n. Pharmacovigilance – adverse drug reaction monitoring

Pharmacovigilance is the responsibility of the Pharmacy and Poisons Board, which regulates pharmaceutical products and services and ensures their quality, safety, and efficacy. Reporting of adverse drug reactions can be done through either spontaneous or active reporting. Spontaneous reporting is done using the suspected adverse drug reaction reporting form (yellow forms). Reporting to PPB or the nearest health authorities can be done on paper or online via the PPB website. Data on spontaneous reporting is stored on an international WHO database called VIGIBASE that allows both national and international analysis of potential signals of untoward events of interest.

Active reporting is designed as a cohort event monitoring study that typically targets adverse drug reactions of interest or medicines of public health importance. The cohort event monitoring data is stored on CEMFLOW, an international database that enables confirmation of association between adverse events and the drugs in question. The malaria programme will support PPB in pharmacovigilance of malaria commodities.

Operational research and translation of research findings to policy

During the strategy period, the malaria programme will continue to support the regular meetings of the malaria operational research COE. In addition, the programme will create and maintain a database of malaria research studies, as well as an integrated malaria data repository. The NMP will facilitate a biennial national research-to-policy conference.

Programme monitoring and evaluation

The malaria programme will facilitate annual planning and review meetings with partners and other stakeholders. This will provide a forum for development of annual work plans; a review of the progress in the implementation against targets in previous work plans; and the sharing of other relevant information on implementation of malaria activities. The programme will also facilitate annual planning and review meetings with the counties, and track progress in implementation of malaria activities at the county level.

To evaluate achievements in implementation of the KMS 2023–2027, a mid-term review of is scheduled for FY 2025/2026. The final evaluation of the strategy will be done in FY 2027/2028.

6.3 M&E implementation and coordination mechanisms

The national malaria programme's surveillance, monitoring, and evaluation (SME) unit will coordinate the M&E function for the KMS 2023—2027. The unit is responsible for the data collation, management, and analysis; surveillance; operational research; documentation and dissemination of information; and overall coordination of the programme M&E activities.

Capacity for M&E implementation

The SME unit is adequately staffed with skilled personnel to undertake these functions. The current staff consists of an epidemiologist, a health records and information officer, a medical statistician, a data manager, and an entomologist. The unit benefits from technical support from a wide range of stakeholders including government, academia, research institutions, non-governmental organisations, and development partners. Representatives of these stakeholders constitute the SME COE, which has clearly documented terms of reference that include provision of technical leadership, oversight, and coordination of SME activities.

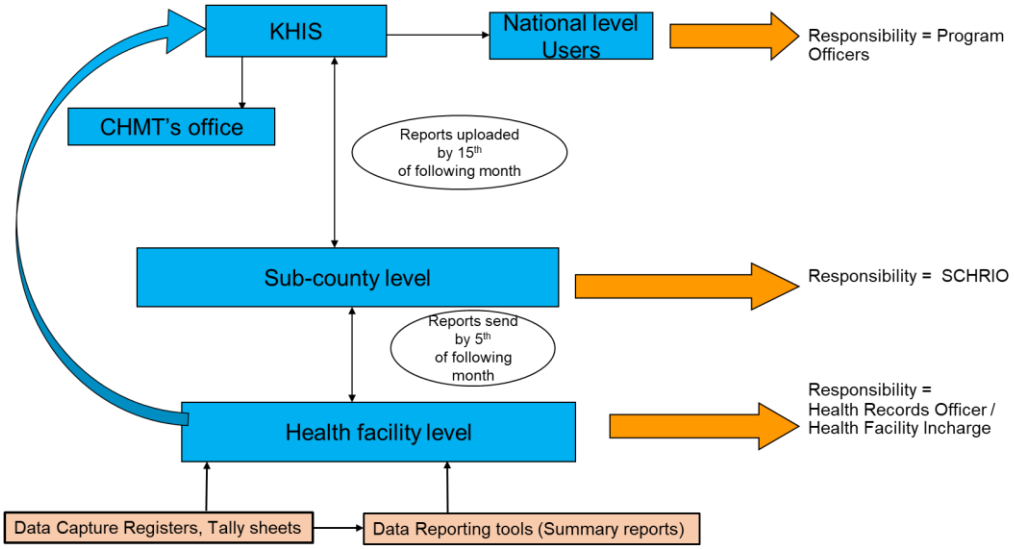
Another notable strength of the malaria M&E system is the availability of a detailed malaria M&E framework for assessing progress towards achieving KMS goals and objectives. An additional strength is the existence of a robust and integrated KHIS that provides routine malaria data and data visualisation platforms including the malaria programme dashboard, EPR monitoring app, malaria module, commodity dashboard, and scorecard. In addition, the programme in 2023 developed the Kenya Malaria Surveillance Guidelines document to provide a standardised approach for all activities related to active and passive surveillance in the country.

Notable significant challenges that affect data availability and use include the suboptimal reporting of malaria data by the private sector, incomplete reporting of malaria inpatient morbidity and mortality data, and a lack of interoperability between EMR and other digital systems that collect malaria data with the KHIS.

Malaria data and information flow

Figure 11 shows the flow of routine data from the KHIS to the national level.

Figure 11. Malaria data and information flow



Data quality assurance

Quality of the data from routine health information system remains a challenge for both the malaria programme and the entire health sector. This is especially true in the case of reporting on inpatient morbidity and mortality data. This data is essential to provide a more accurate and complete picture of the malaria landscape for better planning, resource allocation and response strategies. The malaria programme undertakes key activities aimed at improving data quality, including the following:

- Capacity building for all health workers at the facility level in routine reporting into the KHIS
- Capacity-building for healthcare workers on ICD-11 to improve reporting of malaria inpatient data
- Data quality assessments and development of data quality improvement plans
- Capacity-building on case-based surveillance for malaria elimination in targeted counties
- Regular review of data from the routine health information system

Information products and dissemination

Information products generated from the malaria M&E system include biannual programme review reports; mid- and end-term performance review reports; quarterly malaria surveillance bulletins; biannual facility assessment reports; policy briefs; KMIS reports; and findings from operational research studies and evaluations. Multiple dissemination channels ensure information reaches relevant users; these channles also achieve as wide of coverage as possible. The dissemination channels include the consultative work planning and review meetings; planned capacity building sessions; the biennial Kenya malaria forum; other regional and international conferences; world malaria day; print and broadcast media; and both the malaria programme website (www.nmcp.or.ke) and the MOH website (www.health.go.ke). Other planned activities in the KMS 2023–2027 that will enhance dissemination of malaria information include:

- Development of a repository for malaria data and a framework for data-sharing
- Regular updating of malaria stratification maps
- Capacity building of county and sub-county health management teams on utilisation of KHIS malaria dashboards, scorecard, and malaria module
- Developing and sharing of malaria surveillance bulletins and profiles

A data use plan has been included in Annex 4 to emphasize the key questions that can be effectively answered with relevant data under each objective to meet the information needs of different stakeholders at both national and sub-national levels. This plan identifies potential information users, the type of information they require, and communication channel that can be used to make the information available for use in programme planning and decision-making.

M&E coordination mechanisms

In line with the “three ones” principle, there will be only one agreed-upon M&E framework to serve the national malaria program, the counties, and all other malaria stakeholders in the country. The NMP will continue to guide the coordinated implementation of the M&E framework for efficient and effective use of resources. Data generated by the M&E system will serve the needs of many constituents, including the NMP, counties, academia, researchers, and development partners; this will thus eliminate the need for parallel and duplicative M&E processes and activities. At the national level, implementation of the malaria M&E activities will be coordinated through the SME COE. This will bring together technical staff and representatives of other MOH departments and units, as well as implementing partners and donor organisations, under the management of the NMP SME unit. Through the COE, the unit will maintain close links with the other MOH departments and units, including the Division of Digital Health; Disease Surveillance Division; Department of Civil Registration and Vital Statistics; Vector-Borne Disease Unit; Reproductive, Maternal, Neonatal, Child, and Adolescent Health Division; Community Health Division; Environmental Health and Sanitation Division; National Vaccination Services Division; National Laboratory Services Division; PPB; and the Kenya Medical Supplies Agency.

County malaria coordinators will be responsible for coordination and management of the malaria M&E activities at the county level. They will be expected to work within the existing coordination structures at the county level, and to ensure effective flow of information and feedback to all levels. NMP will work closely with the Division of Digital Health to enhance availability and use of routine data capture tools at sub-national and facility levels. The programme will also engage community health stakeholders to support improved data capture and reporting for malaria community case management.

NMP will maintain and strengthen multi- and inter-sectoral engagement for improved programme planning, implementation, monitoring, and coordination towards achievement of the programme goals. The planned development of a national database to document all malaria stakeholders at all levels will aid this process. Implementation of the M&E framework will require close collaboration with other government departments; civil society organisations; and the private sector. It will also require close collaboration with partners such as the Global Fund, PMI and respective relevant implementing partners the UK Department for International Development and respective relevant implementing partners, WHO, United Nation Organizations, Kenya Medical Research Institute (KEMRI) and affiliate institutions, Kenya association of private hospitals, Amref Health Africa in Kenya, World Vision Kenya, relevant departments of academic institutions, International Centre of Insect Physiology and Ecology, Kenya NGOs Alliance Against Malaria, Kenya Meteorological Department, National Council for Population Development, and KNBS.

