The Republic of Uganda

MID TERM REVIEW OF THE UGANDA MALARIA REDUCTION STRATEGIC PLAN 2014-2020

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EXECUTIVE SUMMARY

Malaria Burden

Malaria remains a serious public health problem in Uganda, accounting for 4% of the global malaria cases. Malaria is endemic in nearly all of Uganda where it is responsible for 30-50% of outpatient visits, 15-20% of hospital admissions and up to 20% of inpatient deaths. Despite this heavy burden, significant progress has been made over the recent past due to the substantial investment in malaria control. Reported malaria cases declined nearly 45% from about 16,000,000 in 2013 to 8,820,000 in 2016, with parasite prevalence in children <5-years reduced from 42% in 2009 to 19% in 2014. *These gains are however fragile as evidenced by* malaria resurgence in 2016, especially in Northern Uganda.

The Uganda Malaria Reduction Strategic Plan 2014 - 2020

In 2014, the Ministry of Health (MOH) and Partners developed the Uganda Malaria Reduction Strategic Plan (UMRSP) 2014-2020 that was to provide a common framework for all stakeholders to accelerate nationwide scale up of evidence-based interventions for malaria reduction. Three goals were set for the UMRSP; by 2020, reduce annual malaria deaths from the 2013 levels (30 per 100,000) to less than 1 death per 100,000 population, reduce malaria morbidity from 150 to 30 cases per 1,000 population, and reduce malaria parasite prevalence (by microscopy) from 19% to less than 7%. The UMRSP was to be implemented at different levels of the health care system operating under the principle of 3 "ones" - one strategic plan, one Coordination mechanism and one M&E plan. It also intended to strengthen "bottom-up" approaches to foster decentralization of service delivery at district level to increase efficiency and effectiveness of interventions with increased community level engagement and ownership.

The Mid Term Review process

This Mid-Term Review (MTR) is to assess, if the intended implementation approaches and delivery of interventions are on course to meet the stated goals and objectives, allowing NMCP and partners review strategies and approaches deployed, and their effectiveness to achieve the desired impact. The MTR has been a participatory and consultative process involving all malaria stakeholders led by NMCP working through the 3 phases of Planning, Thematic Desk Review and Validation field visits and consultations. The findings of the MTR will be used to generate the action points for programme strengthening and will guide the execution of interventions and approaches for the remaining period of the strategic plan to 2020.

Key Achievements at Mid-term

At the mid-point of implementation of the UMRSP in 2017, while a decline in deaths attributed to malaria has been observed (with the reported malaria mortality being 13 deaths per 100,000 population, which is below the mid-point target of 15 deaths per 100,000 population), malaria incidence seems to be rising especially between 2015 and 2016. Also the initial decline observed in malaria parasite prevalence among children under 5 from 2009 to 2014 seems to have stagnated between 2014 and 2016 at about 30% measured using rapid diagnostic tests.

There has however been increased deployment of LLINs as the key vector control method following successful completion of two universal coverage campaigns in 2014 and in 2017. Also, there has been increased availability of malaria case management commodities (ACTs and RDTs) as evidenced by declining stock outs of ACTs from 15% in 2013 to 8% in 2017, and RDTs stock out now stands at only 3%. Of concern though is the very high volume of ACTs procured and distributed; over 30 million ACT doses distributed against 14 million reported cases in the public sector, pointing to both poor quantification and challenges with supply chain management at all levels. The review found that the intended decentralized approach to delivery of malaria interventions has not happened as planned, with majority of interventions remaining centrally planned and implemented with limited involvement of districts and regional level structures. During the review period, government elevated the NMCP to a division led by an Assistant Commissioner and the overall human resource capacity at NMCP has increased as a result of implementation of the Capacity Development Plan supported by development partners. This is a positive step in keeping with previous recommendations to elevate NMCP to a Department level to be headed by a Commissioner.

Enablers and constraints to implementation of the UMRSP

The following factors have been observed to positively impact performance of the programme:

1. **Policies and guidelines**: since 2014, there has been improvement in the availability of policies and guidelines at the national and sub-national levels. These guidelines have been very useful especially for the health staff at the district level where malaria services are delivered to the population.
2. **Human resources**: During this period of implementation there has been an improvement in the human resource capacity of NMCP provided by both government and partners. Most of the positions have been filled that enabled the program to deliver malaria related services to the population. Continuous capacity building by both government and partners further enhanced the capacities of staff at all levels.
3. **Procurement of malaria commodities**: The performance of the programme has been enhanced by the improved procurement and availability of malaria commodities like LLINs, RDTs, and ACTs.

Major constraints to implementation of planned activities and achievement of intended results were the following:

1. **Limited expansion of IRS:** While the UMRSP expected rapid expansion of IRS from 10 to 50 districts as a measure to rapidly interrupt malaria transmission; limited funding and increased insecticide resistance has affected this expansion, restricting IRS to only 14 districts financed by development partners, PMI and UKAID/DFID.
2. **Attitude, practice and perceptions:** There is poor attitude and practice amongst health workers and communities on malaria where individuals assume malaria as a simple illness and thus not seek care promptly, while health workers neglect to emphasize interpersonal communication with their clients to reinforce malaria prevention and control services, and poorly adhere to guidelines.
3. **Implementation framework:** There is poor adherence to and operationalization of a decentralized implementation approach coupled with weaknesses in multi-sectoral and partner coordination.

4. **Limited funding for non-commodity items:** There is limited funding for non-commodity items. Findings from the budget analysis revealed that only 12% of the budget was allocated for non-commodity items. This may have affected the delivery and uptake as well as supervision and monitoring of the interventions.
5. **Mechanism to enforce adherence to guidelines:** There is little or no dissemination and enforcement mechanism for adherence to prevention and treatment guidelines by health workers especially at the lower facilities.
6. **Sustainability of interventions:** Findings from the budget analysis revealed that about 88% of the budget is mainly for commodities and is donor funded. There is growing fear about the sustainability of the current interventions if donor support is reduced.
7. **Refugees:** The complex emergency resulting from the influx of refugees to Uganda in the last 2-3 years has further constrained the already limited resources available to health as this population tends to have increased vulnerability to malaria.

Main Conclusions

- While the current interventions and strategies have been effective in attaining mortality reduction attributed to malaria at mid-term; the UMRSP targets for reducing malaria morbidity were not met. Continuing to implement the current malaria prevention and control interventions at the present scope and scale may not reduce the malaria morbidity to the 2020 UMRSP targets.
- The scope and scale of integrated vector control management (IVM) interventions – limited coverage of IRS, stagnating LLIN coverage - are likely not to have impact in interrupting malaria transmission and hence reduction in malaria incidence.
- While there is increased availability of malaria case management commodities especially in the public sector, the poor coordination between MOH, NMS, districts and facilities affects the proper management of these commodities leading to both overstocks and under-stocks of ACTs in facilities.
- There is heavy reliance on mass media approaches, which are known to increase awareness among the population with limited impact on behavior change.
- The available information in the DHIS2 is under-utilized, as it is not routinely analyzed at all levels to inform planning and decision-making.
- While the NMCP has the 6-year strategic plan in place there is no 3-year business plan and annual plans to operationalize the strategic plan leading to poor tracking of implementation of the strategies, difficulty harmonizing partner annual work plans and lack of annual performance plans for units and staff of NMCP.

Key Recommendations and Action Points

1. To sustain the gains in reducing malaria mortality, MOH and partners should promote integrated program approach and strengthen health care delivery system to ensure at all levels: prompt diagnosis, appropriate treatment, tracking and timely referral as and when required.

2. Based on the positive lessons learned from the limited IRS programmes, MoH and partners should prioritize IRS in hot spot districts while rolling out across a wider geographic coverage in a cost effective manner to rapidly reduce vector density and transmission with a clear plan for sustainability of the gains upon exit.

3. NMCP should urgently develop and implement a plan for mass action against malaria using and engage multi-sectoral approach at individual, household, community, district, institutional, national and international level; to create a mass movement against malaria in line with the framework for "malaria smart" families and communities, for zero malaria death by 2020 and a malaria free Uganda by 2030. Among others, the following initiatives should be prioritized: a) Mass Action Against Malaria; and b) Uganda Parliamentary Forum for Malaria (UPFM)- a community that serves as advocates for political, legislative and community action for a malaria free Uganda

4. NMCP cannot fully implement UMRSP planned activities without adhering to the principles of decentralization and the full operationalization of the intended decentralized service delivery at district level. NMCP should therefore focus on its core mandate of providing national policy and guidelines, resource mobilization, coordination, quality assurance and empower districts to lead activity implementation. Touchdown model to decentralize National Malaria Control Program to the District levels towards reaching every households should be operationalized. Under this arrangement, NMCD staff members will be assigned to empower and coordinate malaria action in clusters of districts in the 14 Uganda regions, in line with Regional Referral Hospital catchment areas.

5. In order to maintain and sustain the gains of mass LLIN campaigns, the. MOH/NMCD and its partners should explore the feasibility and utilization of additional channels such as routine distribution of LLINs in day-schools, community distributions in special or humanitarian circumstances like in Refugees settlements and host communities.

6. MOH and NMCD should streamline the quantification, distribution and tracking of malaria intervention commodities with National Medical Stores for efficient and effective supply chain management . The efficiency gains from implementation of this recommendation will support other program intervention areas to achieve the UMRSP goals. District specific quantifications should be promoted while real time tracking system should be established.

7. NMCD should ensure that coordination mechanisms within the program and MOH, with partners, related sectors and sub-national entities are strengthened; progress reports are regularly generated and program information used to support planning and decision-making.

8. NMCP and partners should streamline and harmonize planning processes to ensure that resources are adequately mobilized, properly allocated and effectively utilized to attain set targets.

ACKNOWLEDGEMENTS

The completion of this mid-term review of the 2014-2020 Uganda Malaria Reduction Strategic Plan(UMRSP) would not have been possible without the technical and financial support provided by World Health Organization country office and WHO/AFRO Inter-Country Support Team, the Global Fund, the US President's Malaria Initiative, UKAID/DFID and other RBM partners. The Government of Uganda extends its appreciation to these organizations.

I would like to extend a word of thanks to all the staff of the NMCP led by the Programme Manager – Dr. Jimmy Opigo and the Mid Term Review Coordinator – Bosco Agaba, and all the malaria stakeholders who endeavoured to spend their valuable time over a period of one month to participate in the thematic working groups that reviewed the UMRSP as well as in the national and district validation consultations, and provided input into the strategic direction for the remaining timeframe of the UMRSP.

I thank the WHO external reviewers – Drs. Ritha Njau, Nathan Bakyaita, Lynda Ozor and Wilfred Dodoli for generously availing their time to be in Uganda to support the review process as well as the national Consultants – Drs. Patrick Okello, Seraphine Adibaku and Fred Roland Muwanika for the hard work well done in taking the review to a successful conclusion.

It is my conviction that this MTR process has clarified to all of us what strengths to ride on, opportunities to seize, weaknesses to address and threats to mitigate, but most importantly, what needs to be done differently and innovatively going forward to accelerate progress in moving towards a "malaria-free" Uganda.

I thank you all.

Dr. Diana Atwine
Permanent Secretary

FOREWORD

Malaria remains a serious public health problem in Uganda. According to the World Health Organization World Malaria Report 2016, Uganda accounted for 4% of the 220,500,000 global malaria cases. Malaria transmission is stable in 95% and unstable and therefore prone to epidemics in 5% of the country. Malaria accounts for 30-50% of outpatient visits, 15-20% of hospital admissions and up to 20% of inpatient deaths.

Malaria poses serious social-economic impact on individual households as well as on the national economy in general due to lost workdays because of sickness, decreased productivity, poor cognitive development in children and decreased school attendance. A single episode of malaria costs a family on average 9 US dollars, or 3% of annual income. A poor family may spend up to 25% of the household income on malaria prevention and treatment. Workers suffering from malaria may be unable to work for an estimated 5-20 days per episode. Industries and agriculture suffer due to loss of person-hours and decreased worker productivity while the country loses foreign direct investment as investors shy away from investing in countries where malaria rates are high.

Despite this heavy burden, significant progress has been made over the recent past due to the substantial investment in malaria control. Reported malaria cases declined nearly 45% from about 16,000,000 in 2013 to 8,820,000 in 2016. Confirmatory testing rate for suspected malaria has risen to 88% (HMIS 2016) and nearly 87% of children with malaria accessed ACTs (UDHS 2016). National LLIN coverage has improved with 65% of households having one LLIN for every two persons. Parasite Prevalence in children <5-years reduced from 42% in 2009 to 19% in 2014. However, these gains have been threatened by malaria resurgence in the country, especially in Northern Uganda.

The mid-term review of the Uganda Malaria Reduction Strategic Plan (UMRSP) 2014 to 2020 assessed implementation progress, challenges encountered, lessons learned and proposes an appropriate strategic direction for Uganda for the remaining life of the UMRSP to 2020.

The achievements documented are a result of sustained funding and technical support by Government of Uganda and its valued partners: The Global Fund to Fight HIV/AIDS, Malaria and Tuberculosis (GF), the US President's Malaria Initiative (PMI), the UK's Department for International Development (DfID), World Health Organization and UNICEF to mention but a few. The overall health system challenges that have impeded progress and the weaknesses in Programme decentralization and coordination as pointed out by the MTR are a major concern.

I call upon all stakeholders led by the Government of Uganda to invest more and to better focus their support to achieve sustained control of malaria and deliver the country towards a malaria-free future.

Dr. Henry Mwebesa
Ag. Director General Health Services

Acronyms

ACT	Artemisinin-based Combination Therapy
AIDS	Acquired Immune-Deficiency Syndrome
AL	Artemether- Lumefantrine
ALMA	African Leaders Malaria Alliance
ANC	Antenatal Care
AMFm	Affordable Medicines Facility malaria
BCC	Behavioral Change Communication
CDC	Communicable Disease Control
CSO	Civil Society Organization
DFID	Department for International Development
DHE	District Health Educator
DMFP	District Malaria Focal Person
DDT	Dichlorodiphenyltrichloroethane
DHS	Demographic Health Survey
DHIS 2	District Health Information System 2
EPR	Epidemic Preparedness and Response
EIR	Entomological Inoculation Rate
EQA	External Quality Assurance
FBO	Faith-Based Organization
GDP	Gross Domestic Product
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GOU	Government of Uganda
HBMF	Home-Based Management of Fever
HMIS	Health Management Information System
HIV	Human Immune-Deficiency Virus
HSD	Health Sub-district
HPAC	Health Policy Advisory Committee
HW	Health Worker
iCCM	Integrated Community Case Management
IDSR	Integrated Disease Surveillance and Response
IMM	Integrated Management of Malaria
IPTp	Intermittent Preventive Treatment in pregnancy
IRS	Indoor Residual Spraying
ITN	Insecticide Treated Net
IVM	Integrated Vector Management
JMS	Joint Medical Stores
LLIN	Long Lasting Insecticidal Net

M&E	Monitoring and Evaluation
MCH	Maternal and Child Health
MDG	Millennium Development Goals
MIS	Malaria Indicator Survey
MSP	Malaria Strategic Plan
MTR	Mid-Term Review
MoH	Ministry of Health
MoU	Memorandum of Understanding
NDP	National Development Plan
NGO	Non-Governmental Organization
NHP	National Health Policy
NMCP	National Malaria Control Program
NMS	National Medical Stores
NPA	National Planning Authority
NRH	National Referral Hospital
NPO	National Professional Officer
OPD	Outpatient Department
PFP	Private for Profit
PNFP	Private Not-for-profit
PSM	Procurement and Supply Management
QA	Quality Assurance
RBM	Roll Back Malaria
RDTs	Rapid Diagnostic Tests
RRH	Regional Referral Hospital
SAM	Service Availability Mapping
SBCC	Social Behaviour Change Communication
TWG	Technical Working Group
UMIS	Uganda Malaria Indicator Survey
UMRSP	Uganda Malaria Reduction Strategic Plan
UNBS	Uganda National Bureau of Standards
UNMHCP	Uganda National Minimum Health Care Package
UNICEF	United Nations Children's Fund
USD	United States Dollars
USAID	United States Agency for International Development
VHT	Village Health Team
WHO	World Health Organization
WHOPES	World Health Organization Pesticides Evaluation Scheme

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CHAPTER 1: INTRODUCTION

1.1: Background: Geography, climate and demography

Uganda, with a total area of 241,550.7 square kilometers, is located in eastern Africa, west of Kenya, south of South Sudan, east of the Democratic Republic of the Congo, and north of Rwanda and Tanzania, between 1º N and 4º N latitude, and 30º E and 35º E longitude. It is in the heart of the Great Lakes region, and is surrounded by three of them, Lake Edward, Lake Albert, and Lake Victoria.