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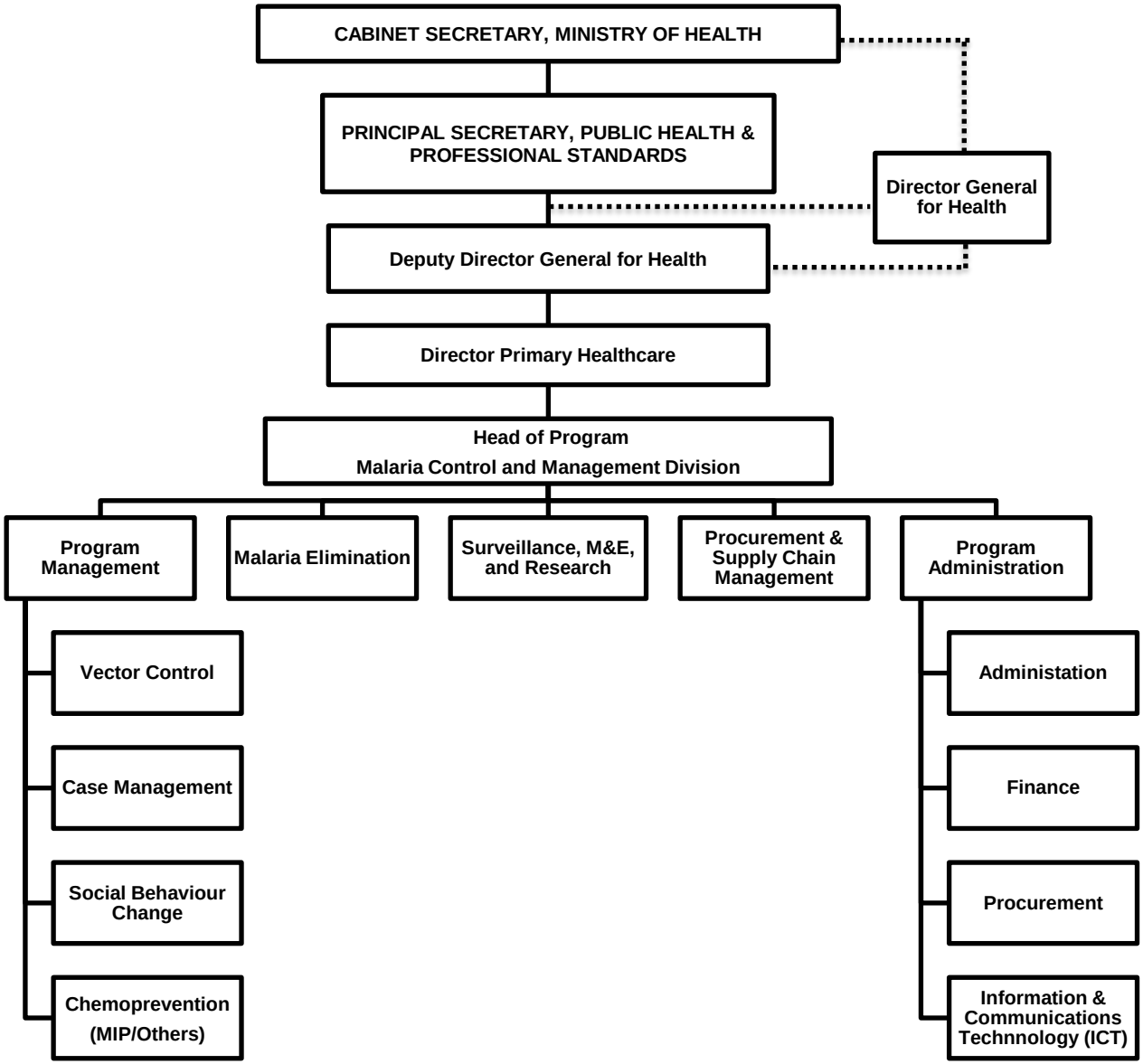
Annex 1: Structure of the National Malaria Programme



Annex 2: Terms of reference for the Malaria Health Sector Working Group

The Malaria Health Sector Working Group is the technical coordinating agency for the malaria control in Kenya.

The purpose of the Malaria Health Sector Working Group is to review recommendations from the various committees of experts and advocate for- and mobilise resources for malaria control and elimination in Kenya. The Working Group will also prioritize areas of investment, set national targets based on global guidance for malaria control and elimination, and oversee implementation of interventions including review of progress against set targets.

Terms of reference	Group Leadership	Members
1. To advise and guide the Ministry of Health on malaria policy, strategies and priorities 2. To advise the programme on climate change and regional cross-border issues 3. To advise and support the NMP in mobilising resources for malaria control and elimination interventions 4. To advise and guide the NMP and other implementing partners on the implementation of the Kenya Malaria Strategy 5. To act as a forum for exchange of information on partners' malaria control, elimination and research activities 6. To identify and advise on strategic areas for coordination at the county, national, and international levels 7. To define and review the output of committees of experts and sub-committees and take account of their findings in formulating advice and recommending action 8. To receive and review progress and performance reports against set targets 9. To identify problems and obstacles to implementation of malaria control and elimination activities and recommend solutions 10. To provide regular updates to the MOH on achievements and progress against objectives	Director, Primary Healthcare, Preventive and Promotive Health (Chair) Head, National Malaria Control Programme (Secretary)	• Head, Directorate of Technical Planning • Head, Division of Monitoring and Evaluation • Head, Division of Curative Services • Head, Division of Vector Borne and Neglected Tropical Diseases • Head, Directorate Family Health • Kenya Medical Supplies Authority • Representatives from regulatory bodies • County Directors of Health • Council of Governors (Health Representative) • Director Public Health • Deputy Director Research and Development KEMRI • The National Treasury • U.S. President's Malaria Initiative • Amref Health Africa • World Health Organisation • UK Department of International Development • United Nations Children's Fund • World Bank • Civil Society Organisation representation • Private Sector representations • All chairpersons of various committees of experts
NOTE: Other members may be co-opted from time to time as need arises.		

Annex 3: Terms of reference for the NMP Commitees of Experts

Vector Control

Purpose: To recommend policy direction and provide technical support for integrated vector management for malaria control activities

Terms of reference	Chair	Membership
1. To advice the Malaria Health Sector Working Group on vector control policy direction 2. To provide a forum for the private and public sector groups to consider and recommend policy direction and against solicited research 3. To review modalities and costs of GOK/Donor assisted targeted distribution of LLINs, IRS and LSM to population at risk 4. To review the performance of vector control intervention on a regular basis 5. To advice on curriculum review for health workers training on vector control 6. To liaise with the SBC-COE on appropriate messaging to support vector control activities 7. To provide forum for sharing of technical information with Pest Control Products Board on malaria vector control products 8. Custodian and repository of knowledge on malaria vector control 9. To provide technical support for entomological surveillance and monitoring of vector control tools 10. To develop and review vector control guidelines	Head, National Malaria Control Programme (Chair) NMCP Vector Control Focal Person (Secretary)	• NMCP • Migori county CMCC with any other county being co-opted depending on the agenda/need • Division of Disease Surveillance and Response • Pest Control Products Board • U.S. President's Malaria Initiative • Relevant PMI/USAID implementing partners • World Health Organisation • Relevant academic institutions including Kenya Medical Training College, University of Nairobi, Pwani University, and the Technical University of Mombasa • Kenya Medical Supplies Authority • International Centre of Insect Physiology and Ecology • National Environment Management Authority • KEMRI and affiliate institutions • Kenya NGO Alliance Against Malaria • Division of Vector Borne and Neglected Tropical Diseases • Division of Community Health Services • Private Sector representation: ➢ Bayer ➢ Sumitomo chemicals ➢ Pestmatic ➢ Envu Global ➢ Mitsui ➢ Vestergard

Chemoprevention

Purpose: To advise on policy and guidelines and provide strategic planning, coordination and oversight for the implementation of malaria chemoprevention in liaison with relevant divisions and institutions within the health sector

Terms of reference	Chair	Membership
1. Develop strategies for malaria chemoprevention interventions (MiP, SMC, mass drug administration, PDMC and others) 2. To support the development of annual work plans for malaria chemoprevention 3. To advise on multisectoral engagement and partnership in implementation of chemoprevention interventions 4. To provide technical guidance and oversight for implementation of chemoprevention and malaria vaccine interventions 5. To work with the SMEOR COE to periodically monitor progress and evaluate impact of chemoprevention interventions 6. To work with the SBC COE to increase awareness and uptake of the chemoprevention interventions 7. To identify gaps and opportunities for capacity development, implementation approaches and best-practices in chemoprevention 8. To review and advise on evidence for adoption into policy and practice for chemoprevention 9. To receive and review outputs from the subcommittees 10. To develop reports on implementation progress to the Malaria Health Sector Working Group on a quarterly basis 11. To advise on guidelines and training curricula for chemoprevention interventions 12. To advise on development of strategies for the scale up of malaria chemoprevention interventions 13. Define and prioritise operational research agenda relevant to malaria chemoprevention and malaria vaccines 14. Custodian and repository of knowledge on malaria chemoprevention	Alternate/rotating Chair – Head, Reproductive, Maternal, Newborn Child, and Adolescent Health Division Child Health and National Vaccine Programme Head, National Malaria Control Programme NMCP Chemoprevention Focal Person (Secretary)	• NMCP • Reproductive, Maternal, Newborn Child, and Adolescent Health Division • Health Promotion and Education Division • Division of Community Health Services • Digital Health, Informatics and Innovations • National Vaccine and Immunization Programme • Kenya Meteorological Department • Kenya Obstetrical and Gynaecological Society • Kenya Paediatrics Association • Relevant departments of academia institutions • Kenya Medical Supplies Authority • Kenya Clinical Officers Council • Pharmacy and Poisons Board • Nursing Council of Kenya • KEMRI and affiliate institutions • World Health Organisation • United Nations Children's Fund • Population Services Kenya • U.S. President's Malaria Initiative • Relevant PMI/USAID implementing partners • PATH • Catholic Relief Services • Academic Model Providing Access to Healthcare (AMPATH)

Case Management

Purpose: To advise on policy issues related to diagnosis and treatment of malaria in Kenya

Terms of reference	Chair	Membership
1. To develop strategies for malaria case management interventions (diagnosis and management of uncomplicated and severe cases of malaria) 2. To provide policy guidelines on malaria diagnosis and treatment based on available evidence 3. To monitor the implementation of the current diagnosis and treatment policy to identify gaps and recommend solutions 4. To review pre-service and in-service training for malaria case management and parasitological diagnosis and recommend changes to curricula or training packages to meet these needs 5. To provide policy and structured guidance to the private sector in adherence to the Kenya malaria diagnosis and treatment guidelines 6. To give technical advice on the quantification of antimalarial and diagnostic commodities based on the country's need 7. To provide a platform for stakeholders engaged in diagnosis and case management studies to present planned or ongoing research as well as findings 8. To advise on the integration of malaria case management with broader health systems strengthening efforts and other disease control programs 9. To ensure alignment with global malaria control and elimination goals, including World Health Organisation recommendations and regional frameworks 10. To collaborate in- and provide technical input on malaria case management in other committees of experts 11. To provide technical guidance for quality malaria case management service delivery in private sector 12. To report regularly to and advise the Malaria Health Sector Working Group on case management policy directions	Head, National Malaria Control Programme (Chair) NMCP Case Management Focal Person (Secretary)	• NMCP • U.S. President's Malaria Initiative • Population Services Kenya • Relevant PMI/USAID implementing partners • World Health Organisation • United Nations Children's Fund • Kenya Medical Supplies Authority • KEMRI and affiliate institutions • Amref Health Africa • Professional bodies such as the Kenya Medical Association, Nursing Council of Kenya, Pharmaceutical Societies of Kenya, and the Clinical officers Council • Academia and training institutions • National Quality Control Laboratory • National Public Health Laboratory Services • Division of Community Health Services • Directorate of Health Products and Technologies • Pharmacy and Poisons Board • Kenya Medical Laboratory Technicians and Technologists Board

NOTE: Other members may be co-opted from time to time as need arises.

Sub-committees for the COE including on multiple firstline, diagnostics, and genomic surveillance will meet quarterly and when need arises. The deliberations of the sub-committees will feed into the COE deliberations.

Malaria Social Behaviour Change

Purpose: To advise the Malaria Health Sector Working Group on policy issues and provide technical support on implementation of advocacy, communication and social mobilization for malaria prevention, control, and elimination interventions

Terms of reference	Chair	Membership
1. To advise the Malaria Health Sector Working Group on policy and strategy concerning malaria SBC 2. To support advocacy and resource mobilisation initiatives for malaria prevention, control, and elimination 3. To provide technical guidance on all aspects SBC including messages design, production, dissemination, monitoring and evaluation 4. To provide a forum for malaria SBC partners to coordinate the planning, implementation and monitoring of malaria SBC activities 5. To provide a platform for the development, review and approval of standardized malaria messages that can be adapted into local context 6. To provide technical guidance in identifying SBC research priorities and share with relevant research institutions and academia 7. To provide technical guidance to malaria SBC research activities 8. To identify, document and disseminate best practices on malaria SBC 9. To provide SBC support to other COEs such as vector control, malaria chemoprevention, case management, malaria elimination, and SMEOR 10. To report to the Malaria Health Sector Working Group on a quarterly basis	Head, Division of Health Promotion and Education (Chair) NMCP SBC Focal Person (Secretary)	• NMCP • Health Promotion and Education Division • Director of Public Communication • Reproductive, Maternal, Newborn Child and Adolescent Health Division • Division of Community Health Services • National Vaccines and Immunization Programme • Relevant Ministries such as Ministry of Education, and Ministry of Information, Communication and Technology • Representation of County Departments of Health through select County Malaria Coordinators • World Health Organisation • United Nations Children's Fund • U.S. President's Malaria Initiative • Relevant PMI/USAID implementing partners • UK Department of International Development and implementing partners • Bill and Melinda Gates Foundation and implementing partners • Amref Health Africa • Kenya NGO Alliance Against Malaria • Kenya Red Cross • World Vision • Catholic Relief Services • PATH • KEMRI and affiliate institutions • Relevant departments of academia • Africa Leaders Malaria Alliance Against Malaria (ALMA) • Kenya Malaria Youth Corps • Kenya End Malaria Council • Malaria No More UK • Kenya Editors Guild

NOTE: Other members may be co-opted from time to time as need arises.

- SBC COE to define its guidelines with respect to conduct of meetings, constitution of subcommittees, quorum among other operational processes.
- SBC COE from time-to-time to constitute subcommittees to address specific aspects of SBC tasks as per need

Surveillance, Monitoring and Evaluation

Purpose: To advise and provide technical support on surveillance, monitoring and evaluation of the strategic objectives, and assess research needs and implications of emerging evidence

Terms of reference	Chair	Membership
1. To advise on methods for measuring the indicators for malaria as stipulated by the Kenya Malaria Strategy 2. To monitor and support evaluation of progress towards the KMS goals, objectives, and strategies 3. To identify the logistical and resource issues associated with applying the proposed evaluation and survey methodologies and make recommendations on the way forward 4. To advise on the surveillance modalities for malaria management 5. To disseminate the results of monitoring and evaluation and ensure they are taken into account during strategic planning and review 6. To identify and advise on emerging evidence and its implications for policy and strategic application 7. To monitor and advise on appropriate strategies and guidelines for EPR 8. To make recommendations and report regularly to the Malaria Health Sector Working Group	Head, National Malaria Control Programme (Chair) NMCP SMEOR Focal Person (Secretary)	• NMCP • Digital Health, Informatics, and Innovations • Civil Registration and Vital Statistics • Division of Disease Surveillance and Response • Division of Vector Borne and Neglected Tropical Diseases • Reproductive, Maternal, Newborn Child, and Adolescent Health Division • Division of Community Health Services • Environmental Health and Sanitation Division • National Vaccines and Immunization Programme • Pharmacy and Poisons Board • Catholic Relief Services • Africa Leaders Malaria Alliance Against Malaria (ALMA) • Kenya Medical Supplies Authority • Kenya National Bureau of Statistics • National Council for Population and Development • Kenya Meteorological Department • Kenya NGO Alliance Against Malaria • Relevant departments of academic institutions • Amref Health Africa • World Vision Kenya • KEMRI and affiliate institutions • U.S. President's Malaria Initiative • Relevant PMI/USAID implementing partners • UK Department of International Development and implementing partners • World Health Organisation • United Nations Children's Fund • Kenya association of private hospitals

Operational Research **Purpose:** To coordinate appropriate research activities and assess policy implications of emerging evidence		
Terms of reference	**Chair**	**Membership**
1. To advise on malaria research priorities to support the Kenya Malaria Strategy implementation 2. To set a prioritized research agenda for malaria management in Kenya as well as review progress in the various on-going research activities 3. To mobilize partners and advocate for funds for the malaria research agenda 4. To develop and oversee the implementation of a strategy for dissemination of research findings relevant to the Kenya Malaria Strategy implementation 5. To track, collate, package, and disseminate emerging research evidence nationally and internationally in relation to policy issues in the Kenya Malaria Strategy 6. To provide a theme and stewardship for the biennial Kenya Malaria Forum 7. To report regularly to the Malaria Health Sector Working Group	Research Institutions (Rotational Chair) NMCP SMEOR Focal Person (Secretary)	• NMCP • Division of Vector Borne and Neglected Tropical Diseases • Health Sector Research and Development Division • KEMRI and affiliate institutions • Academic Model Providing Access to Healthcare (AMPATH) • International Centre of Insect Physiology and Ecology • Amref Health Africa • Relevant departments of academic institutions • Kenya NGO Alliance Against Malaria • Catholic Relief Services • Africa Leaders Malaria Alliance Against Malaria (ALMA) • African Population and Health Research Centre • African Institute for Development Policy • Applied Malaria Modelling Network • PATH • U.S. President's Malaria Initiative • Relevant PMI/USAID implementing partners • United Nations Children's Fund • World Bank • World Health Organisation

Malaria Elimination

Purpose: To provide technical advice, guidance and oversight for the implementation of malaria elimination agenda in Kenya

Terms of reference	Chair	Membership
1. To advise the Malaria Health Sector Working Group on policy and strategies for malaria elimination 2. To advocate for malaria elimination at national and county levels emphasizing the importance of political commitment, financial investment, and cross sectoral collaboration 3. To ensure buy-in of the malaria elimination agenda by both state and non-state actors 4. To provide technical guidance on malaria elimination including establishing a functional case-based surveillance system 5. To liaise with relevant COEs to ensure that malaria elimination considerations are included in all interventions 6. To oversee the verification of interruption of malaria transmission in target counties 7. To validate guidelines and training curricula for malaria elimination 8. To regularly review progress towards attainment of malaria elimination targets as outlined in the Kenya Malaria Strategy performance framework 9. To identify, document, and disseminate best practices on malaria elimination 10. To identify malaria elimination research priorities and liaise with the operations research COE to share the priorities with relevant research community 11. To report to the Malaria Health Sector Working Group on a quarterly basis	Head, National Malaria Control Programme (Chair) NMCP Malaria Elimination Focal Person (Secretary)	• NMCP • Division of Digital Health, Informatics and Innovations • Division of Disease Surveillance and Response • Division of Vector Borne and Neglected Tropical Diseases • Division of Community Health Services • Division of Health Promotion and Education • National Public Health Laboratory Services • KEMRI and affiliate institutions • Kenya Medical Supplies Authority • U.S. President's Malaria Initiative • Relevant PMI/USAID implementing partners • World Health Organisation • RBM Partnership to End Malaria • Catholic Relief Services • Relevant departments of academic institutions • Amref Health Africa • PATH • World Vision • Malaria No More UK • Africa Leaders Malaria Alliance Against Malaria (ALMA) • Kenya NGO Alliance Against Malaria • Kenya End Malaria Council • Kenya Malaria Youth Corps • Council of Governors • County governments for targeted counties • Ministry of Agriculture • Ministry of Roads and Transport • Ministry of Trade • Ministry of Tourism • Kenya Meteorological Department • Local Community-Based organisations • Private Sector representations

NOTE: Other members may be co-opted from time to time as need arises.

- Malaria elimination COE may, from time-to-time, constitute subcommittees to address aspects of malaria elimination tasks as per need

Resource Mobilisation **Purpose:** To ensure availability of adequate financial resources for the implementation of the Kenya Malaria Strategy		
Terms of reference	**Chair**	**Membership**
1. To advice on the resource mobilisation for NMP both domestic and external 2. To review funding absorption and advise on actions 3. To review the annual resource mobilisation plan 4. To review and advise on annual financial gaps 5. To provide effective coordination for the development of proposals for resource mobilisation	Head, Division of Financing and Resource Mobilisation (Chair) National Malaria Control Programme (Secretary)	• Directorate of Technical Planning • Chief Finance Officer • Council of Governors • The National Treasury • U.S. President's Malaria Initiative • Relevant PMI/USAID implementing partners • Amref Health Africa • World Health Organization • RBM Partnership to End Malaria • UK Department of International Development • United Nations Children's Fund • World Bank • Africa Leaders Malaria Alliance (ALMA) • Kenya End Malaria Council • Catholic Relief Services • Malaria No More • Civil Society Organisation representation • Private Sector representations
NOTE: Other members may be co-opted from time to time as need arises.		