Uganda's geography is very diverse in that it consists of volcanic hills, mountains, lakes and savannah grasslands. The country sits at an average of 1,100 meters above sea level. Both the eastern and western borders of Uganda have mountains. The Rwenzori mountain range contains the highest peak at 5,094 meters. Uganda has an equatorial climate, meaning that it receives a lot of sunshine with an average annual temperature of 26^0 C. The rainy season is from March till May and September till November. Dry seasons are in December - February and June - August.

Uganda is a multi-ethnic country which according to 2014 census results had 34.6 million persons with an annual population growth rate of about 3.0 percent, giving an estimated population of 42.4 million people by 2020. The 2016 UDHS found total fertility rate was 5.4 children per woman, Infant mortality rate was 43 deaths per 1000 live births and under five mortality rate was 64 deaths per 1000 live births. Malaria remains the leading cause of both morbidity and mortality among the children below 5 years of age followed by pneumonia.[1] Uganda's topography and climate are conducive for the propagation of both the malaria vectors, Anopheles mosquitoes and plasmodium parasites. Malaria is endemic in 95% of the country with 5% being epidemic prone.

[1] Health Sector Development Plan 2015-2020

1.2: The National Health System

The Uganda Health System is organized in a tiered manner, with the following levels: hospitals (general, regional referral, national referral), health centre IV (Health Sub-district), health centre III (Sub-county), health centre II (Parish) and health centre I (village level with no static facility) respectively. Uganda implements a decentralized health system where the national level provides a leadership role and is responsible for delivering the outputs of all strategic plans for the health sector; while at the local government level, the district health system (DHS) encompasses both public and private general hospitals, health centres and community health programs. The Local Governments have the responsibility for the delivery of health services, recruitment and management of the personnel for district health services; and to perform this mandate, the Local governments depend largely on central government financial transfers to finance their budgets.

1.3: National Malaria Control Programme

A Malaria Control Unit was set up in 1995. The Unit underwent a restructuring process in 1996 and the first National Malaria Strategic Plan (NMSP) 1996-2001 following the malaria eradication era was formulated under the theme "the intensified malaria control initiative". Accompanying the first NMSP was an anti-malarial policy that was approved in 1998. In 2001, the Malaria Control Unit was elevated to a National Malaria Control Program, and four technical working groups (TWGs) were created, namely; case-management, insecticide treated materials & vector control, advocacy and IEC and research. More recently, following concerted efforts and recommendations of the 2011 MPR and 2014 MTR, the NMCP has been elevated to a division headed by an Assistant Commissioner. These progressive developments show the government of Uganda's commitment towards malaria control and elimination.

1.4: Uganda Malaria Reduction Strategy

In 2014, the Ministry of Health (MOH) through the National Malaria Control Program (NMCP) and Partners developed the Uganda Malaria Reduction Strategic Plan (UMRSP) 2014-2020[2], following a review of the 2010 – 2015 Malaria Strategic Plan.

The purpose of the UMRSP was to provide a common framework for all stakeholders to accelerate nationwide scale up of evidenced-based malaria reduction interventions by the government, its development partners, the private sector and all stakeholders. It stipulated the priority interventions, the strategic re-orientations and the investments required for achieving the goals and targets.

1.4.1: Vision, Mission, Goals and Objectives

Vision: a "malaria free Uganda".

Mission: To provide quality assured services for malaria prevention and treatment to all the people in Uganda.

[2] Uganda Malaria Reduction Strategic Plan 2014-2020

The goals were that: By 2020, reduce annual malaria deaths from the 2013 levels (30 per 100,000) to less than 1 death per 100,000 population; reduce malaria morbidity from 150 to 30 cases per 1000 population. In the same period, malaria parasite prevalence (by microscopy) was to be reduced from 19% to less than 7%.

1.4.2: UMRSP 2014-2020 strategic objectives

1. By 2017, achieve and sustain protection of at least 85% of the population at risk through recommended malaria prevention measures;
2. By 2018, achieve and sustain at least 90% of malaria cases in the public and private sectors and community level receive prompt treatment according to national guidelines;
3. By 2017, at least 85% of the population practices correct malaria prevention and management measures;
4. By 2016, the programme is able to manage and coordinate multi-sectoral malaria reduction efforts at all levels;
5. By 2017, all health facilities and District Health Offices report routinely and timely on malaria programme performance;
6. By 2017, all malaria epidemic prone districts have the capacity for epidemic preparedness and response

1.4.3: Implementation approach

The UMRSP was developed against the backdrop of the high socio-economic impact malaria exerted on the development of Uganda. It received unequivocal support of the Ministry of Finance that demanded that MOH developed a malaria reduction plan that would provide an accelerated approach to malaria control in Uganda. The UMRSP would form the base for resource mobilization and provide a common framework for a nationally coordinated and accelerated implementation of priority interventions across the country with a defined strategic direction and the investments required to achieve the set 2020 national goals for malaria reduction.

The UMRSP envisaged and recommended that the strategic plan would be implemented at different levels of the health care system through the RBM partnership. This would include national, zonal, district, HSD, health facility and community levels, through a wider multi-sectoral partnership framework. Its implementation would be through a broad collaborative nationwide coalition whereby all stakeholders would operate under the 3 “ones” - one strategic plan, one Coordination mechanism and one M&E plan. The UMRSP also intended to strengthen “bottom-up” approaches to foster decentralization of service delivery at district level to increase efficiency and effectiveness of interventions with an emphasis on district and community level engagement and ownership.

1.4.4: Key assumptions

In implementing this strategic plan, it was assumed that the following conditions would prevail:

1. Adequate funding for comprehensive implementation of interventions;
2. Comprehensive, contiguous and integrated programming and implementation;
3. Empowered malaria control programme;
4. Sustainability plans for gains attained;
5. Use of the decentralized structures at regional and district level in the implementation of the plan;
6. Adequate capacity of the districts to implement the strategic plan;

7. Availability of quality data for use in evidence-based planning;
8. Effective engagement of the private sector to tap on its potential;
9. Buy-in and ownership through adequate advocacy, social mobilization, SBCC and IEC in both scope and scale;
10. Proactively manage insecticide and parasite resistance development

As of July 2017, the implementation of the UMRSP 2014 – 2020 was at the mid-point of its life. NMCP and partners decided to conduct a mid -term review to assess, midway, if the intended implementation approaches and delivery of interventions are on course towards the stated goals and objectives.

1.5: Mid Term Review

Purpose

The Mid Term Review (MTR) of the UMRSP is a scheduled activity that looks at progress against planned targets at mid-point of the implementation. It provides the basis for review of the strategies and approaches deployed, and their effectiveness to achieve the desired impact. The MTR provides an opportunity to rally behind appropriate approaches and make adjustments in implementation in order to attain the set targets in the remaining period of the plan. This review covered the period 2014-2017.

Objectives

The specific objectives of the MTR were to:

i. Assess the progress of the national malaria control programme towards the *epidemiological and entomological impact targets of the UMRSP* and make appropriate recommendations towards enhanced impact;
ii. Review the level of *financing of the national malaria programme* and make appropriate recommendations towards optimal financing;
iii. Review the *capacity of the national malaria control programme to implement planned activities* and make appropriate recommendations towards optimal capacity for programme implementation;
iv. Review the *attainment of programme outcome targets* and make appropriate recommendations for optimal delivery of malaria services;
v. Define the *programming implications of the lessons learned* in the implementation of the UMRSP.

1.6: Methodology of the Mid-Term Review (MTR)

The MTR was conducted by the NMCP and partners in a participatory and consultative process, guided by consultants under the overall coordination of the Midterm Review Coordinator, the MTR Task Force and MTR Secretariat supervised by the Programme Manager. The process included the planning phase, thematic desk reviews, and validation phase that included appraisal by a team of external validators, national stakeholder consultations, and field visits to selected districts.

It was from this process that findings, conclusions and recommendations were made as detailed in the document. The findings of the MTR are used to generate the action points for programme strengthening and will guide the execution of interventions and approaches for the remaining period of the strategic plan.

1.7: Outline of the document

The outline of this report is broadly arranged in chapters containing the following themes: epidemiological and entomological impact; programme financing; capacity of the NMCP to implement; effectiveness of the health system in delivering malaria services; programming implications of the lessons learned, conclusions and action points.

CHAPTER 2: ASSESSMENT OF PROGRESS TOWARDS EPIDEMIOLOGICAL AND ENTOMOLOGICAL IMPACT

This chapter gives the status of epidemiological and entomological results at the MTR and their implications.

2.1: Progress towards epidemiological impact of the UMRSP

The goals of UMRSP were that by 2020;

- Reduce annual malaria deaths from the 2013 levels (30 per 100,000) to less than 1 death per 100,000 population;
- Reduce malaria morbidity from 150 to 30 parasitologically confirmed cases per 1000 population.
- Reduce malaria parasite prevalence from 19% to less than 7%.

2.1.1: Progress towards UMRSP malaria mortality reduction

Figure 2.1.1: Reduction in Malaria, Uganda. 2015-2017

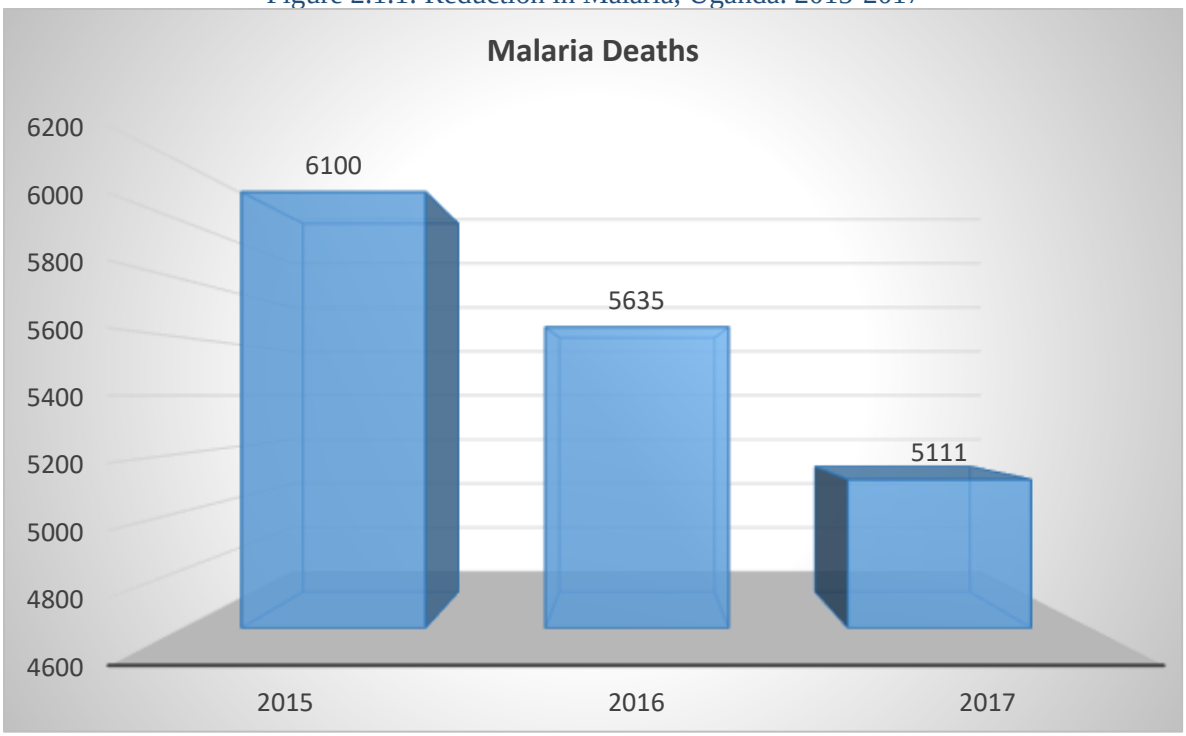
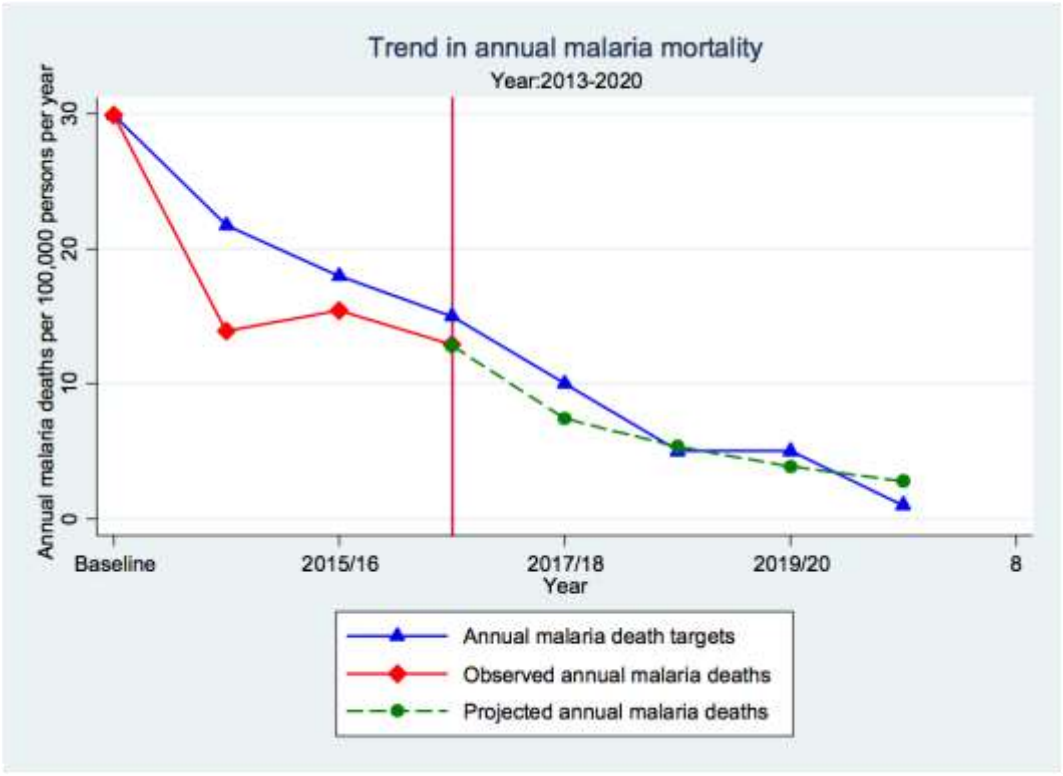


Figure 2.2 shows past and projected trends in malaria mortality in comparison to strategic plan targets/milestones.

Figure 2.1.2: Malaria mortality and future outlook



Source: HMIS

Before implementation of the Strategic Plan began, the annual malaria deaths per 100,000 people were about 30 deaths. At mid-point, in 2017 the reported number of malaria deaths is 13 deaths per 100,000 population which is below the mid-point target of 15 deaths per 100,000 population. This implies that sustaining the scope and scale of the current strategies is likely to achieve the desired malaria mortality reduction goal by 2020.

2.1.2: Progress in malaria morbidity

Between 2015 and 2017, there was observed increase in confirmed malaria cases from 7.1 million to 9.45 million (HMIS data). This may be due to several reasons including among others: actual increased transmission of malaria; improved quality of care with increased testing ad reporting; better health care seeking at public health facilities as social and behavior change communication improved

Figure 2.2.1: Malaria confirmed cases by Year 2015-2017.