Procurement and Supply Chain Management

Purpose: To provide overall stewardship on malaria commodity management

Terms of reference	Chair	Membership
1. To provide technical advice on forecasting and quantification of malaria commodities 2. To monitor and recommend actions related to commodity pipeline 3. To review and advice on stock status on a regular basis 4. To report regularly to and advise the Malaria Health Sector Working Group on PSM issues 5. To liaise with relevant entities to review and advise on malaria commodities tools and guidelines 6. To advise on distribution of commodities 7. To liaise with regulators and advise the programme on issues related to post-market surveillance 8. Resource mobilisation for malaria commodities	Head, National Malaria Control Programme (Chair) NMCP PSM Focal Person (Secretary)	• NMCP • The National Treasury • Kenya Medical Supplies Authority • Pharmacy and Poisons Board • National Quality Control Laboratory • U.S. President's Malaria Initiative • Directorate of Health Products and Technologies • Pest Control Products Board • Relevant PMI/USAID Implementing Partners • World Health Organisation • Amref Health Africa • United Nations Children's Fund • Council of Governors • Private Sector representations

NOTE: Other members may be co-opted from time to time as need arises.

*For purposes of term of reference No. 3, a subset of this team will be meeting on a monthly basis and the membership of the monthly meeting will include but is not limited to NMCP, KEMSA, The National Treasury, Pharmacy and Poisons Board, PMI, relevant PMI/USAID Implementing Partners, WHO

Annex 4: M&E performance framework for KMS 2023—2027

Goals/Strategies	Indicators	Data source	Frequency	Responsible
To reduce malaria incidence by at least 80 percent of the 2023 levels by 2027/28	Total confirmed malaria cases (per 1,000 persons per year)	Routine surveillance	Annually	NMP, Counties
To reduce malaria deaths by at least 90 percent of the 2023 levels by 2027/28	Total malaria deaths (per 100,000 persons per year)	Routine surveillance	Annually	NMP, Counties, and Civil Registration and Vital Statistics
To interrupt indigenous malaria transmission in selected counties by 2027/2028	Number of counties with zero indigenous malaria cases	Case-based surveillance	Annually	NMP, Counties
Objective 1: To ensure universal coverage of appropriate vector control interventions in all populations at risk of malaria				
Strategy 1.1: LLIN distribution as per the updated stratification maps	**Input**			
	Amount of funds available for LLINs	Programme reports	Annually	NMP, Partners
	Availability of action plan for mass net distribution			
	Process			
	Number of LLINs purchased	Activity reports	Annually	NMP, Partners
	Number of households registered for mass net distribution	Activity reports	Quarterly	NMP, Counties, and Partners
	Number of LLINs distributed through mass net campaigns	Activity reports	Quarterly	NMP, Counties, and Partners
	Number of LLINs distributed through other channels	Activity reports	Quarterly	NMP, Counties, and Partners
	Number of LLINs distributed through ANC and child welfare clinics	Routine surveillance	Monthly	NMP, Counties
	Output			
	Proportion of household population with universal coverage of LLINs	Activity reports, PMLLIN	Once every three years	NMP, KNBS

Goals/Strategies	Indicators	Data source	Frequency	Responsible
	Outcome			
	Proportion of households with universal coverage of LLINs in malaria risk areas	PMLLIN, KMIS	Once every 3 years	NMP, KNBS
Strategy 1.2: Indoor residual spraying	**Input**			
	Amount of funds available for IRS strategy	Programme reports	Annually	NMP, Partners
	Reviewed IRS business plan			
	Updated IRS guidelines			
	Process			
	Number of targeted households/sprayable structures identified	Activity reports	Annually	NMP, Counties, and Partners
	Number of spray operators trained			
	Number of house units (dwelling structures) sprayed within the last 12 months			
	Number of households targeted for reactive IRS in elimination settings	Activity reports	Annually	NMP, Counties, and Partners
	Output			
	Proportion of targeted structures sprayed per spray cycle	Activity reports	Annually	NMP, Counties, and Partners
	Outcome			
	Proportion of population in targeted areas protected through IRS within the last 12 months	IRS campaign activity reports	Annually	NMP, Partners
Strategy 1.3: Larval source management	**Input**			
	Amount of funds available for LSM	Programme reports	Annually	NMP, Vector-Borne Disease Unit
	Updated LSM standard operating procedures			
	Process			

Goals/Strategies	Indicators	Data source	Frequency	Responsible
	Number of people trained in LSM in targeted counties	Activity reports	Quarterly	NMP, Vector-Borne Disease Unit, and KEMRI
	Number of larval habitats mapped			
	Number of mapped larval habitats targeted for LSM			
	Output			
	Proportion of known habitats mapped	Activity reports	Quarterly	NMP, Vector-Borne Disease Unit, and KEMRI
	Proportion of mapped habitats that are treated	Activity reports	Biannually	
	Outcome			
	Percent reduction in larval density in habitats targeted for LSM	Entomological surveillance	Annually	NMP, Vector-Borne Disease Unit, KEMRI, and Counties
Strategy 1.4: Adopt new appropriate interventions or technologies	**Input**			
	Number of COE meetings that reviewed new interventions or technologies	Programme reports	Annually	NMP, KEMRI, and Counties
	Number of engagement meetings with partners conducting operations research in new interventions or technologies			
	Process			
	Number of spatial repellents procured for distribution	Activity reports	Annually	NMP, KEMRI, and Counties
	Number of households protected with spatial repellents	Activity reports	Annually	
	Availability of policy on new interventions or technologies	Programme reports	Annually	
	Number of new interventions or technologies adopted	Activity reports	Annually	
	Output			
	Proportion of targeted households covered with the new intervention or technology	Activity reports	Annually	NMP, KEMRI, and Counties

Goals/Strategies	Indicators	Data source	Frequency	Responsible
	Outcome			
	Proportion of targeted population covered with new intervention or technology	Activity reports	Annually	NMP, KEMRI, and Counties
Strategy 1.5: Review and update vector control guidelines	**Input**			
	Amount of funds available for review of vector control guidelines	Programme reports	Once every five years	NMP, Partners
	Process			
	Number of workshops or meetings held to review and update guidelines	Programme reports	Once every five years	NMP, Partners, and Counties
	Output			
	Number of vector control guidelines developed	Activity report	Once every five years	NMP, Partners, and Counties
	Outcome			
	Number of vector control guidelines disseminated	Activity report	Once every five years	NMP Partners, and Counties
Strategy 1.6: Strengthen malaria surveillance for generation of vector bionomics and insecticide resistance profiles	**Input**			
	Amount of funds available for entomology surveillance	Programme reports	Annually	NMP, Partners
	Revised entomological surveillance operational guidelines			
	Entomological surveillance tools			
	Process			
	Number of entomological surveillance tools procured	Activity reports	Quarterly	NMP, Counties, and Partners
	Number of entomological sentinel sites selected	Activity reports		
	Number of vector susceptibility testing sentinel sites selected	Activity reports	Annually	
	Number of entomological surveys conducted	Activity reports	Quarterly	

Goals/Strategies	Indicators	Data source	Frequency	Responsible
	Number of people trained in entomological surveillance	Activity reports	Annually	
	Number of sites conducting insecticide resistance monitoring	Activity reports	Annually	
	Output			
	Entomological profile maps	Activity reports	Annually	NMP, Counties, and Partners
	Insecticide resistance profiles	Activity reports	Annually	
	Outcome			
	Annual entomological inoculation rate	Entomological surveillance	Annually	NMP, Counties, and Partners
Strategy 1.7: Optimise entomological data capture and use for decision-making	**Input**			
	Amount of funds available to ensure optimisation of entomological data capture and use	Programme reports	Annually	NMP, Partners
	Entomology data capture tools			
	Process			
	Entomology database in place	Activity reports	Once	NMP, Counties, and Partners
	Number of staff trained in using the entomology database	Activity reports	Annually	
	Output			
	Comprehensive and up-to-date entomology data	Activity reports	Quarterly	NMP, Counties, and Partners
	Outcome			
	Number of information products developed using the entomological data	Activity reports	Annually	NMP, Counties, and Partners
Strategy 1.8: Strengthen the generation of data on the efficacy and effectiveness of vector control tools and technologies	**Input**			
	Amount of funds available for monitoring vector control tools and technologies	Programme reports	Annually	NMP

Goals/Strategies	Indicators	Data source	Frequency	Responsible
	Process			
	Guidelines for monitoring of vector control tools and technologies	Activity reports	Annually	NMP
	Output			
	Number of planned surveys conducted	Activity reports	Annually	NMP
	Outcome			
	Availability of reports with information on efficacy and effectiveness of vector control tools and technologies	Activity reports	Annually	NMP
Objective 2: To ensure optimum coverage of malaria chemoprevention interventions and vaccines in eligible populations				
Strategy 2.1: At least 80 percent of all eligible pregnant women at risk receive IPTp	**Input**			
	Amount of funds available for IPTp	Programme reports	Quarterly	NMP, Counties
	Number of doses procured for IPTp			
	Number of IPTp doses distributed			
	Process			
	Number of service providers in targeted counties trained in prevention of MIP	Activity reports	Quarterly	NMP, Counties, and Partners
	Number of pregnant women in targeted counties attending ANC visits	Routine surveillance	Monthly	NMP, Counties
	Number of CHPs in targeted counties trained in prevention of MIP	Activity reports	Quarterly	NMP, Counties, and Partners
	Number of health facilities, in targeted counties receiving mentorship on prevention of MIP	Activity reports	Quarterly	NMP, Counties, and Partners
	Output			
	Proportion of ANC clients receiving IPTp at the ANC	Routine surveillance	Quarterly	NMP, Counties
	Outcome			

Goals/Strategies	Indicators	Data source	Frequency	Responsible
	Proportion of eligible pregnant women in targeted counties who received three or more doses of IPTp during their last pregnancy	Household surveys	2—3 years	NMP, KNBS
Strategy 2.2: Adopt other relevant chemoprevention strategies	**Input**			
	Amount of funds available for other chemoprevention strategies	Programme reports	Annually	NMP, Partners
	Number of doses procured for SMC			
	Number of SMC doses distributed			
	Process			
	Number of service providers in targeted counties trained on SMC	Activity reports	Annually	NMP, Partners
	Number of CHPs in targeted counties trained on SMC	Activity reports	Annually	
	Number of community mobilizers sensitized on SMC	Activity reports	Annually	
	Output			
	Number of villages sensitized on SMC	Activity reports	Annually	NMP, Partners
	Proportion of the targeted population reached with SMC intervention	Activity reports	Annually	
	Outcome			
	Confirmed malaria cases as a percentage of total outpatient among children under-five in areas where SMC has been implemented	Routine surveillance, activity reports	Annually	NMP, Partners
	Number of severe malaria cases among children under-five in areas where SMC has been implemented	Routine surveillance, activity reports	Annually	
Strategy 2.3: Ensure all populations eligible for the malaria vaccine are covered	**Input**			
	Amount of funds available for malaria vaccine	Programme reports	Annually	National Vaccine Program, NMP, and Partners
	Number of vaccine doses procured			
	Process			

Goals/Strategies	Indicators	Data source	Frequency	Responsible
	Number of meetings held to discuss malaria vaccine implementation	Activity reports	Annually	National Vaccine Program, NMP, and Partners
	Output			
	Proportion of the eligible children vaccinated with first dose of malaria vaccine	National Vaccine Programme reports	Annually	NMP, National Vaccine Program
	Outcome			
	Proportion of the eligible population vaccinated with fourth dose of malaria vaccine	National Vaccine Programme reports	Annually	NMP, National Vaccine Program
Strategy 2.4: Develop innovative solutions and strategies to address gender and equity barriers in the implementation of malaria chemoprevention	**Input**			
	Availability of gender and equity aspects in chemoprevention guidelines and data collection tools	Programme report	Annually	NMP, Partners
	Process			
	Number of training sessions on gender and equity barriers in targeted counties	Activity reports	Annually	NMP, Partners
	Number of health workers trained on gender and equity barriers			
	Output			
	Proportion of health workers who demonstrate increased awareness of gender and equity barriers after a training session	Activity reports (pre- and post-test in training activity)	Annually	NMP, Partners
	Outcome			
	Proportion of population receiving chemoprevention disaggregated by gender	Activity reports	Annually	NMP, Partners
Objective 3: To ensure malaria cases are managed according to the national diagnosis, treatment, and prevention guidelines				
	Input			
	Amount of funds available for case management	Programme reports	Quarterly	NMP, Partners

Goals/Strategies	Indicators	Data source	Frequency	Responsible
Strategy 3.1: Ensure 100 percent of confirmed malaria cases receive appropriate treatment	Revised malaria diagnosis, treatment, and prevention guidelines and curricula			
	Process			
	Number of health workers trained in malaria case management	Activity reports	Quarterly	NMP, Counties
	Number of confirmed malaria cases	Routine surveillance	Monthly	NMP, Counties
	Output			
	Proportion of health workers who received mentorship or supportive supervision for malaria case management in the last three months preceding the survey	Health facility assessment reports	Annually	NMP
	Test positivity rate	Routine surveillance	Monthly	NMP, Counties
	Outcome			
	Proportion of suspected malaria cases presenting to CHPs and public health facilities tested with mRDT or microscopy	Routine surveillance	Monthly	NMP, Counties
	Proportion of suspected malaria cases presenting to public health facilities managed in accordance with the Kenya malaria treatment guidelines	Health facility assessment reports	Annually	NMP
	Proportion of parasitologically confirmed malaria cases presenting to CHPs and public facilities who received artemisinin-based combination therapy	Routine surveillance	Monthly	NMP, Counties
	Malaria case fatality rate	Routine surveillance	Quarterly	NMP, Counties
Strategy 3.2: Ensure 100 percent of suspected malaria cases receive quality-assured parasitological diagnosis at all levels of care	**Input**			
	Malaria parasitological diagnosis guidelines and curricula	Programme reports	Quarterly	NMP
	Guidelines and curricula for quality assurance of malaria diagnosis			
	Updated malaria diagnosis quality assurance implementation plan			

Goals/Strategies	Indicators	Data source	Frequency	Responsible
	Process			
	Number of health workers trained on malaria parasitological diagnosis	Activity reports	Quarterly	NMP, Counties, and Partners
	Number of health workers trained on quality assurance for malaria diagnosis			
	Output			
	Proportion of planned biannual quality assurance meetings held	Activity reports	Annually	NMP
	Outcome			
	Proportion of laboratories performing light microscopy for malaria enrolled in external quality assurance programme	Activity reports	Quarterly	NMP, Counties
Strategy 3.3: Strengthen public-private engagement and partnerships for quality malaria case management	**Input**			
	Availability of mapping tools	Programme reports	Monthly	NMP, Counties
	Number of training modules developed			
	Availability of required digital platforms			
	Availability of monitoring and mentorship tools			
	Process			
	Number of training sessions conducted	Programme reports	Quarterly	NMP, Counties
	Number of mentorship sessions conducted			
	Timeliness of reporting malaria case management data by private providers	Activity reports	Monthly	
	Output			
	Number of private health providers mapped	Programme reports	Quarterly	NMP, Counties
	Number of private health providers trained			
	Number of private health providers mentored			

Goals/Strategies	Indicators	Data source	Frequency	Responsible
	Number of data quality review meetings conducted			
	Outcome			
	Proportion of suspected malaria cases presenting to private facilities managed in accordance with the Kenya malaria treatment guidelines	Health facility assessment reports	Annually	NMP
	Proportion of suspected malaria cases presenting to private health facilities tested with mRDT or microscopy	Routine surveillance	Monthly	NMP, Counties
	Proportion of parasitologically confirmed cases presenting to targeted private facilities who received artemisinin-based combination therapy			
Objective 4: To ensure optimal utilisation of malaria interventions				
Strategy 4.1: Advocacy at all levels for increased investments and utilisation of malaria interventions	**Input:**			
	Amount of funds available for advocacy	Programme reports	Annually	NMP, Partners
	Malaria advocacy briefs			
	Process			
	Number of advocacy briefs developed	Activity reports	Annually	NMP, Partners
	Number of stakeholders trained on malaria advocacy	Activity reports	Yearly	NMCP, Counties, and Partners
	Output:			
	Number of advocacy forums or meetings held to advocate for prioritisation and social accountability for malaria	Activity reports	Biannually	NMP, Counties, and Partners
	Outcome			
	Proportion of counties incorporating malaria agenda in their strategic plans and annual work plans	Activity reports	Biennial	NMP, Counties, and Partners
	Proportion of civil society organisations and community groups actively involved in malaria advocacy and prevention activities			
	Input			

Goals/Strategies	Indicators	Data source	Frequency	Responsible
Strategy 4.2: Enhance awareness and utilisation of malaria interventions through comprehensive, evidence-based SBC approaches	Amount of funds available for SBC activities	Programme reports	Annually	NMP, Counties, and Partners
	Communication packages for malaria interventions			
	Process			
	Number of malaria intervention packages developed and disseminated	Activity reports	Annually	NMP, Counties, and Partners
	Number of CHPs, health workers, and community-based groups (including special interest groups) trained			
	Number of media campaigns conducted			
	Output			
	Number of households reached with malaria messages	Activity reports	Quarterly	NMP, Counties, and Partners
	Number of people reached with malaria messages	Surveys, activity reports	Annually	
	Proportion of population who recall hearing or seeing any malaria messages in the last six months	MBS	Every five years	NMP, Partners
	Outcome			
	Proportion of the population in malaria risk areas who slept under an LLIN the night before survey	KMIS, MBS, KDHS, and PMLLIN	Every five years	NMP, KNBS, and Partners
	Proportion of the population with comprehensive knowledge on malaria	KMIS, MBS		
	Proportion of population using LLIN among households with universal coverage	KMIS, MBS, KDHS, and PMLLIN		
	Proportion of children under-five with fever in the last two weeks for whom advice for treatment was sought within 24 hours	KMIS, MBS, KDHS, and PMLLIN		
Strategy 4.3: Strengthen the structure for coordination and delivery of malaria SBC interventions at all levels	**Input**			
	Amount of funds available for SBC coordination	Programme reports	Annually	

Goals/Strategies	Indicators	Data source	Frequency	Responsible
	Malaria SBC strategy		once	NMP, Counties, and Partners
	Process			
	Number of SBC coordination meetings held at national and county levels	Activity reports	Quarterly	NMP, Partners
	Output			
	Number of counties with SBC plans	Activity reports	Annually	NMP, Counties, and Partners
	Outcome			
	Proportion of counties implementing the SBC Plans	Activity reports	Annually	NMP, Counties, and Partners
Strategy 4.4: Evidence-based SBC approaches for removing barriers to gender, equity, and human rights in the utilisation of malaria interventions	**Input**			
	Amount of funds available for GER	Programme reports	Annually	NMP, Counties, and Partners
	GER champions			
	Process			
	Number of messages developed for KVPs	Activity reports	Annually	NMP, Partners
	Number of GER champions trained	Activity reports	Annually	NMP, Counties, and Partners
	Output			
	Number of vulnerable groups reached through the GER champions	Activity reports	Annually	NMP, Counties, and Partners
	Number of campaigns conducted for vulnerable groups	Activity reports	Annually	NMP, Counties, and Partners
	Outcome			
	Awareness and access to malaria interventions by KVPs	Malaria matchbox assessment report	Every five years	NMP, Counties, and Partners