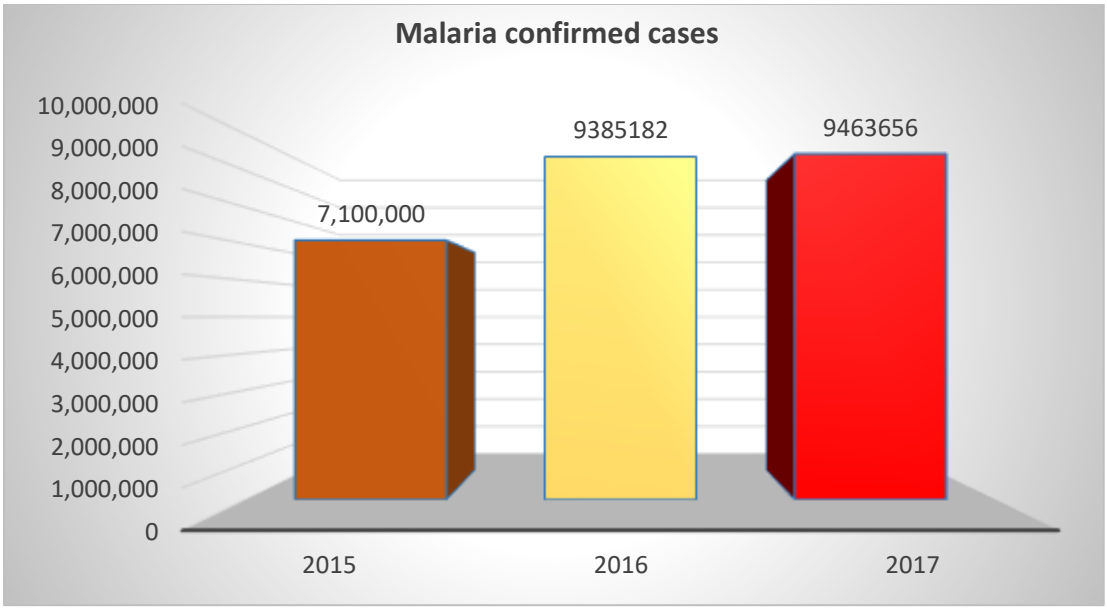
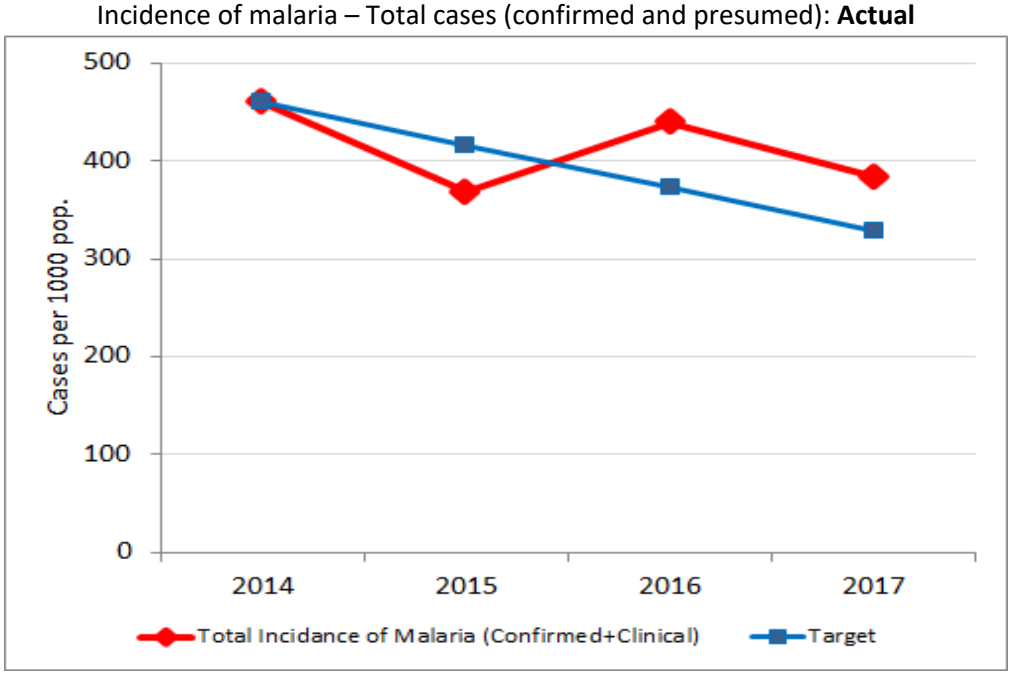
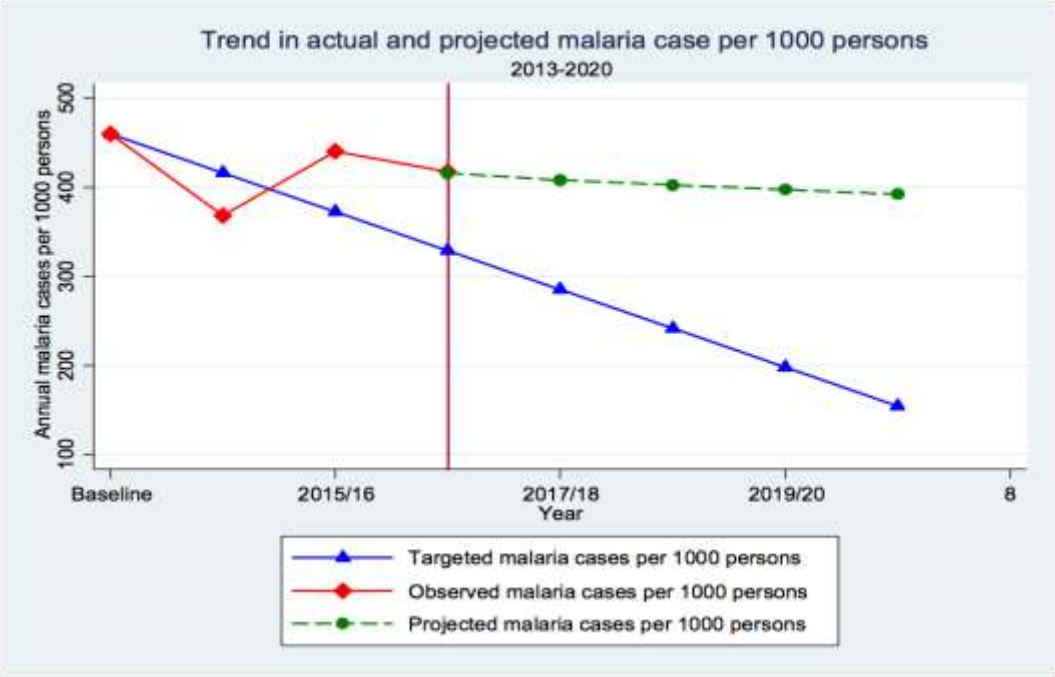


Figure 2.2 shows past and projected trends in malaria morbidity in comparison to strategic plan targets.

Figure 2.2: Incidence of malaria – Total cases (confirmed and presumed)





Source: HMIS

Malaria incidence at the beginning of the 2014-2020 strategic plan was about 460 cases per 1000 per year (suspected and confirmed malaria cases). In the first year of implementing the strategy, malaria incidence decreased followed by an increase above the set targets. The observed increase in malaria cases between 2014 and 2016 may be explained by the epidemic in Northern Uganda. Furthermore, there was a general increase in cases across the country that is mainly attributed to climatic changes as seen in most of Eastern and Southern Africa over the period under review[3].

Figure 2.3 shows the total number of malaria cases, confirmed malaria cases and incidence of malaria over the period 2010 to 2016. The maps show the trend in malaria incidence by district for the period 2014, 2015 and 2016.

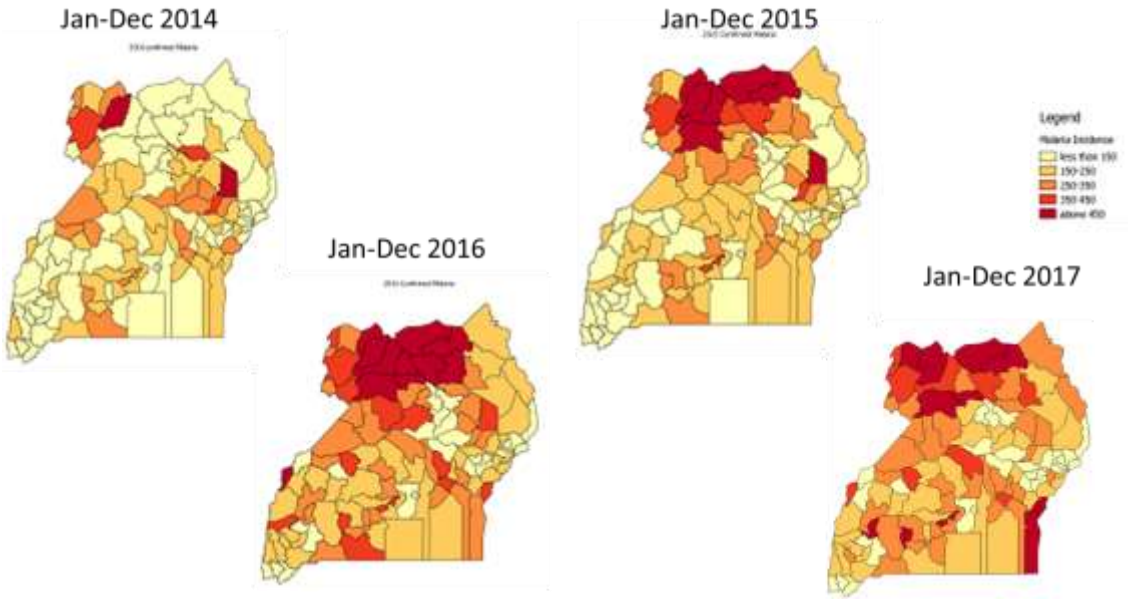
The maps clearly show increased malaria incidence over the years and specifically in the Northern part of the country. More so, the number of districts reporting malaria incidence of 350 cases per 1000 population is increasing country wide with exception of the 14 districts in the mid-east where IRS is being implemented.

Figure 2.3: Incidence and cases of malaria 2010-2016

[3] WHO, IST Malaria Surveillance Bulletin Dec 2014, Harare

Note that a mass LLIN distribution campaign was conducted in 2014

Figure 2.4: Malaria Incidence Maps (all cases)



Between 2014 and 2016 there has been an increase in the number of districts with malaria incidence of more than 350 cases per 1,000 populations. It is observed that the 14 districts where IRS is currently being implemented in Eastern Uganda show consistent reduction in malaria incidence.

2.1.3: Changes in parasite prevalence

Uganda has conducted two Malaria Indicator Surveys (MIS) 2009 and 2014 which measured among other parameters malaria parasite prevalence by both microscopy and rapid diagnostic testing among children under five. The estimation of parasite prevalence is by both microscopy and rapid diagnostic tests. In 2016, the Uganda Demographic and Health Survey (UDHS) included a malaria module that also measured malaria prevalence using only rapid diagnostic testing. Figure 2.5 shows trends in malaria prevalence among children under 5 against the

set targets based on microscopy. However, the projection 2017-2020 is based on RDT results to take advantage of the 2016 survey findings.

Figure 2.5.1: Malaria prevalence trends

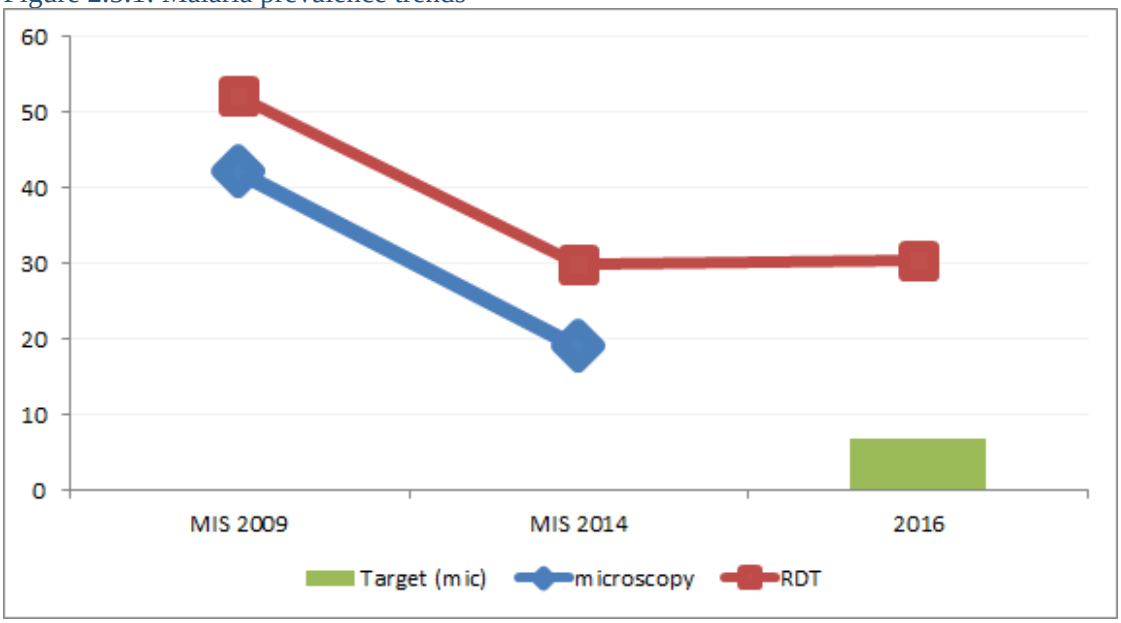
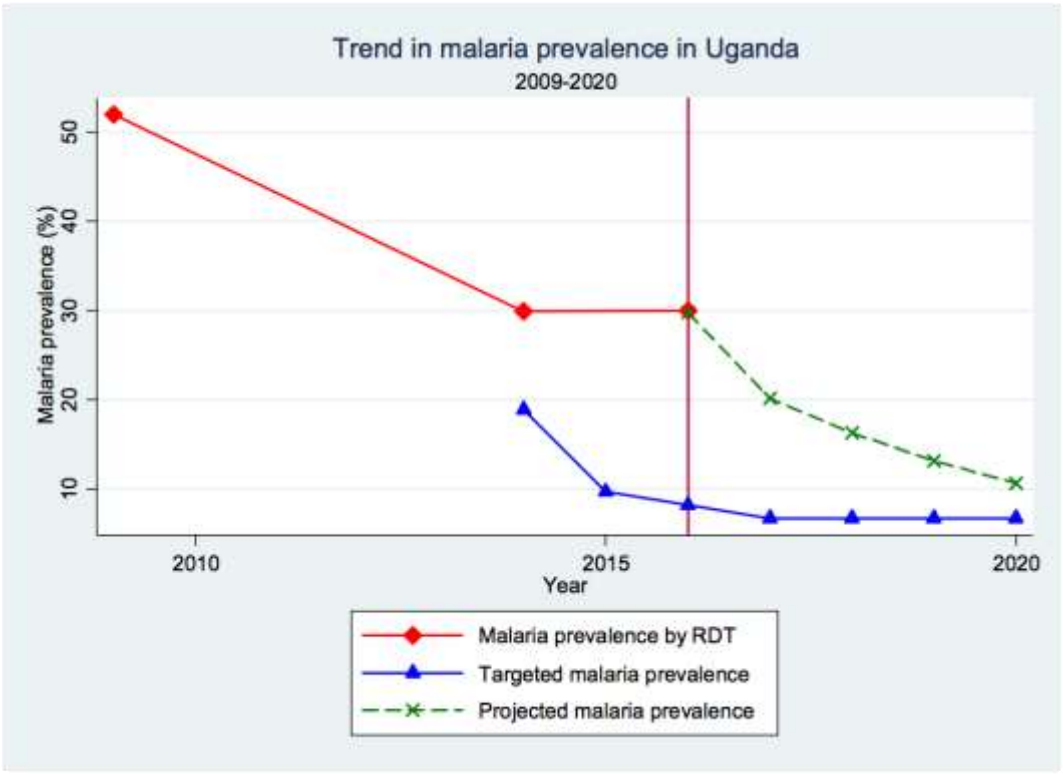


Figure 2.5.2: Malaria prevalence trends



Source: UMIS and UDHS

Malaria prevalence in 2009 was estimated at 52% that reduced to about 30% in 2014 and remained almost the same in 2016 based on RDT. The average percentage change in malaria prevalence between 2009-2014 was 4.4% per year which was not sustained between 2014-2016. From the projections up to 2020, the NMCP might not achieve the expected decline in malaria prevalence assuming no changes in interventions and implementation approaches.