Goals/Strategies	Indicators	Data source	Frequency	Responsible
Objective 5: To strengthen malaria surveillance and generation of evidence for decision making				
Strategy 5.1: Strengthen reporting of routine malaria data	**Input**			
	Amount of funds available for surveillance	Programme reports	Annually	NMP
	Process			
	Number of health workers trained on malaria dashboards	Activity reports	Annually	NMP, Counties, and Partners
	Number of health workers trained on ICD-11 and inpatient data reporting	Activity reports	Annually	NMP, Counties, and Partners
	Number of private health facilities reporting malaria surveillance data in the KHIS	Routine surveillance	Annually	NMP, Counties
	Output			
	Proportion of health facilities reporting inpatient data	Routine surveillance	Monthly	NMP, Counties
	Outcome			
	Proportion of expected health facility reports received	Routine surveillance	Monthly	NMP, Counties
	Proportion of expected health facility reports received on time	Routine surveillance	Monthly	NMP, Counties
Strategy 5.2: Improve the quality of routine malaria data from 76 percent to 90 percent in all counties by 2027/28	**Input**			
	Updated data quality assessment tools and protocol	Programme Reports	Annually	NMP, Counties, and Partners
	Revised support supervision manual			
	Process			
	Number of sub-counties conducting data quality assessments	Activity reports	Twice in the KMS period	NMP, Counties, and Partners
	Number of targeted health facilities for which a data quality assessment was conducted	Activity reports	Twice in the KMS period	NMP, Counties, and Partners

Goals/Strategies	Indicators	Data source	Frequency	Responsible
	Number of malaria surveillance mentorship or support supervision visits conducted	Activity reports	Biannually	NMP, Partners
	Output			
	Proportion of sub-counties that have implemented malaria data quality assessments	Activity reports	Annually	NMP, Counties, and Partners
	Proportion of targeted health facilities for which malaria mentorship or support supervision was conducted	Activity reports	Biannually	NMP, Partners, and Counties
	Outcome			
	Proportion of health facilities reporting quality malaria data (threshold above 90 and less than 110 percent)	Activity reports	Twice in the KMS period	NMP, Counties, and Partners
Strategy 5.3: Ensure optimal and timely epidemic monitoring for a prompt and informed response	**Input**			
	Amount of funds available for EPR activities	Programme reports	Annually	NMP, Counties, and Partners
	Revised EPR guidelines		Once	
	Process			
	Number of EPR planning and review meetings held	Activity reports	Annually	NMP, Counties, and Partners
	Number of health workers trained on EPR			
	Output			
	Proportion of reported epidemics or upsurges responded to within two weeks	Activity reports	As they occur	NMP, Counties
	Outcome			
	Proportion of targeted sub-counties that have surpassed the malaria epidemic thresholds investigated	Routine surveillance	Annually	NMP, Counties
Strategy 5.4: Conduct periodic assessments and population surveys to inform programmatic decisions	**Input**			
	Amount of funds available for malaria assessments and surveys	Programme reports	Annually	NMP
	Data collection tools			

Goals/Strategies	Indicators	Data source	Frequency	Responsible
	Process			
	Study protocols developed	Survey protocols	Annually, biannually, and every three years	NMP, KNBS, and Partners
	Output			
	Number of surveys conducted	Activity reports	Quarterly	NMP
	Outcome			
	Proportion of periodic assessment and population survey reports available	Activity reports	Annually, biannually, and every three years	NMP
Strategy 5.5: Strengthen the dissemination and use of malaria data-backed information products	**Input**			
	Amount of funds available	Programme reports	Annually	NMP, Partners
	Routine malaria surveillance, survey, and other contextual malaria-related (e.g., climate, migration) data			
	Process			
	Number of data-backed malaria information materials (dashboards, bulletins, profiles, stratification maps) developed	Activity reports	Annually	NMP, Counties
	Output			
	Number of counties with CHMT and SCHMTs trained in use of KHIS and dashboards	Activity reports	Annually	NMP, Counties, Partners
	Outcome			
	Proportion of counties able to generate malaria data-backed information materials, interpret them, and use the information for decision-making	Activity reports	Annually	NMP, Counties, Partners
	Input			

Goals/Strategies	Indicators	Data source	Frequency	Responsible
Strategy 5.6: Track and disseminate malaria operational research findings to inform programming	Updated research agenda	Programme reports	Annually	NMP, Partners
	Database of malaria research studies			
	Process			
	Number of meetings held to update research agenda	Activity reports	Annually	NMP, Partners
	Number of operational research COE meetings held	Activity reports	Quarterly	NMP
	Output			
	Proportion of operational research studies completed	Activity reports	Annually	NMP, Partners
	Number of stakeholders engaged during the malaria forums	Activity reports	Biennial	NMP, Partners
	Outcome			
	Number of operational research findings used for programming	Activity reports	Annually	NMP, Partners
Objective 6: To interrupt indigenous malaria transmission in four targeted counties by 2027/2028				
Strategy 6.1: Strengthen programme capacity for malaria elimination at all levels	**Input**	Programme reports	Annually	NMP, Counties, and Partners
	Amount of funds available for malaria elimination			
	Staff in malaria elimination unit and counties		Once	
	National and county annual work plans, guidelines, training curricula, and standard operating procedures for malaria elimination			
	Process			
	Number of national malaria elimination COE meetings held	Activity reports	Quarterly	NMP
	Number of county malaria technical working group meetings held	Activity reports	Quarterly	NMP, Counties
	Malaria readiness assessment conducted	Activity reports	Once every three years	NMP
	Output			

Goals/Strategies	Indicators	Data source	Frequency	Responsible
	Proportion of health facilities with at least one health worker mentored on malaria elimination	Activity reports	Quarterly	NMP, Counties
	Outcome			
	Proportion of health workers in the target counties with adequate knowledge on malaria elimination (KAP score greater than 80 percent)	Malaria elimination readiness assessment report	Quarterly	NMP, Counties
Strategy 6.2: Operationalize case-based surveillance and response in targeted counties	**Input**			
	Amount of funds available for setting up a case-based surveillance system	Activity reports	Annually	NMP, Counties, and Partners
	Tablets, tools, standard operating procedures, job aids, airtime, internet connectivity			
	IRS chemicals and spraying equipment			
	Entomological surveillance items			
	Human resource for IRS spraying and entomological surveillance			
	Process			
	Case-based surveillance system established	Activity reports	Annually	NMP, Counties, and Partners
	Proportion of targeted health facilities with at least one health worker trained on malaria elimination			
	Malaria baseline and annual stratification conducted	Stratification maps	Annually	NMP, Counties, and Partners
	Output			
	Number of targeted counties using the case-based surveillance system	Case-based surveillance	Quarterly	NMP, Counties
	Outcome			
	Proportion of confirmed malaria cases notified within 24 hours	Case-based surveillance	Quarterly	NMP, Counties
	Proportion of malaria cases investigated within 72 hours			

Goals/Strategies	Indicators	Data source	Frequency	Responsible
	Proportion of malaria foci responded within seven days			
Strategy 6.3: Foster multi-sectoral collaboration and promote risk communication and community engagement	**Inputs**			
	Amount of funds for malaria elimination SBC activities	Programme reports	Annually	NMP, Counties
	Malaria elimination messages			
	Process			
	Number of meetings on malaria elimination held with national and county health leadership, including governors	Activity reports	Annually	NMP, Counties, and Partners
	Number of meetings held with non-state actors, partners and other stakeholders			
	Number of CHMTs engaged on malaria elimination agenda	Activity reports	Annually	NMP, Counties
	Output			
	Malaria elimination included in county health annual work plans	Activity reports	Annually	Counties
	Outcome			
	Number of malaria elimination champions	Activity reports	Annually	NMP, Counties
Objective 7: To strengthen leadership, management, governance, sustainable financing, and commodity security for effective malaria programming at all levels				
Strategy 7.1: Strengthen leadership and governance structures at all levels for the delivery of the strategy	**Input**			
	Guidelines and tools developed	Activity reports	Annually	NMP, Counties
	Process			
	Number of trainings conducted	Activity reports	Annually	NMP, Counties
	Mentorship and coaching sessions conducted	Activity reports	Annually	NMP, Counties
	Output			
	Revised organogram	Activity reports	Annually	NMP, Counties

Goals/Strategies	Indicators	Data source	Frequency	Responsible
	Outcome			
	NMP organisational capacity assessment score	OCA reports	Biennially	NMP, Counties
	Proportion of established positions filled with appropriate staff, disaggregated by sex	Human resource reports	Annually	NMP, Counties
Strategy 7.2: Ensure 100 percent availability of appropriate malaria commodities through effective supply chain management at levels	**Input**			
	Amount of funds available for PSM	Programme reports	Annually	NMP
	Guidelines, standard operating procedures, and job aids	Commodity management handbook	Annually	NMP
	Quantification and supply plan	Quantification reports	Annually	NMP, Partners
	Availability of reporting and ordering tools	Activity reports	Monthly	NMP, Counties
	Process			
	Number of commodity security meetings held	Activity reports	Biannually	NMP, Counties, and Partners
	Availability of malaria pipeline monitor	Activity reports	Monthly	NMP, Partners
	Reports of post-market, active, and passive surveillance of adverse drug reactions	Activity reports	Biennially, quarterly	NMP, PPB, and Partners
	Output			
	Proportion of malaria commodities with confirmed quality issues	Activity reports	Biannually	NMP, Counties
	Proportion of commodities received and delivered as per supply plan	Supply plan	Annually	NMP
	Proportion of sampled malaria commodities that comply with regulator's registered specifications	Activity reports	Annually	NMP, PPB
	Number of adverse drug reactions reported	Adverse drug reaction reports	Quarterly	NMP, PPB
	Outcome			

Goals/Strategies	Indicators	Data source	Frequency	Responsible
	Proportion of public health facilities reporting stock-out at the end of the month of key malaria commodities	Routine surveillance	Monthly	NMP, Counties
	Artemether-Lumefantrine			
	Injectable artesunate			
	Sulfadoxine-Pyrimethamine			
	mRDTs			
	LLINs			
	Proportion of key malaria commodities forecasted within ±25 percent forecast error (composite of eight items: AL – all sizes, injectable artesunate, mRDT, Sulfadoxine-Pyrimethamine, LLINs)	Malaria pipeline monitor, routine surveillance	Monthly	NMP, Counties
Strategy 7.3: Secure at least 80 percent of required funding for the costed KMS through diversified resource mobilisation initiatives	**Input**			
	Amount of funds available for resource mobilisation	Programme reports	Annually	NMP
	Process			
	Resource mobilisation concept papers developed	Activity reports	Annually	NMP, Counties
	Output			
	Number of high-level advocacy meetings held for resource mobilisation	Activity reports	Annually	NMP, Counties
	Funding agreements and memorandum of understanding signed	Activity reports	Annually	NMP, Counties
	Outcome			
	Proportion of funding mobilised to KMS costed need, disaggregated by source	Programme review reports	Annually	NMP, Counties
	Proportion of resources spent to available resources	Programme review reports	Annually	NMP
	Input			

Goals/Strategies	Indicators	Data source	Frequency	Responsible
Strategy 7.4: Strengthen stakeholder collaboration and coordination for improved malaria programming	Amount of funds available	Programme reports	Annually	NMP
	Infrastructure, equipment, and consumables			
	Process			
	Stakeholder database available	Activity reports	Quarterly	NMP
	Output			
	Number of stakeholder meetings held	Activity reports	Quarterly	NMP
	Outcome			
	Proportion of malaria health sector working group and COE members participating in respective meetings	Activity reports	Quarterly	NMP
Strategy 7.5: Achieve at least 80 percent of malaria programme performance	**Input**			
	Annual wok plans developed	Programme reports	Annually	NMP
	Process			
	Number of meetings held	Activity reports	Quarterly	NMP
	Output			
	Number of programme review meeting reports available	Activity reports	Quarterly	NMP
	Outcome			
	Proportion of activities in the annual malaria workplan implemented as planned	Programme review reports	Quarterly	NMP
	Proportion of GER mainstreaming activities	Programme review reports		
	Proportion of counties implementing at least 75 percent of the malaria activities in their annual work plans, in line with the KMS	Activity reports	Quarterly	NMP, Counties
	Input			
	Amount of funds available for climate change initiatives	Activity reports	Annually	NMP

Goals/Strategies	Indicators	Data source	Frequency	Responsible
Strategy 7.6: Strengthen resilience and climate change adaptability for malaria programming	Government policies and regulations supporting malaria control and climate change adaptation developed			
	Process			
	Number of skilled personnel including researchers, public health workers, and community health volunteers trained in climate change and malaria	Activity reports	Annually	NMP
	Climate data available in KHIS			
	Output			
	Number of information products integrating malaria and climate data	Activity Reports	Annually	NMP, Counties, and Partners
	Outcome			
	Number of climate change adaptation strategies implemented	Activity reports	Annually	NMP, Counties, and Partners

Annex 5: Definition of select impact and outcome indicators

Goal/Objective	Indicator	Definition	Data source
To reduce malaria incidence by at least 80 percent of the 2023 levels by 2027/28	Total confirmed malaria cases (per 1,000 persons per year)	N: Number of outpatient malaria cases confirmed by microscopy or mRDT reported by health facilities per year D: Total population per 1,000 persons	Routine surveillance
To reduce malaria deaths by at least 90 percent of the 2023 levels by 2027/28	Total malaria deaths (per 100,000 persons per year)	N: Total number of malaria deaths due to confirmed malaria D: Total population per 100,000 persons	Routine surveillance, Civil Registration and Vital Statistics
To interrupt indigenous malaria transmission in selected counties by 2027/2028	Number of counties with zero indigenous malaria cases	Number of counties confirmed to have zero indigenous malaria cases through case-based surveillance	Case-based surveillance
Objective 1: To ensure universal coverage of appropriate vector control interventions in all populations at risk of malaria	Proportions of households with universal coverage of LLINs in malaria risk areas	N: Number of households with universal coverage (at least one LLIN for every two people) D: Total number of households surveyed	PMLLIN, KMIS
	Proportion of population in targeted areas protected through IRS within the last 12 months	N: Number of persons in targeted areas protected by IRS D: Total population at risk in targeted areas	IRS campaign activity reports
	Percent reduction in larval density in habitats targeted for LSM	N: Larval density before LSM **minus** larval density after LSM (in targeted habitat) D: Larval density before LSM (in targeted habitat) *Larval density is defined as the number of immature Anopheles vectors collected per dip*	Entomological surveillance

Goal/Objective	Indicator	Definition	Data source
	Annual entomological inoculation rate	[Human biting rate x sporozoite rate from human landing catches] OR [vector density x human biting rate x sporozoite rate based on CDC light trap collection]	Entomological surveillance
Objective 2: To ensure optimum coverage of malaria chemoprevention interventions and vaccines in eligible populations	Proportion of eligible pregnant women in targeted counties who received three or more doses of IPTp during their last pregnancy	N: Number of pregnant women who received three or more doses of IPTp to prevent malaria during their last pregnancy that led to a live birth (within the last two years) D: Total number of women surveyed who had a live birth in the last two years	Household surveys
	Confirmed malaria cases as a percentage of total outpatient attendance among children under-five in areas where SMC has been implemented	N: Number of confirmed malaria cases among children under-five at facilities in targeted areas D: Total number outpatient attendance of children under-five at the facilities in targeted areas	Routine surveillance, SMC activity reports
	Proportion of the eligible population vaccinated with fourth dose of malaria vaccine	N: Number of children who received 4th dose of malaria vaccine D: Total number of age-eligible children in the population	National Vaccine Programme reports
Objective 3: To ensure all malaria cases are managed according to the national diagnosis, treatment, and prevention guidelines	Proportion of suspected malaria cases presenting to public health facilities managed in accordance with the Kenya malaria treatment guidelines	N: Total number of suspected malaria cases sampled at **public health facilities** managed in accordance with the Kenya malaria treatment guidelines D: Total number of suspected malaria cases sampled	Health facility assessment reports
	Proportion of suspected malaria cases presenting to private facilities managed in accordance with the Kenya malaria treatment guidelines	N: Total number of suspected malaria cases sampled **at private health facilities** managed in accordance with the Kenya malaria treatment guidelines D: Total number of suspected malaria cases sampled	Health facility assessment reports

Goal/Objective	Indicator	Definition	Data source
	Proportion of suspected malaria cases presenting to public health facilities tested with mRDT or microscopy	N: Patients tested for malaria at **public health facilities** (mRDT or microscopy) D: Total suspected malaria cases that presented to the **public health facilities**	Routine surveillance
	Proportion of suspected malaria cases presenting to private facilities tested with mRDT or microscopy	N: Patients tested for malaria at **private health facilities** (mRDT or microscopy) D: Total suspected malaria cases that presented to the **private health facilities**	Routine surveillance
	Proportion of suspected malaria cases presenting to CHPs in targeted areas tested with mRDT	N: Total number of suspected malaria cases presenting to a CHP tested with mRDT D: Total number of suspected malaria cases presenting to CHPs	Routine surveillance
	Proportion of parasitologically confirmed malaria cases presenting to public facilities who received artemisinin-based combination therapy	N: Number of malaria cases treated with artemisinin-based combination therapy (at **public health facilities**) D: Number of confirmed malaria cases (from **public health facilities**)	Routine surveillance
	Proportion of parasitologically confirmed cases presenting to targeted private facilities who received artemisinin-based combination therapy	N: Number of malaria cases treated with artemisinin-based combination therapy (at **private health facilities**) D: Number of confirmed malaria cases (from **private health facilities**)	Routine surveillance
	Proportion of parasitologically confirmed cases presenting to CHPs who received artemisinin-based combination therapy	N: Number of malaria cases treated with artemisinin-based combination therapy (**at community level**) D: Number of confirmed malaria cases (**from community leve**l)	Routine surveillance
	Malaria case fatality rate	N: Total number of inpatient (severe) malaria cases admitted who died in health facilities D: Total number of inpatient (severe) malaria cases admitted in health facilities	Routine surveillance

Goal/Objective	Indicator	Definition	Data source
	Proportion of laboratories performing malaria microscopy enrolled in external quality assurance program	N: Number of health facilities with laboratories performing malaria microscopy enrolled in external quality assurance program D: Total number of health facilities with laboratories performing malaria microscopy	Activity reports
Objective 4: To ensure optimal utilisation of malaria interventions	Proportion of the population in malaria risk areas who slept under an LLIN the night before the survey	N: Number of individuals who slept under an LLIN the night before the survey D: Total number of individuals (residents and visitors) who spent the previous night in surveyed households	KMIS, MBS, KDHS, and PMLLIN
	Proportion of population using LLIN among households with universal coverage	N: Number of individuals who slept under an LLIN the night before the survey in households with universal coverage of LLIN D: Total number of individuals who spent the previous night in surveyed households with universal coverage of LLIN *Universal coverage means having at least one LLIN for every two people in the household*	KMIS, MBS, KDHS, and PMLLIN
	Proportion of children under-five with fever in the last two weeks for whom advice or treatment was sought within 24 hours from the onset of fever	N: Number of children under-five with fever in the last two weeks for whom advice or treatment was sought within 24 hours from the onset of fever D: Total number of children under-five with fever in the last two weeks	KMIS, MBS, KDHS, and PMLLIN
	Proportion of the population with comprehensive knowledge on malaria	Composite score on comprehensive knowledge, as defined and reported in MBS	KMIS, MBS
Objective 5:	Proportion of expected health facility reports received on time	N: Number of expected health facility reports received on time	Routine surveillance

Goal/Objective	Indicator	Definition	Data source
To strengthen malaria surveillance and generation of evidence for decision-making		D: Total number of expected health facility reports	
	Proportion of health facilities reporting quality malaria data (threshold greater than 90 percent and less than 110 percent)	N: Number of health facilities whose data quality was rated greater than 90 percent and less than 110 percent in the malaria data quality assessment D: Total number of health facilities assessed	Routine malaria data quality assessment
Objective 6. To interrupt indigenous malaria transmission in four targeted counties by 2027/2028	Proportion of confirmed malaria cases notified within 24 hours	N: Number of confirmed malaria cases in the targeted counties notified within 24 hours D: Total number of confirmed malaria cases in the targeted counties	Case-based surveillance
	Proportion of malaria cases investigated within 72 hours	N: Number of malaria cases in targeted counties investigated within 72 hours D: Total number of malaria cases in targeted counties	Case-based surveillance
	Proportion of malaria foci responded to within seven days	N: Number of malaria foci investigated within seven days D: Total number of malaria transmission foci identified and mapped	Case-based surveillance
	Proportion of health workers in the targeted counties with adequate knowledge on malaria elimination	Composite score on adequate knowledge, as defined and reported in the malaria elimination readiness assessment	Malaria elimination readiness assessment report
Objective 7: To strengthen leadership, management, governance, sustainable financing, and commodity security for effective malaria programming at all levels	NMP OCA score	Overall score for NMP across all the assessment areas in the OCA tool	OCA reports
	Proportion of established positions filled with appropriate staff, disaggregated by sex	N: Number of positions in NMP organogram filled by staff with the right qualification D: Total number of positions in the NMP organogram	Human resource reports