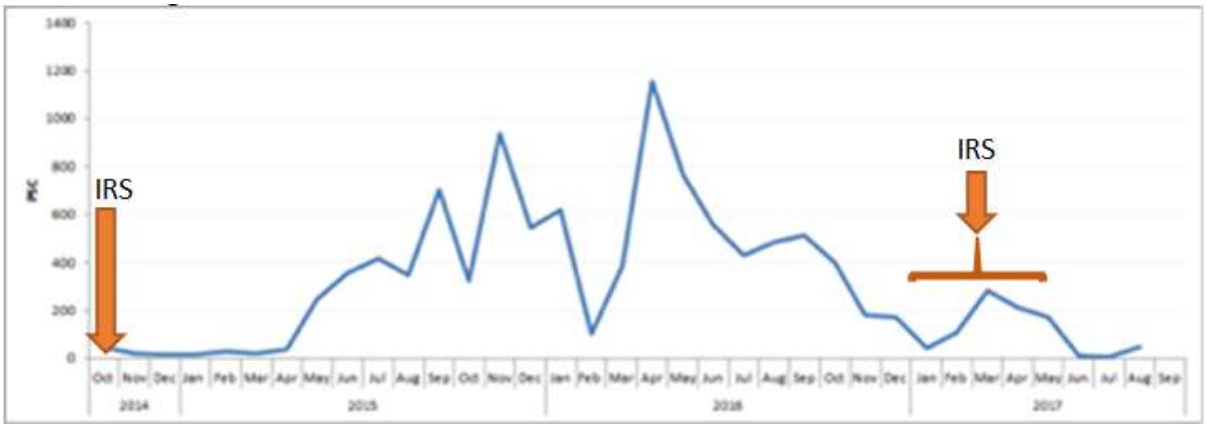
2.2: Progress towards entomological impact of the MSP

A successful malaria control strategy to reduce or interrupt malaria transmission should be informed by up to date knowledge on malaria entomological factors such as species composition, vector abundance, human biting rate, parity, sporozoite rate and entomological inoculation rate (EIR). However, the UMRSP 2014-2020 did not set specific indicators and targets to measure progress in entomology.

In the period 2014-2017, some entomological studies were however conducted in the 14 districts covered by the indoor residual spraying intervention and in selected sentinel sites across the country. Information collected included indoor resting density, insecticide resistance, and species distribution.

In five districts in Northern Uganda, IRS was conducted in November/December 2014 and again in December 2016.

Figure 2.6: Mosquito indoor resting density measured using Pyrethrum spray catches in five districts in northern Uganda between 2014-2017

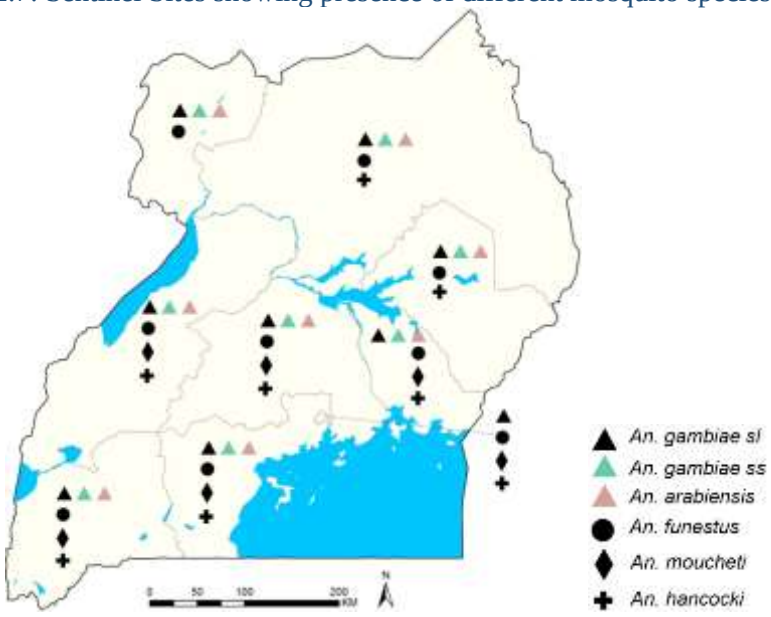


In 2014 the indoor resting density was almost zero which increased in the period 2015-2016 and then declined in 2017. The low densities are associated with periods when these districts were sprayed with IRS and increase was observed when IRS was discontinued. IRS was only re-introduced in this area in December of 2016 as an epidemic response measure resulting in 2017 decline in densities. The increases in resting densities were positively correlated with increased malaria cases in the five districts.

2.2.1: Vector map and species distribution

A national vector mapping has not been done during the review period. However, a study in three sites in Kanungu, Tororo and Jinja districts conducted by Maxwell Kilama, et al (2014) established that An. gambiae s.I is the most prevalent vector with over 85% prevalence in Jinja, Kanungu, and Tororo. Findings from this study corroborate results from studies conducted at the sentinel sites in 2016 as shown in Figure 2.7 the map.

Figure 2.7: Sentinel Sites showing presence of different mosquito species



2.2.2: Insecticide Resistance

Insecticides are a major frontline defense in vector control. Four classes of insecticides have been tested for resistance in Uganda i.e. Pyrethroids, Organochlorines (DDT), Carbamates (Bendiocarb), and Organophosphates-(Malathion, and Fenitrothion). Results from sentinel sites indicate development of resistance to pyrethroids and organochlorines.

2.3 Conclusions and recommendations

2.3.1: Conclusions

Mortality

The current interventions and strategies have been effective in attaining mortality reduction attributed to malaria at mid-term. If these interventions and strategies are enhanced country wide, the 2020 targets are likely to be attained.

Morbidity

By mid-term, the UMRSP targets for reducing malaria morbidity were not met. Continuing to implement the current malaria prevention and control interventions at the present scope and scale may not reduce the malaria morbidity to the 2020 UMRSP targets.

Entomology

There is inadequate information on entomological indices.

2.3.2 Recommendations

1. To sustain the gains in reducing malaria mortality, MOH and partners should strengthen the health care delivery system to ensure prompt diagnosis, treatment and timely referral at all levels.
2. Given the rapid reduction in malaria incidence experienced in the Northern and Eastern Uganda districts where IRS programmes are ongoing, MoH and partners should prioritize the hot spot districts in the country with IRS so as to rapidly reduce transmission with a clear plan for sustainability of the gains upon exit. The 10 highest burden districts (above 450 cases/1000 population) are Agago, Kitgum, Lamwo, Pader, Oyam, Gulu, Nwoya, Amuru, Adjumani and Moyo. There are 15 districts that have the second highest incidence of malaria (350-450 cases/1000 population). These include Koboko, Arua, Nebbi, Kiryadongo, Apac, Katakwi, Kamuli, Jinja, Busia, Kyakwanzi, Bundibugyo, Rubirizi, Rakai, Lyantonde and Butambala
3. The national malaria control programme should strengthen countrywide entomological surveillance to generate up-to-date to inform the planning and implementation of vector control interventions.

CHAPTER 3: REVIEW OF PROGRAMME FINANCING

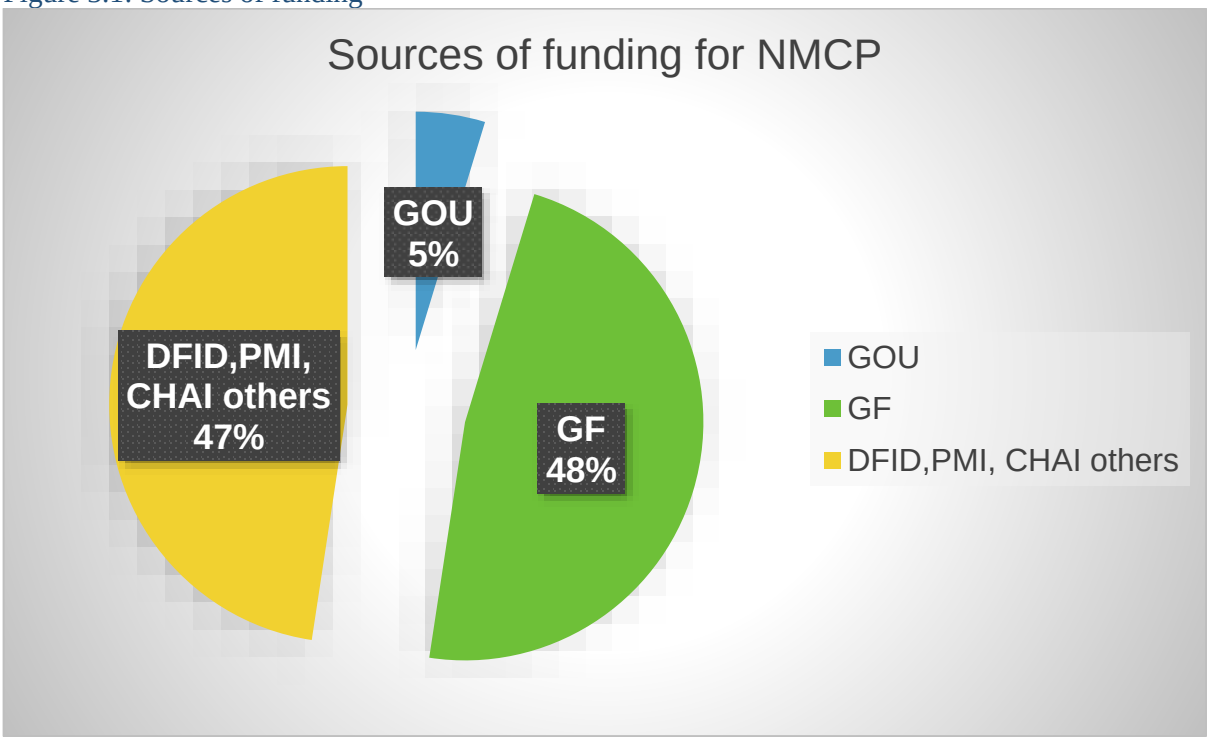
3.1: Overview of Malaria Financing

The overall budget to implement UMRSP (2014-2020) was US$1.2 billion. The expected budget for UMRSP for the period 1st July 2014 - 30 June 2017 was US$615.4 million. As at reporting time, June 2017, the country could only mobilize $409.5million (67%), of which, GoU contributed 5% while about 95% came from donors, with serious implications for sustainability. The budget of US$1.2 billion was to finance prevention, control and management of malaria. This budget is allocated according to the six strategic objectives as detailed in Annex A1. For the period 2014-2017 the total budget as per UMRSP was US$615.4 million.

3.2: Resource mobilization for the UMRSP

Out of the US$ 615.4 million, US$ 409.5 million (67%) was mobilized to implement the planned activities. The main sources of funding for NMCP included government of Uganda and development partners. More specifically, for the period under review, about 48% of the funding is from Global Fund (GF) mainly for commodities such as ACTs, LLINs, RDTs among others. Furthermore, the 47% from development partners like DFID, PMI, CHAI among others are to support IRS, capacity building, routine LLINs, RDTs and ACTs for PNFP facilities supplied through Joint Medical Store (JMS). Majority of funding is from donor sources, with GoU providing about 5% for implementation of the UMRSP.

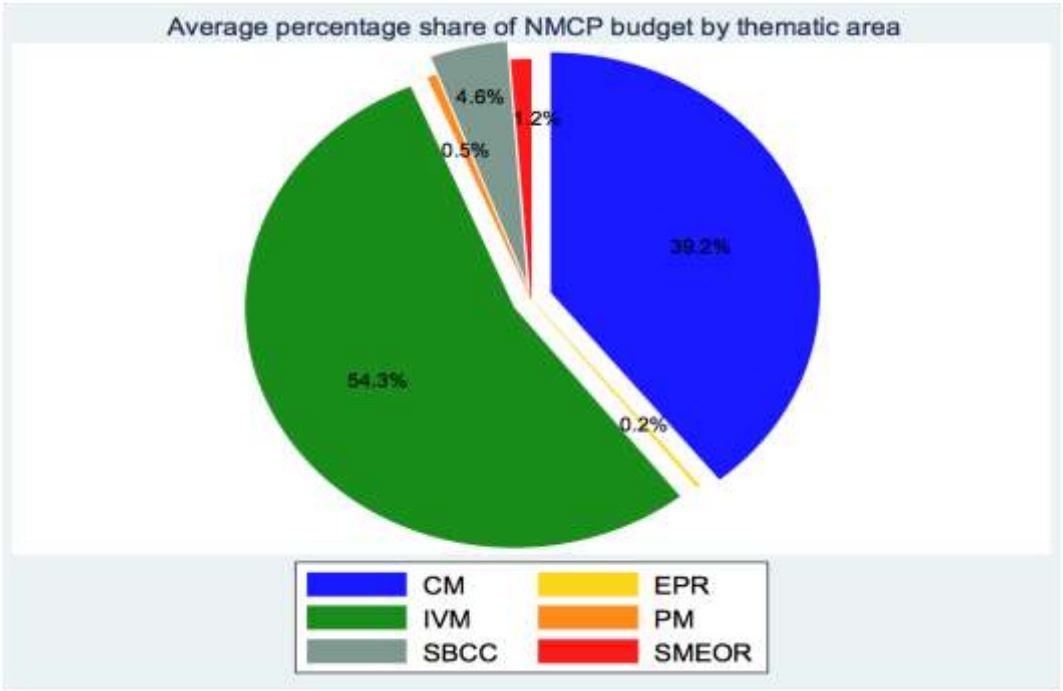
Figure 3.1: Sources of funding



Source: NMCP

Thematic area budget distribution

Figure 3.2: Average percentage share of NMCP budget for the different thematic areas

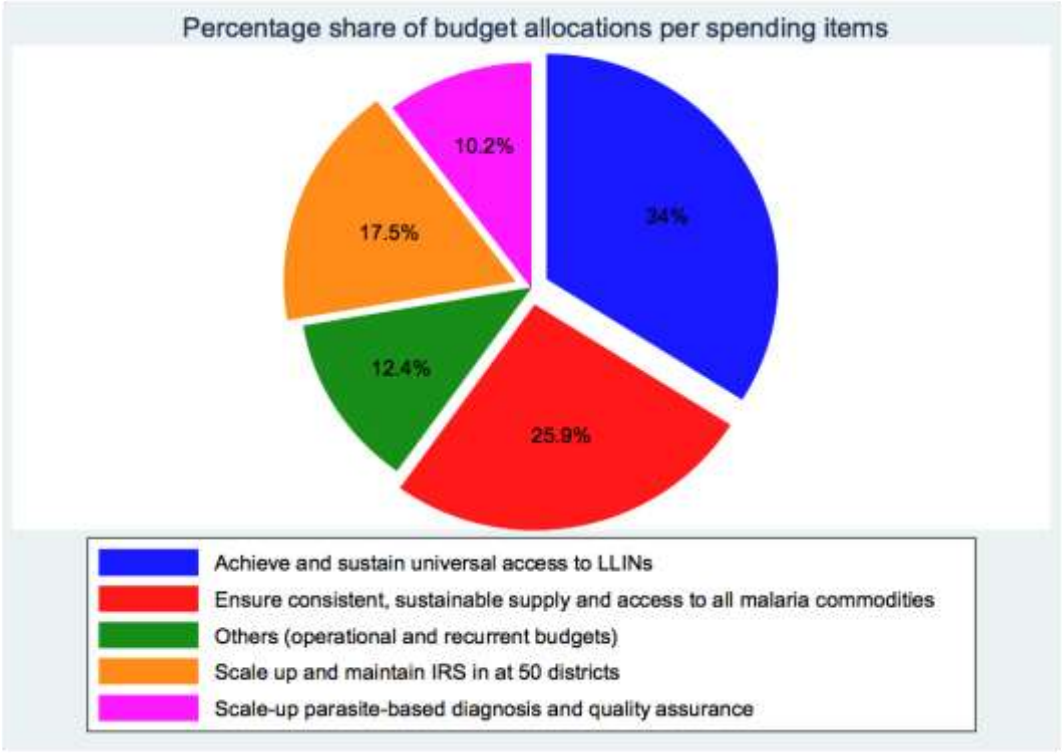


Source: UMRSP

Over 50% of the budget allocations were biased towards IVM activities more especially LLINs and IRS. Case management was allocated about 39% of the budget while the remaining thematic areas share only 6.5% of the budget. IVM and case management activities account for nearly 90% of the planned budget. In these thematic areas the funds are mainly allocated for commodities i.e. LLINs, ACTs, RDTs and IRS Insecticides, that leaves supportive interventions such as programme management, surveillance, monitoring and evaluation, and operational research, advocacy, communication and social mobilization with minimal funds.

Further analysis of the budget allocations towards the spending items in the strategic plan was performed. The results are summarized in Figure 3.2.

Figure 3.2: Budget allocation



Source: UMRSP

The detailed budget analysis shows that about 88% of the NMCP budget was allocated for procurement of commodities like LLINs, chemicals for IRS, ACTs, and RDTs among others. This implies that only 12% of the budget was allocated for operations and recurrent expenditures that facilitate service delivery and uptake of the commodities.

The current funding of the NMCP is predominantly donor driven and yet the funding landscape is expected to change in the next five years resulting from exist of some donors such as DFID that has expressed intent to exit bilateral funding for malaria. Fortunately, new donors like Against Malaria Foundation (AMF) that has recently provided significant quantity of LLINs for mass campaign are emerging. Therefore, the trajectory of funding is unpredictable in the medium term.

The Ministry of Finance Planning and Economic Development is leading new reforms geared at fiscal decentralization with a potential to provide additional resources to districts through Results Based Financing (RBF). These reforms could potentially mean that district could prioritize malaria in their spending and thus attract increased resources for malaria.

Overall, absorption of funds by the different levels of service delivery was not assessed due to lack of expenditure data at the time of assessment.

3.3: Conclusions and Action points

3.3.1: Conclusions

- Majority (nearly 95%) of the financing of the budget is from donors, which casts doubt on the sustainability of the interventions.
- There is low budget prioritization for supportive interventions such as SBCC, Supervision, Monitoring and Evaluation that drive the uptake and utilization of the commodities.
- The lack of expenditure data at the time of the assessment makes it difficult to establish if the resources mobilized were sufficient and effectively utilized.

3.3.2: Action points

1. Government should increase the share of domestic health financing towards the 15% Abuja target. This will help cover particularly non-commodity areas currently not funded by donors to enhance ownership and sustainability of malaria interventions.
2. NMCP and partners should provide adequate resources that will facilitate program-based budgeting to ensure all thematic areas are allocated resources sufficient to achieve intended outcomes.
3. NMCP should improve planning and formalize budget tracking so that expenditure data is readily available to inform budget allocation and utilization.

Way forward:

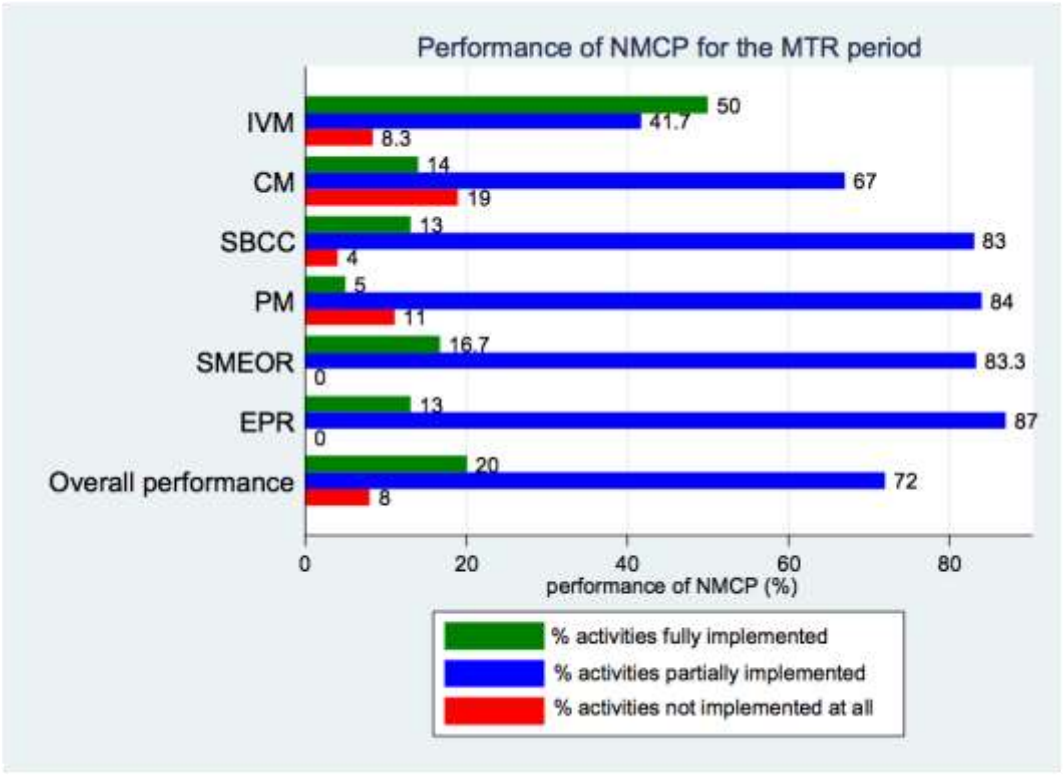
- ❑ Update the budget items in line with emerging initiatives including Touch-down, MAAM, UPFM, Multi-sectoral collaboration
- ❑ Analyze the financial gap
- ❑ Advocate and mobilize resource through, but not limited to, the following:
    - Engage with *Uganda Parliamentary Forum on Malaria* (UPFM)
    - Establish Malaria Trust Fund
    - Institute appropriate legislative framework (Malaria Act)
    - Increased profile of Malaria Free Agenda
        - Establish Uganda Malaria Commission
        - Elevate NMC Division to a National Malaria Department

CHAPTER 4: CAPACITY OF THE NMCP TO IMPLEMENT PLANNED ACTIVITIES

This chapter assesses the capacity of the NMCP in implementing planned activities at mid-term. The government mandates NMCP to implement planned activities under the 6 strategic objectives through a decentralized approach. Figure 4.1 shows the progress on implementation of planned activities under the six thematic areas/objectives.

4.1: Status of implementation of UMRSP activities by June 2017

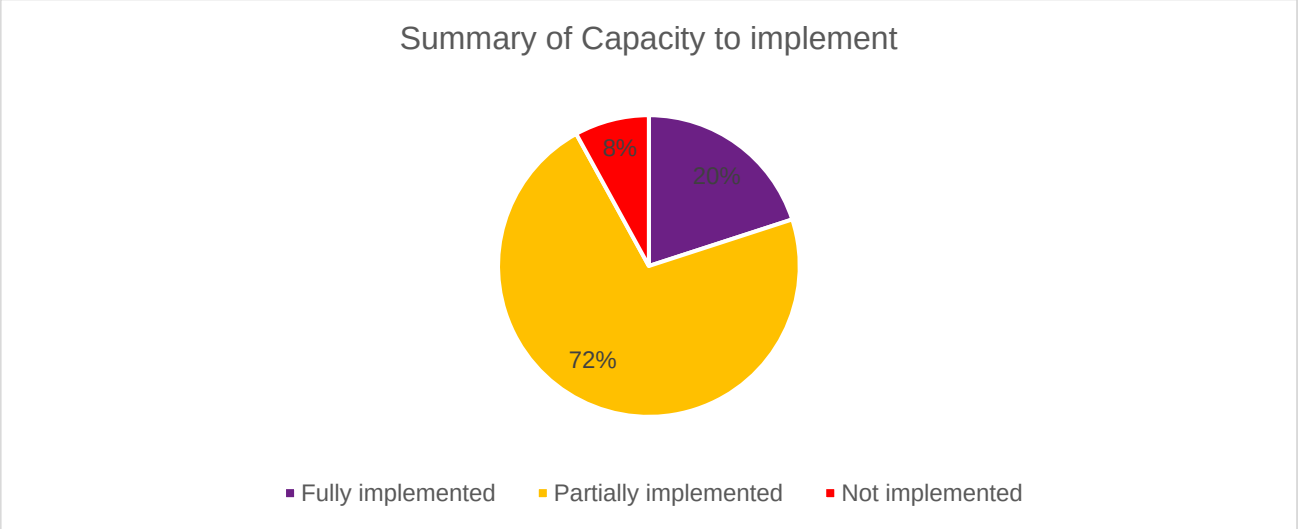
Figure 4.1: Progress of implementation of planned activities under the six thematic areas



Mid-term UMRSP activity implementation status is summarized in the chart below

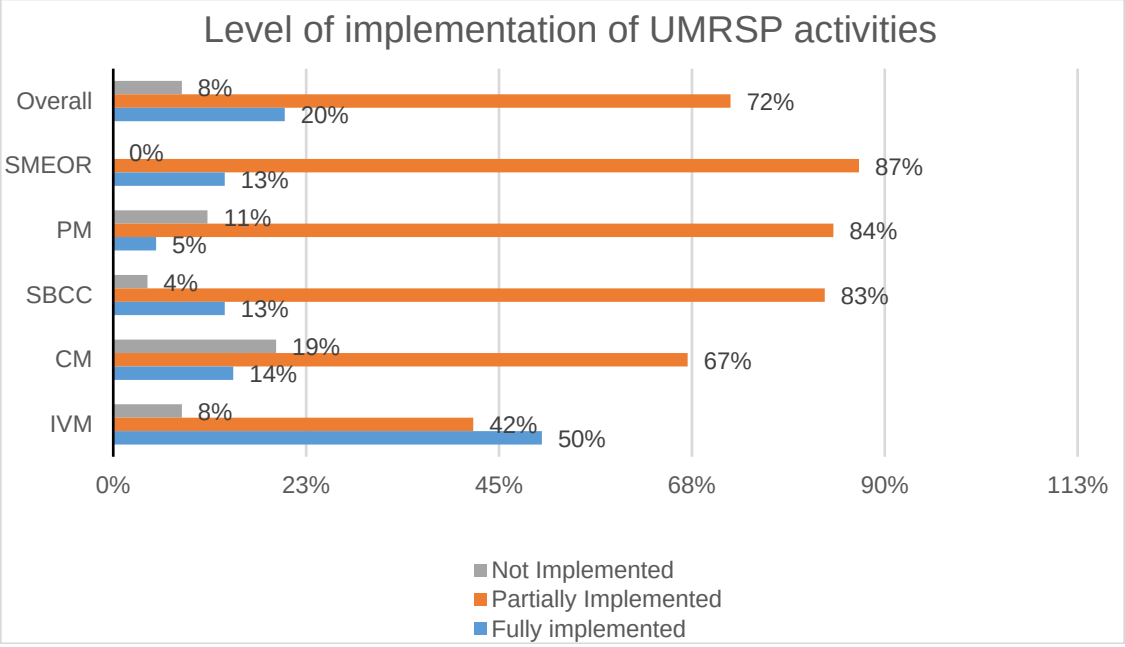
The 2014-2020 UMRSP had a total of 111 activities across all the 6 Strategic Objectives. Of these 22 (20%) were fully implemented, 80 (72%) partially implemented and 9 (8%) were not implemented by June 2017, as detailed below

Figure 4.2: Overall level of implementation of UMRSP activities



It is worth noting that the human resource capacity at the NMCP at the start of the UMRSP was quite low as detailed in the report of the capacity assessment conducted in 2015[4] followed by the Capacity Development Plan for the NMCP, currently funded by UK-DFID. At mid-point there is enhanced human capacity at NMCP to implement malaria control interventions from both Government and those seconded by partners.

Figure 4.3: Capacity to implement at NMCP



See Annex 9 for detailed list of UMRSP activities and implementation level

[4] MOH/DFID NMCP Capacity assessment report 2015

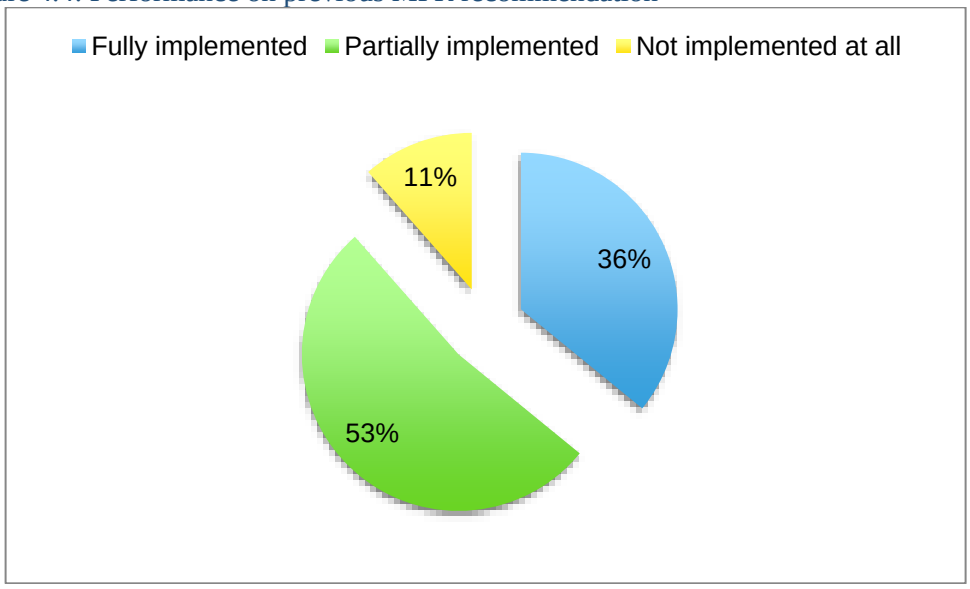
With regard to activity implementation, about 50% of the planned activities under IVM were fully implemented as compared to only 14% under Case Management. The failure in the implementation of activities under case management is resulting into the observed failure to reduce malaria cases as per the planned targets. Activities for SBCC were only implemented to about 13% while Surveillance, Monitoring, Evaluation and Operations Research only implemented about 13% of the planned activities. Similarly, only 5% of the Program Management planned activities were fully implemented.

4.2: Status of implementation of the recommendations of last MPR 2011 & MTR 2014

The first malaria programme review for Uganda was conducted in 2011 at the end of the 2005-2010 MSP and covered the period 2000 to 2010. This review gave birth to among other things a new MSP 2011 to 2015. This MSP was in turn subjected to a belated mid-term review in 2014 which informed the development of the current UMRSP whose mid-term review is documented in this report. Both the MPR and MTR made important recommendations to improve malaria programming in Uganda, generally, and to enhance the impact of interventions on malaria morbidity and mortality, specifically. There were a total of 81 recommendations from both reviews.

The 2011 MPR made 17 Recommendations while the 2014 MTR made 61 Recommendations. Of the total 78 recommendations, 28 (35.9%) were fully implemented, 41 (52.6%) were partially implemented and 9 (11.5%) were not implemented at all by July 2017, as detailed below

Figure 4.4: Performance on previous MPR recommendation



There was no proactive tracking of the implementation of recommendations from previous reviews.

4.3: Enabling and constraining factors

Enablers to implementation

The observed performance of the programme is attributed to the following enabling factors:

1. **Policies and guidelines**: since 2014, there has been improvement in the availability of policies and guidelines at the national and sub-national levels. These guidelines have been very useful especially for the health staff at the district level where malaria services are delivered to the population.
2. **Human resources**: During this period of implementation there has been an improvement in the human resource provided by both government and partners. Most of the positions have been filled that enabled the program to deliver malaria related services to the population. The capacities of the staff were further enhanced by continuous capacity building by both government and partners.
3. **Procurement of malaria commodities**: The performance of the programme has been enhanced by the improved procurement and availability of malaria commodities like LLINs, RDTs, and ACTs.
4. **Malaria service delivery system**: The capacity of the programme to implement planned activities is enhanced by the health services delivery models that involved facility based (standard of care) and community based model (the integrated community case management – iCCM model).

Constraints to implementation

However, findings revealed that about 59% of the activities were partially implemented while 15% were not implemented at all. The failure to fully implement all the activities in the strategic plan was attributed to the following constraints.

1. **Attitude, practice and perception:** There is poor attitude and practice amongst health workers and communities on malaria where individuals assume malaria is a simple illness and thus not seek care promptly, while health workers neglect to emphasize interpersonal communication with their clients to reinforce malaria prevention and control services.
2. **Limited funding for non-commodity items:** There is limited funding for non-commodity items. Findings from the budget analysis revealed that only 12% of the budget was allocated for non-commodity items. This made the implementation as well as monitoring of these activities constrained.
3. **Implementation framework:** There is poor adherence to and operationalization of a decentralized implementation approach coupled with weaknesses in the coordination of implementation activities by stakeholders in malaria.
4. **Mechanism to enforce adherence to guidelines:** There is little or no dissemination and enforcement mechanism for prevention and treatment guidelines to health workers especially at the lower facilities.
5. **Quality of insecticides for IRS:** There is weak system to monitor the quality of insecticides that are used for IRS in the private sector. The weak system of quality assurance has led to application of unapproved or poor quality insecticides for households that would want to use private IRS operators.

6. **Sustainability of interventions:** Findings from the budget analysis revealed that about 88% of the budget is mainly for commodities and is donor funded. There is growing fear about the sustainability of the current interventions if donor support is reduced.

4.4: Conclusions and Action points

4.4.1: Conclusions

- At mid-point there is enhanced human capacity at NMCP to implement malaria control interventions from both Government and those that are seconded by partners as additional staff to the NMCP.
- Only a small proportion of planned activities under case management have been implemented and this may partly explain the slow progress in the observed reduction of malaria cases.
- There was no proactive tracking of the implementation of recommendations from previous reviews.