Goal/Objective	Indicator	Definition	Data source
	Proportion of activities in the annual malaria workplan implemented as planned	N: Number of activities implemented according to plan D: Number of activities in the annual workplan	Programme review reports
	Proportion of GER mainstreaming activities implemented	N: Number of GER activities implemented as planned each year D: Total number of GER activities in the annual workplan	Programme review reports
	Proportion of funding mobilised to KMS costed need, disaggregated by source	N: Amount of resources mobilised (disaggregated by source) D: Total amount required for strategy implementation	Programme review reports
	Proportion of public health facilities reporting stock-out of key malaria commodities		
	All Artemether-Lumefantrine	N: Number of health facilities that reported stock-outs of the respective malaria commodity (either all AL, injectable artesunate, Sulfadoxine-Pyrimethamine tabs, mRDTs, LLINs) D: Total number of health facilities that submitted reports *Sulfadoxine-Pyrimethamine tabs indicator is specific to the counties where IPTp is implemented.*	Routine surveillance
	Injectable artesunate		
	Sulfadoxine-Pyrimethamine tabs		
	mRDTs		
	LLINs		
	Proportion of key malaria commodities forecasted within ±25 percent forecast error (composite of eight items: AL – all sizes, injectable artesunate, mRDT, Sulfadoxine-Pyrimethamine, LLINs)	N: Number of key malaria commodities meeting the forecast threshold D: Total number of key malaria commodities forecasted (AL – all sizes, injectable artesunate, mRDT, Sulfadoxine-Pyrimethamine, LLINs)	Malaria pipeline monitor, routine surveillance

Annex 6: Data use plan

Programmatic Questions	Indicator (Impact/Outcome)	Data source	Timeline for analysis	Proposed decisions	Decision maker	Communication channel
GOAL **1. To reduce malaria incidence by at least 80 percent and deaths by at least 90 percent of the 2023 levels by 2027/28** **2. To interrupt indigenous malaria transmission in selected counties by 2027/2028**						
What is the level of achievement in reducing malaria mortality and morbidity in the country?	Total malaria cases (per 1,000 persons per year) Total malaria deaths (per 100,000 persons per year) Malaria case fatality rate	Routine surveillance, Civil Registration and Vital Statistics	Annually	Inform targeting of malaria interventions; Improve reporting; Inform development of national and sub-national malaria profiles; Advocate for funding;	Head NMP, Head Department of Preventive and Promotive Health, Partners	Surveillance bulletins, Survey reports, policy briefs, world malaria report, malaria profile maps
Has the country managed to interrupt local transmission of malaria in target regions?	Number of counties with zero indigenous malaria cases	Case-based surveillance	Annually			
Objective 1: To ensure universal coverage of appropriate vector control interventions in all populations at risk of malaria						
What is the level of LLIN coverage among households in malaria risk areas?	Proportion of households with universal coverage of LLINs in malaria risk areas	Household surveys	3—5 years	Inform LLIN distribution	Head NMP, CHMTs	Activity reports; survey report, county-specific briefs, review meetings, policy briefs, world malaria report
What is the level of IRS coverage in targeted areas?	Proportion of population in targeted areas protected through IRS within the last 12 months	IRS campaign activity reports	Annually	Inform targeting of malaria interventions, advocate for funding	Head NMP, CHMTs	
Are there substantial changes in malaria entomology in Kenya?	Percent reduction in larval density in habitats targeted for LSM Annual entomological inoculation rate	Entomological surveillance	Annually	Inform application of malaria prevention interventions	Head NMP, Head Department of Preventive and Promotive Health, and Partners	
Objective 2: To ensure optimum coverage of malaria chemoprevention interventions and vaccines in eligible populations						
Are pregnant women in targeted areas receiving recommended doses of IPTp?	Proportion of **eligible** pregnant women who receive three or more doses of IPTp during their last pregnancy	Household surveys	3—5 years	Enhance linkages between health facility and community; improve uptake of IPTp and related reporting	Head NMP, CHMTs	Survey report, county-specific briefs, and review meetings

Is seasonal malaria chemoprevention achieving the intended outcome?	Confirmed malaria cases as a percentage of outpatient attendance among all children under-five in areas where SMC has been implemented	Routine surveillance, SMC activity reports	Annually	Inform scale-up of the SMC intervention	Head NMP, CHMTs, and Partners	Operational research reports, review meetings
How successful is the uptake of malaria vaccine among the target population?	Proportion of the eligible population vaccinated with fourth dose of malaria vaccine	National Vaccine Programme reports	Annually	Ensure adequate supply of the malaria vaccine, conduct requisite advocacy for uptake of the vaccine	Head NMP, Head National Vaccine Program, and CHMTs	Activity reports, review meetings
Objective 3: To ensure all malaria cases are managed according to the national diagnosis, treatment and prevention guidelines						
Are malaria patients managed according to the Kenya malaria case management guidelines at all levels and in all sectors?	Proportion of suspected malaria cases presenting to public and private health facilities managed in accordance with the Kenya malaria treatment guidelines	Health facility assessment reports, routine surveillance	Biannually	Train or mentor health workers on malaria case management; ensure no stock-outs of key malaria diagnostics and medicines; provide updated case management guideline;	Head NMP, CHMTs	Survey report, surveillance bulletins, review meetings, policy briefs
	Proportion of suspected malaria cases presenting to public and private health facilities, and to CHPs tested with mRDT or microscopy					
	Proportion of parasitologically confirmed malaria cases presenting to public and private facilities and to CHPs who received artemisinin-based combination therapy					
Is the quality of malaria diagnostics across the country assured?	Proportion of laboratories performing malaria microscopy enrolled in external quality assurance program	Activity reports	Annually	Train health workers on malaria microscopy competencies; ensure continuous evaluation of the facilities through external quality assurance program	Head NMP, CHMTs, and Head National Malaria Reference Laboratory	Activity reports, review meetings
Objective 4: To ensure optimal utilisation of malaria interventions						
What is the level of LLIN use among the targeted population?	Proportion of the population in malaria risk areas who slept under an LLIN the night before the survey	Household surveys, KMIS, MBS, KDHS, and PMLLIN	3—5 years	Strengthen SBC to increase net use, inform LLIN distribution; Advocate for resources	Head NMP, CHMTs, and Partners	Survey report, county-specific briefs, and review meetings
	Proportion of population using LLIN among households with universal coverage					

What is the level of knowledge on malaria prevention, diagnosis, and treatment among the targeted population?	Proportion of children under age five with fever in the last two weeks for whom advice or treatment was sought within 24 hours Proportion of the population with comprehensive knowledge on malaria	Household surveys, KMIS, MBS, KDHS, and PMLLIN	3—5 years	Design appropriate messages to increase knowledge on malaria prevention, diagnosis, and treatment	Head NMP, CHMTs, and Partners	Survey reports, review meetings
Objective 5: To strengthen malaria surveillance and generation of evidence for decision making						
What is the quality of malaria surveillance data reported by health facilities?	Proportion of expected health facility reports received on time Proportion of health facilities reporting quality malaria data (threshold greater than 90 percent and less than 110 percent)	Routine surveillance, data quality assessment reports	Monthly; Quarterly	Ensure quality reporting, build data quality assessment capacity for counties, advocate for resources for HIS	Head NMP, IDSR unit, CHMTs, sub-counties, and health facility in-charges	Data quality assessment reports, review meetings
Objective 6: To interrupt indigenous malaria transmission in four targeted counties by 2027/2028						
What is the capacity for case-based surveillance in the target counties? Is the level of response to confirmed cases adequate?	Proportion of confirmed malaria cases notified within 24 hours Proportion of malaria cases investigated within 72 hours Proportion of malaria foci responded to within seven days	Case-based surveillance	Quarterly	Enhance training of health workers on case-based surveillance and response, avail the requisite notification and reporting tools, advocate for financial resources	Head NMP, CHMTs, and health facility in-charges	Cased-based surveillance reports, review meetings
How engaged are health workers in the malaria elimination effort?	Proportion of health workers in the target counties with adequate knowledge on malaria elimination (KAP Score > 80%)	Elimination readiness assessment	Once every three years	Training and sensitization of health workers on malaria elimination	Head NMP, CHMTs	Survey report, review meetings
Objective 7: To strengthen leadership, management, governance, sustainable financing, and commodity security for effective malaria programming at all levels						
Does the programme have the capacity to implement the requisite malaria interventions to achieve intended goals and outcomes?	NMP Organisational Capacity Assessment (OCA) score Proportion of established positions filled with appropriate staff, disaggregated by sex	OCA reports, human resource reports, programme review reports	Annually	Ensure the programme has adequate and appropriate technical capacity; advocate for financial resources; plan for requisite capacity building at all levels	Head NMP, CHMTs, and Partners	Survey reports, activity reports, program review meetings

	Proportion of activities in the annual malaria workplan implemented as planned					
	Proportion of funding mobilised to KMS costed need, disaggregated by source					
Are all population sub-groups, including the most vulnerable, reached with malaria interventions?	Proportion of GER mainstreaming activities implemented	Programme review reports		Ensure implementation of GER activities; advocate for financial resources	Head NMP, CHMTs, and Partners	Activity reports, review meetings
Is there adequate supply of essential health commodities for malaria prevention, control, and treatment?	Proportion of public health facilities reporting stock-out of key malaria commodities	Routine surveillance, health facility assessment reports	Monthly	Ensure uninterrupted supply of malaria commodities; inform forecasting and quantification; improve uptake of malaria interventions;	Head NMP, IDSR unit, CHMTs, sub-counties, and health facility in-charges	Survey report, county-specific briefs, review meetings
	All Artemether-Lumefantrine (AL)					
	Injectable artesunate					
	Sulfadoxine-Pyrimethamine tabs		Annually			
	mRDTs					
	LLINs