4.4.2: Action points

1. NMCP and partners should mobilize additional resources to fund all program activities to ensure that available commodities are fully utilized through a harmonized public-private partnership framework that will ensure sustainability of interventions.
2. NMCP cannot fully implement UMRSP planned activities without adhering to the principles of decentralization and facilitate the full operationalization of the intended decentralized service delivery at district level. NMCP should therefore focus on its core mandate of providing national policy and guidelines, resource mobilization, quality assurance and empower districts to lead activity implementation.
3. MOH and NMCP should ensure wide dissemination of all guidelines to cover all levels of service delivery. In addition, NMCP should ensure adherence to these guidelines through a reward mechanism (similar to the national league table) and regular support supervision to districts through the regional structures.
4. NMCP should develop a register of action points, institute a clear implementation plan and assign a responsible officer to oversee, monitor and report on progress of implementation at scheduled intervals; as part of its functional monitoring and evaluation plan.

CHAPTER 5: EFFECTIVENESS OF THE HEALTH SYSTEM IN DELIVERING MALARIA SERVICES

To comprehensively deliver malaria services to the population, synergies from all the six health system building blocks have to be harnessed at national, district, facility and community levels. In the review of progress below, we strive to show the influences of the main health system elements on delivery of malaria services, namely; governance/leadership, health work force, financing, medicines and commodities, health information and service delivery.

5.1: Level of attainment of Vector Control outcome targets

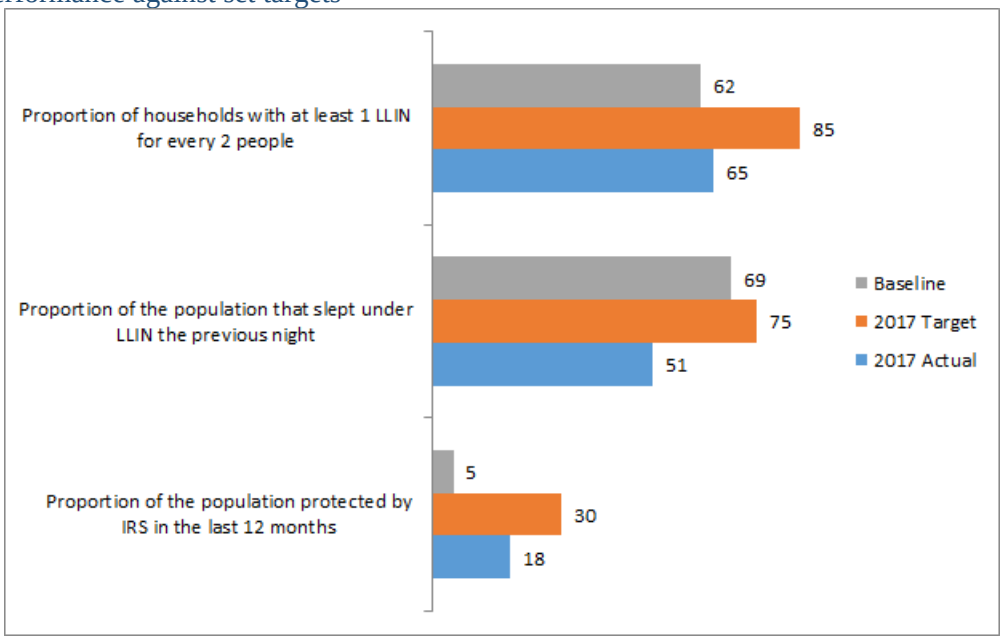
Integrated Vector Management (IVM) is a rational decision-making process for the management of vector populations, so as to reduce or interrupt transmission of vector-borne diseases in a more efficient, effective and ecologically sound manner. Long Lasting Insecticidal Nets (LLINs) and Indoor Residual Spraying (IRS) are the two main approaches to malaria vector control. These are complemented by other measures to reduce mosquito breeding such as Larval Source Management (LSM).

The UMRSP 2014-2020 proposed 3 indicators to measure vector control outcomes

1. Proportion of households with at least 1 LLIN for every 2 people. The baseline was 62% (MIS 2014) and targeted to reach 85% by 2017
2. Proportion of the population that slept under LLIN the previous night. The baseline was 69% (MIS 2014) and targeted to reach 75% by 2017
3. Proportion of the population protected by IRS (in the last 12 months). The baseline was 5% (MIS 2014) and targeted to reach 30% by 2017

5.1: Progress towards UMRSP Vector Control outcome indicators

Figure 5.1: Performance against set targets



Note: that:

- 5% corresponds to the 10 districts
- 18% corresponds to the 24 districts
- 30% corresponds with the target of 40 districts (considering 38% corresponds to 50 districts)

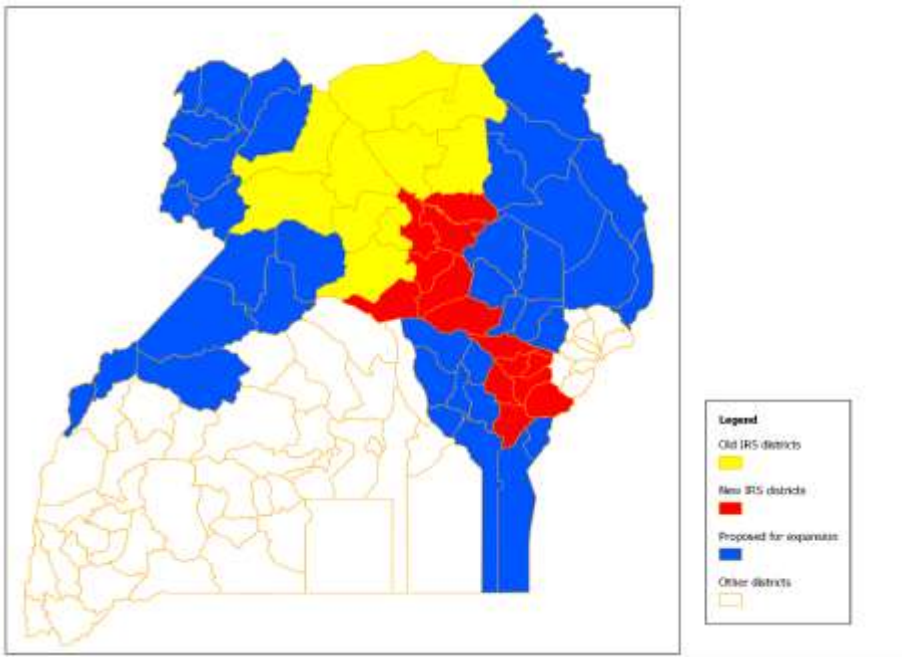
***** Note that we report the Number of districts as we await population based survey. The initial 10 districts, were phased off IRS in 2014 and program shifted to 14 new districts leading to a malaria resurgence in those districts in 2015 – 2016.

At the mid-point, none of the indicator targets were attained and this partly explains the failure of the programme to reduce malaria morbidity as already shown in Figure 2.2.

5.1.2: Appropriateness of outcome, indicators, targets and baseline

Outcome Indicator 1, 2, 3 were appropriate because they measure the performance of their respective objectives. However, for outcome indicator 2 on proportion of the population that slept under the LLIN the previous night the UDHS and MIS segregates data by vulnerable populations, namely; pregnant women and children under 5.

Figure 5.2: Trends of IRS implementation 2014 - 2017



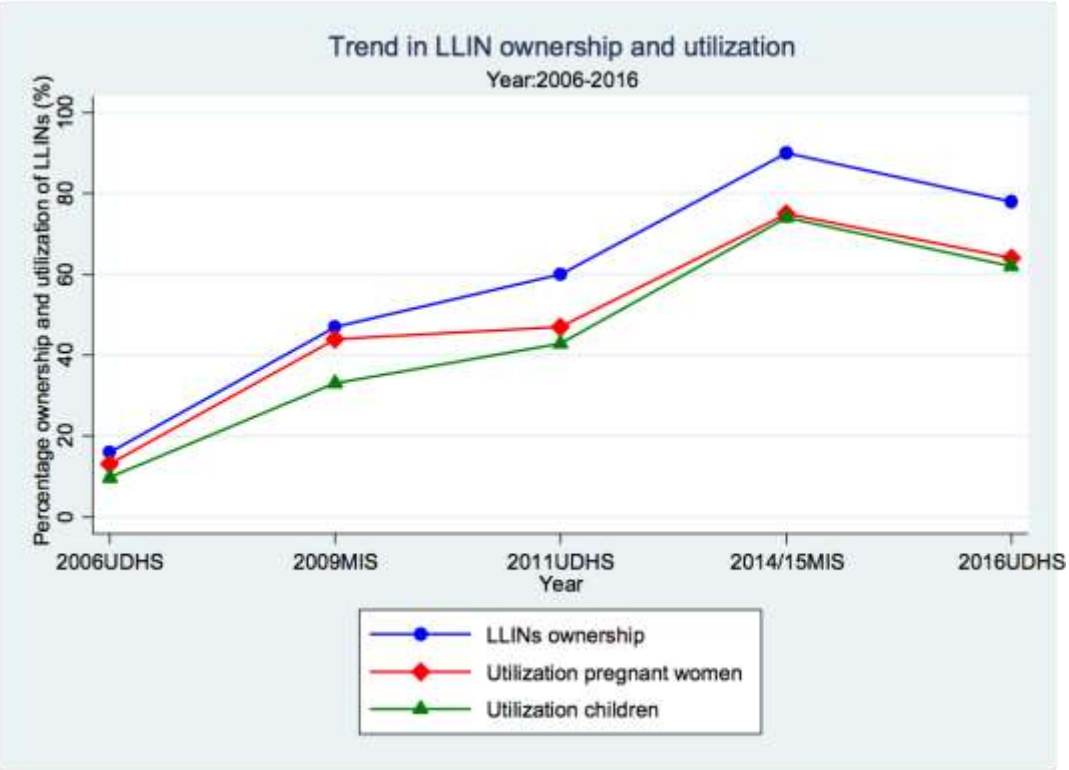
The UMRSP targeted to scale up and sustain indoor residual spraying (IRS) in 50 contiguous districts from the initial 10 districts at baseline. It was expected by 2017, 25 districts would be covered by IRS. However, in 2014, the original 10 districts were discontinued and the programme moved to 14 new districts in North and Eastern Uganda. Hence, there has not been increase in the number of districts covered by IRS over the review period, with non-compliance to UMRSP envisaged contiguous expansion.

The programming implication is that at the current scale of IRS coverage, the country will not be able to rapidly interrupt malaria transmission to reduce malaria cases. More so, IRS is a very expensive and labour intensive intervention that without huge upfront investment, is nearly impossible to start and sustain. The absence of expansion in number of districts covered by IRS was due to lack of financing and the shift to more expensive organophosphate insecticide class due to resistance to previously cheaper pyrethroids.

5.1.2: Trends of LLIN outcome targets and programming implications

The UMRSP target was to achieve universal coverage with LLINs by 2020. During the period under review, this proportion increased from 62% to 65%, which is below the expected target of 85% at midterm.

Figure 5.3: Trend in LLIN ownership and use



Source: MIS and UDHS

During the period under review, net use by vulnerable populations (pregnant women and children under 5) increased as net ownership increased as shown in Figure 5.3, although the midpoint target of 2017 was not achieved.

The current centrally implemented mode of delivery of LLINs through mass campaigns is expensive as huge amounts of resources have to be mobilized within one year to achieve a universal LLIN coverage campaign (UCC), and it concentrates both planning and distribution at national level with limited district involvement and ownership which increases the cost and duration of a UCC.

The NMCP can attain universal coverage with LLINs using a universal coverage campaign, however this needs to be maintained and sustained with a robust continuous distribution mechanism using multiple channels beyond the current ANC and EPI clinic distributions to pregnant women and infants. Also, universal coverage does not necessarily translate into universal use. To increase use requires concerted and sustained advocacy, communication, social mobilization (ACSM) and sensitization to ensure that individuals in households use nets every night. The UCC causes financial, logistical and human resource constrains to the programme in attaining universal coverage and therefore not sustainable.

5.1.3 Status of Larval Source Management (LSM) interventions

The UMRSP envisaged that during the life of the strategic plan, areas appropriate for LSM would be mapped and capacity for LSM built. During the period under review, baseline epidemiological and entomological studies were conducted in Nakasongola and 168 personnel were trained in larval source management techniques. At mid-term, pilot study to inform the scale up of larval source management in Uganda was planned to be conducted in Nakasongola district however its implementation has been delayed due to logistical challenges. National Chemotherapeutic and Research Laboratory currently implements this pilot and others before it. There is however need to shift the planning and implementation of LSM activities to the domain of the NMCP as soon as possible to allow its mainstreaming as a complementary intervention to other IVM activities on-going, for proper management and technical accountability.

5.1.4: Enablers and constrainers

Enablers

The observed performance of the programme is attributed to the enabling environment due to the following factors:

1. **Policies and guidelines**: Previously NMCP had separate guidelines for each IVM intervention area. However just before MTR, NMCP and partners developed a comprehensive IVM strategy and guidelines that will inform implementation of all IVM related activities nationally.
2. **Human resources**: Nearly all districts have vector control officers (VCOs), while at national level the capacity at NMCP and Vector Control Division is expanding with secondment of additional staff to the programme by partners. The implementation of IVM activities could benefit from the existing staff. Moreover, the National Environmental Health Institute at Mulago, continues to train new VCOs providing a steady supply of well trained personnel that can be employed to support IVM activities at all levels in all sectors.
3. **Procurement of malaria commodities**: NMCP and partners have been able to mobilize adequate resources to support UCC in 2014 and 2017 and also LLINs for routine distribution.
4. **Malaria service delivery system**: A district health system with potential to plan and implement IVM related activities exists in all local governments (including ANC and EPI clinics and schools), which if harnessed could be used to rapidly increase coverage of vector control interventions.
5. **Coordination framework:** During UCC a national coordination committee is formed under senior leadership of MOH to provide policy guidance and address bottlenecks for UCC implementation at national level, which facilitates successful UCC.

Constraints

The following constraints have however affected implementation of IVM activities:

1. **Limited funding for IRS operations:** Planned expansion of IRS from 10 to 25 districts was not possible due to lack of requisite funds for insecticides and operations. Also, the huge manpower, logistical and environmental compliance requirements are costly if the country is to implement effective IRS over a sustained period of time.
2. **Implementation framework:** The current centrally implemented approach to deployment of IVM activities negates the potential efficiency of using the existing district-based health delivery system.
3. **Choice and quality of insecticides for IRS:** Emergence of resistance to cheaper insecticide options such as pyrethroids and DDT has limited the choice of insecticides and scale up of IRS interventions as the organophosphates and carbamates are much more expensive with more stringent environmental requirements. There are doubts about the quality of insecticides in the private sector given the weak quality assurance system in place.
4. **Attitude, practice and perception:** Poorly implemented ACSM and community sensitization affects use of available LLINs. There is lack of strong interpersonal communication to eliminate misconceptions about IVM interventions.
5. **Sustainability of interventions:** Donor dependence to finance IVM interventions casts doubts on sustainability of the current gains.

5.1.5: Conclusions and Action points

Conclusions

- The scope and scale of IVM interventions – limited coverage of IRS, stagnating LLIN coverage - are likely not to have impact in interrupting malaria transmission and hence reduction in malaria incidence.
- Limited utilization of existing health service delivery framework at all levels impedes the potential achievements of a well-implemented IVM strategy.
- LSM has stayed too long at study and pilot phase, with little or no integration into routine NMCP implementation framework.

Action points

1. Government of Uganda should explore other financing mechanisms beyond the current donor-dependent approach including utilizing the private sector under the PPP framework to increase financing for key IVM interventions of IRS and LLINs.
2. NMCP should facilitate and utilize the already existing decentralized implementation approach to allow local government take lead in the implementation of IVM interventions in their jurisdiction, strengthening ownership and sustainability.
3. MOH/NMCP and partners should explore feasibility and utilization of additional channels for routine distribution of LLINs such as to include schools and community distributions if Uganda is to maintain and sustain the gains of mass campaigns.

5.2: Level of attainment of Case Management outcome targets

The case management policy goal is to reduce morbidity and prevent mortality attributable to malaria which is implemented through ensuring early diagnosis and prompt effective treatment of malaria and all suspected malaria cases are subjected to parasitological testing.

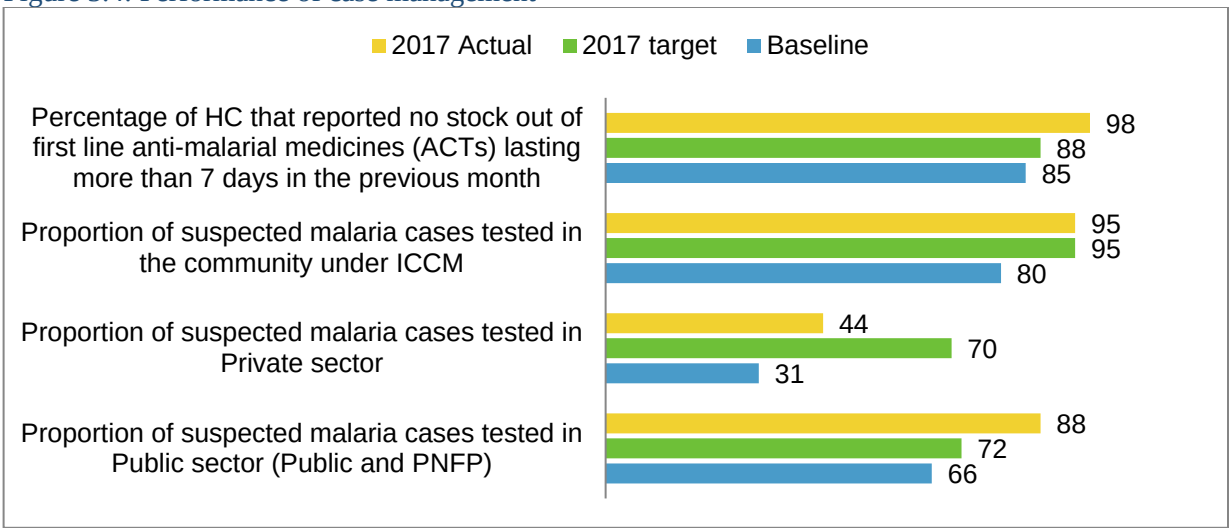
Case management (CM) outcome indicators and targets for the UMRSP (2014 -2020) include:

1. Proportion of suspected malaria cases tested in Public sector (Public and PNFP). The baseline was 66% (HMIS 2013) and targeted to reach 72% by 2017
2. Proportion of suspected malaria cases tested in Private sector. The baseline was 31% (HMIS 2013) and targeted to reach 70% by 2017
3. Proportion of suspected malaria cases tested in the community under ICCM. The baseline was (80% ACT Watch 2011) and targeted to reach 95% by 2017
4. Percentage of HC that reported no stock out of first line anti-malarial medicines (ACTs) lasting more than 7 days in the previous month. The baseline was 85% (HMIS 2013) and targeted to reach 88% by 2017

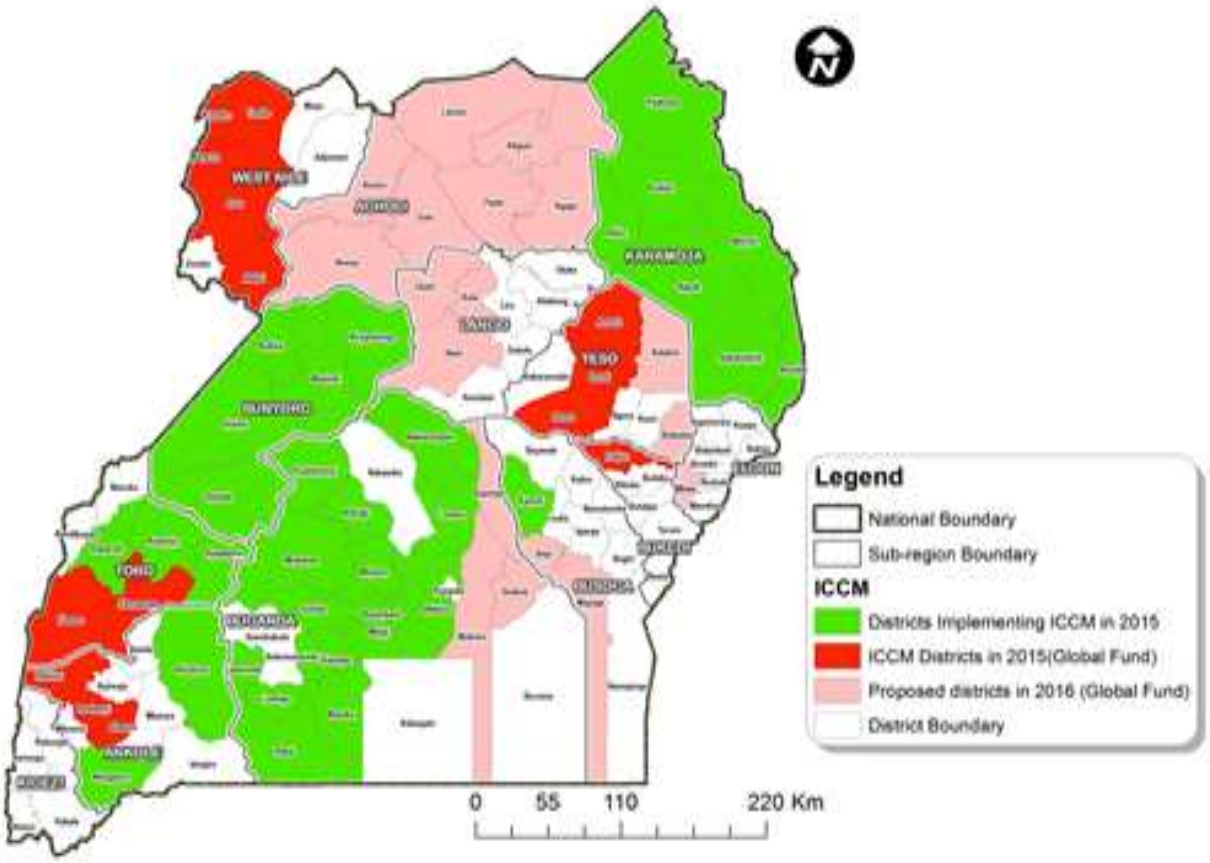
Figure 5.4 shows achievements in case management indicators against set targets at midterm. All the indicator targets were attained at midterm except that for proportion of suspected malaria cases tested in the private sector.

5.2.1: Progress towards UMRSP Case Management outcome indicators

Figure 5.4: Performance of case management



It is observed that there is improved availability of ACTs at all health facilities as well as increased confirmatory diagnosis of malaria both in the public and PNFP facilities.



With regard to Integrated Community Case Management (iCCM), Figure 5.5 shows districts where different partners currently implement iCCM. While the tools for capture of VHT information exist, they are yet to be integrated in to the DHIS2. Therefore, the reported increase in testing and treatment of fevers by VHTs is from specific partner reports.

Figure 5.5: Districts for ICCM delivery models

The main implementers of iCCM include TASO, UNICEF and Malaria Consortium, reaching 60 districts in 2017.

Integrated CCM is currently implemented in 26 districts across Uganda using GF resources, 19 by UNICEF and 15 by Malaria Consortium. Due to a number of challenges identified in the rapid assessment of 2016[5] such as procurement delays and lack of funds for consumables (gloves and safety boxes), there was delayed implementation of activities in the first 15 districts *(Rapid Assessment of iCCM Implementation in the Context of the Global Fund Grant in Uganda pg.14-15)*. However, specific strategies were instituted to address those challenges. To-date, 25,000 (89%) out of targeted 28,003 VHTs have been trained on iCCM and provided with required commodities to manage malaria, pneumonia and diarrhoea at community level. This has improved the fever management at community level as well as referrals from communities to health facilities.

Furthermore, the VHTs trained through this intervention are used for delivery of all health programmes at the community level thus contributing to overall Health Systems Strengthening.

[5] *Rapid Assessment of iCCM Implementation in the Context of the Global Fund Grant in Uganda*

5.2.2: Appropriateness of the indicators

The Malaria case management outcome indicators, targets and baseline were appropriately phrased and smart.

5.2.3: Enablers and constrainers

Enablers

The observed performance of the programme is attributed to the following enabling factors:

1. **Policies and guidelines**: Case management policies and guidelines exist and have been updated.
2. **Human resources**: Health workers in health facilities spend nearly 30% of their time managing malaria and the proportion of filled positions as per the staffing norms has increased from 56% to over 70% nationally. In addition, their technical competence to manage malaria has been enhanced through nationwide training in integrated management of malaria by both NMCP and partners.
3. **Procurement of malaria commodities**: Availability of both ACTs and RDTs has been greatly improved with procurements by both government and development partners including Global Fund, DFID and PMI. Also, facilities report increased availability of these commodities at all times due to regular distribution by NMS. More so, ACTs and RDTs are free commodities provided outside the credit line.
4. **Malaria service delivery system**: There is an existing health service delivery system where both diagnosis and treatment are available at all levels. Availability of RDTs and subsidized ACTs, which are also over the counter medicines, in the private sector bridges gaps for any stock-outs of these commodities.

Constraints

The following constraints affected implementation of case management activities.

1. **Supply chain management:** While case management commodities are readily available, there is both over and under stocking as a result of parallel methods of quantification between QPPU (morbidity method) at MOH and NMS (historical distribution) and poor inter and intra district redistribution.
2. **Attitude, practice and perception:** Poor health worker and client attitudes affects testing and adherence to test results. This is as a result of limited interpersonal communication to both health workers and clients to respect test results, necessary to eliminate treatment of non-malaria fevers with ACTs.
3. **Implementation framework:** The private sector is an important player in case management however; there is limited supervision of this sector by MOH and lack of reporting to the national HMIS system. Also, implementation of iCCM is hindered by poor coordination at national level, patchy implementation at district level with no emphasis to hard-to-reach areas and lack of non-malaria commodities.
4. **Mechanism to enforce adherence to guidelines:** While MOH has developed all appropriate case management guidelines for both uncomplicated and severe malaria, there is limited adherence in both public and private sectors. In particular, there is poor adherence to use of IV artesunate reserved for severe malaria management as it is used sometimes to treat uncomplicated malaria.
5. **Quality of RDTs and ACTs:** Quality assurance and regulatory systems for RDTs needs to be strengthened especially in the private sector. There has also been a delay in conducting therapeutic

efficacy studies as recommended by WHO every two years, raising the risk of failure to detect in time resistance to ACTs.

6. **Sustainability of interventions**: Provision of case management commodities is heavily donor dependent affecting sustainability and future adherence to national guidelines.
7. **Refugees**: The high influx of refugees to Uganda exerts a high pressure to the health system leading to diversion of planned resources to meet the needs of malaria management in this vulnerable population with increased risk to malaria.

5.2.4: Conclusions and Action points

Conclusions

- There is increased availability of malaria case management commodities especially in the public sector. The poor coordination between MOH, NMS, districts and facilities leads to poor management of available malaria case management commodities e.g. overstocking of ACTs.
- The implementation of iCCM does not allow for achievement of desired results and needs to be reviewed to address identified bottlenecks.
- The recent influx of refugees into the country places an extra burden on a health system that already has challenges in service delivery.

Action points

1. MOH and NMCP should streamline the forecasting, quantification and distribution of case management commodities with NMS and Districts for efficient and effective supply chain management.
2. MOH and partners should immediately implement the various recommendations on iCCM from previous reviews.
3. NMCP and partners including regulatory councils should proactively engage private sector in sector planning, supervision and monitoring to ensure adherence to policies, guidelines and reporting.
4. MOH and the research institutions under the guidance of WHO should proactively conduct therapeutic efficacy studies of the first-line anti-malarial drugs in order to document their sensitivity and inform policy.
5. MOH should work with Office of the Prime Minister (OPM) and related agencies to assess needs for refugees and incorporate these in appropriate budget through a multi sectoral approach.

5.3 Level of attainment of malaria in pregnancy outcome targets

The Malaria in Pregnancy (MiP) goal is to reduce maternal morbidity and prevent maternal mortality due to malaria and prevent infant mortality and disability. Policy Objectives are: (i) To ensure every pregnant woman sleeps under a long lasting insecticidal net (LLIN) throughout her pregnancy and thereafter and (ii) To ensure pregnant women receive intermittent preventive treatment in pregnancy (IPTp) with an appropriate medicine and (iii) Receive early diagnosis and prompt management of malaria episodes.

MiP outcome indicators and targets

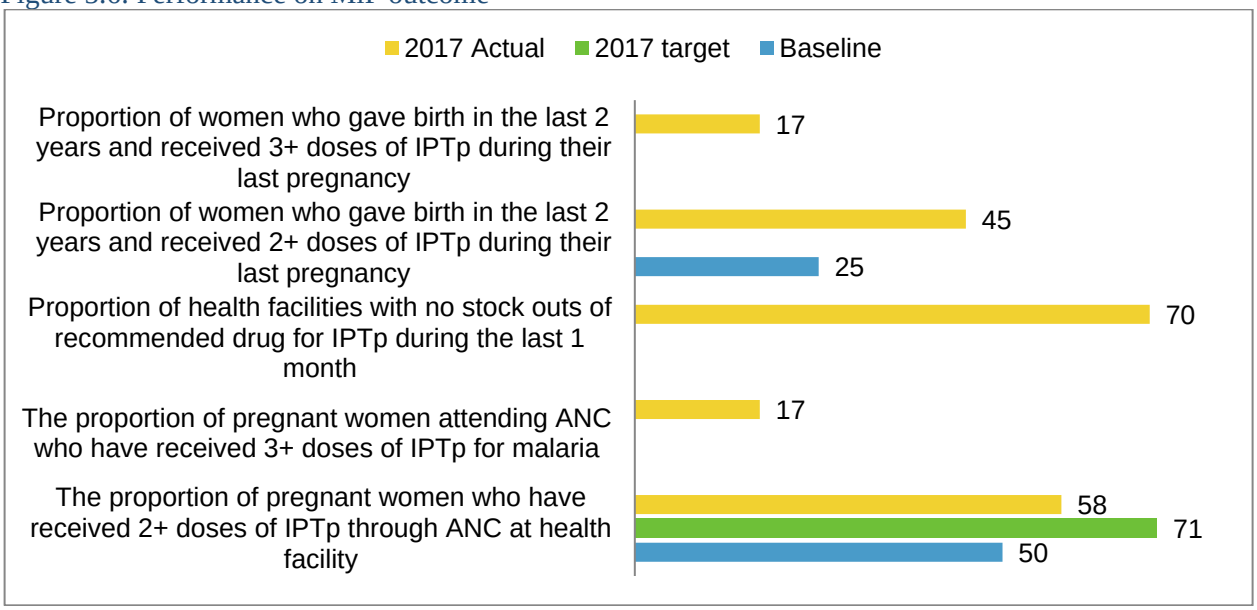
MiP outcome indicators and targets for the UMRSP (2014 -2020) include:

1. Proportion of pregnant women who have received 2+ doses of IPTp through ANC at health facility**.** The baseline was 50% (HMIS 2013) and targeted to reach 71% by 2017
2. Proportion of pregnant women attending ANC who have received 3+ doses of IPTp for malaria. No baseline or target were set to track this indicator
3. Proportion of health facilities with no stock outs of recommended drug for IPTp during the last 1 month. No baseline or target were set to track this indicator
4. Proportion of women who gave birth in the last 2 years and received 2+ doses of IPTp during their last pregnancy. The baseline was 25% (UDHS 2011) no target was set
5. Proportion of women who gave birth in the last 2 years and received 3+ doses of IPTp during their last pregnancy. No baseline or target were set to track this indicator

5.3.1: Progress towards UMRSP MiP outcome indicators

Figure 5.6 shows attainment of MiP targets at midterm. No targets were set making it difficult to assess progress with the exception of proportion of pregnant women who had received 2+ doses of IPTp through ANC

Figure 5.6: Performance on MiP outcome



It is observed that about 30% of facilities report stock out of SP which may be a contributor to poor attainment of IPTp targets.

5.3.2: Appropriateness of the indicators

The MiP outcome indicators, targets and baselines were appropriately phrased and smart. However, the indicators did not have baseline values and targets making it difficult to measure progress/performance.

5.3.3: Enablers and constraints

Enablers

The observed performance of the programme is attributed to the following enabling environment.

1. **Policies and guidelines**: Malaria in pregnancy guidelines have been updated to reflect latest WHO guidance.
2. **Human resources**: There are available health workers in both public and private facilities to support implementation of malaria in pregnancy interventions at these levels. Furthermore, VHTs at community level exist to mobilize and sensitize pregnant women to attend ANC and receive IPTp thus presenting an opportunity to enhance uptake of IPTp.
3. **Procurement of IPTp commodities**: There are abundant quantities off SP at NMS although it is not yet a free commodity so facilities have to procure it using their credit line.
4. **Malaria service delivery system**: The existing health service delivery system provides a platform for provision of malaria in pregnancy services.

Constraints

The following constraints affected implementation of MiP activities.

1. **Supply chain management:** While SP is readily available at NMS, it is not a free commodity like ACTs forcing facilities to use their limited credit line to procure SP. This has led to stock outs of SP in some facilities, as they do not often prioritize SP in their orders. There is no budget provision to support other commodities (clean water and cups) required for implementation of directly observed treatment for SP.
2. **Implementation framework:** The DHIS2 has not been updated to provide for IPT3+ reporting, leading to difficulty in measuring its performance through the routine DHIS2
3. **Mechanism to enforce adherence to guidelines:** while guidelines for MiP have been updated, their dissemination is limited across the health service levels.
4. **Attitude, practice and perception:** Both pregnant women and health workers have poor perceptions to administration of SP arguing that presumptive treatment is unnecessary as they are not sick. Also the set up of ANC services often makes it difficult for pregnant women to access SP as pharmacy is often a distance away from ANC clinic. Also there is wide gap between ANC attendance and IPTp doses thus resulting in missed opportunities to provide SP, as well as pregnant women attending first ANC late.

5.3.4: Conclusions and Action points

Conclusions

- Uptake of recommended doses of IPTp is too low to have impact on malaria in pregnancy outcomes.
- The lack of DOTs support commodities affects uptake of IPTp in the ANC.
- SP stock outs exist as facilities do not prioritize procurement of this drug using their credit line.

Action points

1. As part of the mass action against malaria, VHTs, community leaders and spouses should mobilize and sensitize pregnant women to attend ANC as scheduled and health workers ensure no missed opportunities to provide IPTp.
2. Government should provide SP as a free commodity like ACTs to eliminate stock outs.
3. NMCP should complete dissemination of malaria in pregnancy guidelines and job aids to all health workers.
4. Local governments should monitor and respond to stock-outs of SP like they do for ACTs and RDTs

5.4: Level of attainment of Social and Behavior Change Communication outcome

The SBBC Policy Goal is to ensure stakeholder commitment for malaria control and eventual elimination.
The policy objectives are: (i) To ensure that malaria control and elimination strategies are prioritized by decision makers and communities to warrant increased resource allocation, (ii) To enhance collaboration among stakeholders in malaria control and eventual elimination, (iii) To promote desired changes in knowledge, attitudes and behavior towards malaria control and eventual elimination.

UMRSP SBCC outcome indicators and targets

1. Proportion of under 5 children with confirmed malaria receiving correct treatment (ACT) within 24 hours of onset of symptoms
2. Proportion of care givers who know malaria prevention measures

5.4.1: Progress towards MSP SBCC outcome indicators

1. Proportion of under 5 children with confirmed malaria receiving correct treatment (ACT) within 24 hours of onset of symptoms
   - While no baseline and targets were set for this indicator, the MIS 2009 and 2014 indicated performance increased from **14% to 48.9%.**
2. Proportion of care givers who know malaria prevention measures
   - This indicator also had no baseline and target values defined in the UMRSP but performance was **90.7%** in MIS 2014 and the 2016 achievement is yet to be reported once the full UDHS report is released.

During the review period, the NMCP and partners conducted several mass media campaigns targeted at increasing knowledge of malaria interventions including the ‘CHASE Malaria campaign’ in support of UCC and the partner funded ‘Obulamu’ radio programme leading to increase in knowledge of over 90%.

Furthermore, NMCP and partners have developed sets of information materials targeting different audiences. Messages have been segmented based on social and economic status (Urban, peri-urban and rural), language, vulnerability and level of influence. As per the Communication plan, the messages are based on the channel of communication either print, broadcast or social media.

5.4.2: Appropriateness of the indicators

The SBCC indicators are composite making it impossible to measure the support of SBCC towards effectiveness of specific interventions. The indicators capture only two interventions, namely; health-seeking behavior in under-fives and knowledge of caregivers on malaria prevention measures. It is silent on diagnostic testing, malaria in pregnancy, and practice. However, there is paucity of robust SBCC indicators for malaria at global level.

5.4.3: Enablers and constraints

Enablers

The observed performance of the programme is attributed to the following enabling environment.

1. **Policies and guidelines**: Availability of the new malaria communication strategy and guidelines enhances implementation of SBCC interventions.
2. **Human resources**: There are several opportunities to use existing human resource at districts and with partners to implement SBCC activities.
3. **Malaria service delivery system**: Both at the national level (the health promotion department) and district level (health educators) there is an established framework for conducting SBCC activities. Furthermore, NMCP and partners have formed SBCC thematic working group that meets regularly.

Constraints

The following constraints affected implementation of SBCC activities.

1. **Implementation framework:** While there are several partners involved in SBCC their activities are poorly coordinated. More so, planned activities at national level are driven by NMCP with limited involvement of districts, without clear set targets.
2. **Attitude, practice and perception:** The current strategies focus more on mass media rather than interpersonal communication, which if properly implemented is likely to lead to appropriate behavior change. The strategies implemented are also not focused on social mobilization for mass action against malaria.
3. **Refugees**: Current messages are generally provided in the 8 major languages of Uganda, excluding the refugees, hindering access to the malaria messages by the refugees.
4. **Sustainability of interventions:** SBCC activities are poorly financed and largely dependent on partner plans and budgets.

5.4.4: Conclusions and Action points

Conclusions

- The impact of SBCC on reducing malaria morbidity and mortality could not be assessed due to the inappropriateness of selected SBCC indicators.
- There is heavy reliance on mass media approaches, which are known to increase awareness among the population with limited impact on knowledge and behavior change.

- The existence of the SBCC thematic group has not improved coordination for SBCC activities and implementation modalities.

Action points

1. NMCP should urgently develop and implement a mass mobilization and multi-sectoral stakeholder plan for individual, household, community, district, institutional and national level action against malaria, to create a mass movement against malaria as a major public health problem, to realize "malaria smart" families and communities.
2. NMCP and partners should strengthen planning, coordination and implementation of SBCC activities at national and sub national levels
3. NMCP should strengthen and operationalize effective M&E system for SBCC, with appropriate indicators, baselines and targets upon which to measure progress.
4. NMCP and Partners should increase funding for SBCC to enhance uptake of interventions

5.5: Functionality of Programme Management support system

The core functions of Programme Management are to provide Leadership and Oversight, develop policies, strategic, operational and annual work-plans, undertake advocacy, dialogue and consensus building for malaria, Resource mobilization and grants management, Human resource management and capacity building, Multi-sectoral and stakeholder coordination and partnerships, Programme reviews, and Procurement and Supply Management.

Only one indicator is provided in the UMRSP for tracking programme management: proportion of actions generated from RBM coordination meetings that are implemented.

5.5.1: Progress towards Programme Management System outcome indicators

Policies and Guidelines

- The Programme has the national malaria control policy 2011. Due to new WHO technical guidelines, the Global Technical Strategy and the evolving national malaria context, the national malaria control policy needs to be updated.
- The MOH and NMCP have weak enforcement of the implementation of appropriate provisions of the Uganda Public Health Act 2000 (Uganda Laws Chapter 268, Section XI, Articles 93-104).

Programme Structure/Management Systems

- Recently the Ministry of public service approved a new structure for the MoH where NMCP was elevated to a Division of the MoH headed by an Assistant Commissioner. Elevating NMCP to a department will enable it participate in key decision-making, policy and resource allocation which are crucial in driving the malaria elimination efforts.

Programme governance and coordination

- The NMCP now a Division is headed by the Programme Manager at the level of Assistant Commissioner Health Services. To enhance division of labour the Programme is divided into Units along the Thematic areas including IVM, Case Management, MiP, SBCC, SMEOR and the yet to be operationalized Programme Management Unit.
- A capacity assessment of NMCP to deliver the UMRSP was conducted in 2015 and a recommended Structure was adopted against which partners supported positions within that structure. About 70% of the positions have been filled by partner supported TAs.
- The dual structure at the NMCP has associated challenges. There is a lack of clarity on functional job descriptions for staff resulting in role overlaps/conflicts. Individual performance plans, key performance management tools are non-existent.
- Oversight and Guidance
    - There is no National Malaria Control inter-sectorial commission for coordination of multi-sectoral partners. Neither is there an expert/advisory committee to independently review and advise on malaria issues at country level. There are Thematic Working Groups in place and meet quarterly and their recommendations are cascaded through the MoH structures up to HPAC/top management

Linkages within the MOH

- Within the Ministry of Health, the NMCP at Division level reports to the Commissioner National Disease Control Department who in turn functionally reports through the Director Clinical and Community Services to the Director General of Health Services who is the technical head of the Ministry of Health.
- The key divisions and units within MoH that NMCP has close linkages with include the Reproductive Health Division on matters of Malaria in Pregnancy; Child Health Division on matters of iCCM; Pharmacy Division on matters of medicines procurement planning and pipeline monitoring; and the Health Information Division on matters of malaria data reporting. The coordination between NMCP and CHD on iCCM is dysfunctional with each asserting leadership for iCCM as detailed in the WHO expert assessment report that calls for a high level oversight structure for iCCM. The RHD has not fully taken on its responsibility for the MiP interventions and delivery on the related indicators. This leaves NMCP doing more than technical support to RHD on MiP. While NMCP together with the pharmacy Division works through the QPPU in medicines quantification based on reported cases, the NMS performs parallel quantification based on distribution and this partly underlies the big variation between ACT consumption versus actual reported cases of malaria (31 million ACT doses against 14 million cases). The collaboration with the Division of Health Information should be leveraged to having revised reporting tools that are more responsive to the needs of NMCP including capture of VHT reports into the DHIS2.

Linkages with Other Key Stakeholders

- Other key stakeholders that NMCP maintains close linkages with are the National Drug Authority on matters of medicines and health supplies quality assurance and pharmacovigilance; the Uganda National Bureau of Standards on LLINs quality testing, the National Medical Stores and Joint Medical Stores on

matters of medicines and health supplies warehousing and distribution in the public and private sectors respectively; the Meteorology Department of the Ministry of Water and Environment on climate based epidemic forecasting; and the Ministry of Finance Focal Coordination Unit and the Country Coordinating Mechanism (CCM) on matters of the Global Fund financial performance monitoring.

- The donor partners that NMCP has close linkage with include PMI/USAID, DFID/UKAID and UNICEF as the main in country donors and the Global Fund based in Geneva, while Against Malaria Foundation (AMF) has been supportive in the LLIN universal campaigns. World Health Organization has played a leading role in technical guidance to malaria programming besides contributing financial resources to support planning and implementation.

  There are a number of operational partners in malaria programming and these include The AIDS Support Organization as the second Principal Recipient (PR2) for the Global Fund; the USAID funded projects of MAPD (Malaria Consortium and JHPIEGO), RHITES, IRS (Abt Associates), CHC (Family Health International 360) and IDI; Global Fund Sub-Recipients PACE, Pilgrim, First Pharmacy, HEPS and ONES Enterprise; Research Institutions especially IDRC and School of Public Health Makerere University; and Church of Uganda as an independent operating partner.

Programme Monitoring Mechanisms

- The NMCP has a Monitoring and Evaluation unit that has responsibility for the entire SMEOR thematic area.
- Besides the DHIS2 mechanism for programme monitoring, the NMCP also relies on sentinel site reports across the country for monitoring information as well as regular surveys (MIS, DHS and SARA) and research studies.

Coordination Mechanisms

The supporting systems for the partnership are the doctrine of the “3 ones” (one strategic plan, one M&E framework and one coordinating authority) and, the RBM partnership forum that brings together all malaria partners is key as an in-country supporting mechanism as well as the Thematic Working Groups where malaria technical updates, policies, guidelines and related issues are discussed.

Coordination

- The existing framework for partnership coordination includes the quarterly RBM partnership forum meetings and the monthly Thematic Working Group meetings. There is no inter-sectoral coordination forum and no expert malaria advisory technical committee.
- At the sub-national level, NMCP has two tiers to work with. At the regional level, the Regional Performance Monitoring Teams were established with GF funding to replace the MoH Area Teams to provide more effective and efficient support supervision to the districts within their regions as districts had become too many to be effectively managed from the centre. The second tier is the districts where implementation takes place. Coordination with both these tiers have major weaknesses. The RPMTs were

established with GF resources with the plan of government taking over responsibility for funding. The funding takeover has not effectively happened leading to a dysfunctional regional structure. The government is reviewing the strategy leaving a coordination vacuum in the meantime. Service delivery is the constitutional responsibility of District Local Governments. Accordingly, the NMCP has to decentralize malaria service delivery to the districts and concentrate on core functions outlined at the beginning of this chapter. This desired decentralization has not effectively happened and NMCP still gets engrossed in service delivery at district and lower levels thus affecting performance on its core functions. Districts need to be proactively empowered to assume their mandate in malaria service delivery through technical, logistical and management capacity building, malariology training, strategic and operational planning and supervision.

Delivery of appropriate inputs, outputs or services

- Availability of up to date Malaria Policy
  - There is a national malaria policy developed that has been in use since 2011. This policy however requires updating to align it to changes in WHO technical guidelines in malaria prevention and treatment as well as surveillance since 2011. This policy update has been planned for and should be completed by December 2017.
- Availability of up to date MSP
  - The current MSP (UMRSP) 2014 to 2020 under review was developed in 2014 following an MTR of a previous MSP that recommended that a new one be developed. However, no business and annual plans were developed prior to this MTR. The action points generated by the MTR will guide the amendment of the UMRSP as an addendum to ensure it is aligned to GTS and recent updates
- Availability of up to date M&E plan and implementation guidelines
  - The UMSRP is backed by an elaborate M&E plan 2014/15 to 2020/21 and implementation guidelines for all the major interventions

5.5.2: Conclusions and Action points

Conclusions

- While the NMCP has the 6-year strategic plan in place (UMRSP), there is no 3-year business plan and annual plans to operationalize the strategic plan leading to poor tracking of implementation of the strategies, difficulty harmonizing partner annual work plans and lack of annual performance plans for units and staff of NMCP.
- Coordination structures that allow for responsible collaboration at national and sub-national levels are still weak and some non-existent.
- MoH/NMCP have been able to achieve some gains in malaria control over the review period but there is need for new innovations to accelerate progress towards reducing malaria morbidity and mortality.
- The funding to malaria control has made positive impact on overall Health System Strengthening; iCCM has created a robust network of VHTs for delivery of all health services at the community level; the mTRAC (eHMIS) started as a malaria tool has been expanded to cover a wide range of health sector reporting needs

as well as the support to printing of HMIS reporting tools is a boost to the health sector information management system; and supply of microscopes for malaria microscopy has strengthened laboratory capacity generally.

Action points

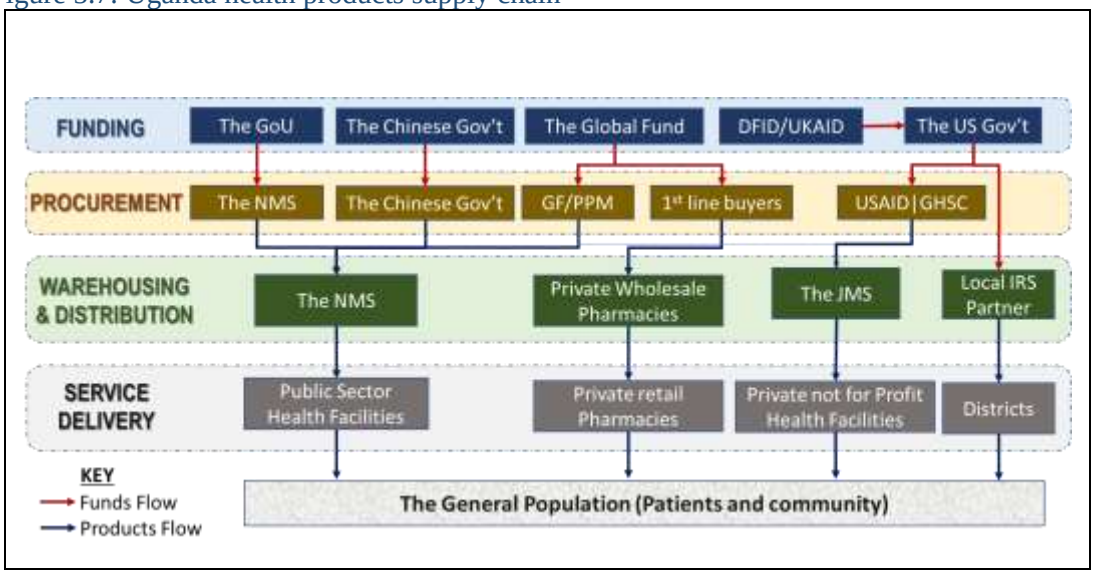
1. The NMCP should revise the Malaria Policy and align it to the global guidance and new trends at country level
2. The NMCP should streamline planning to ensure that resources mobilized are properly allocated and effectively utilized to attain set targets by 2020.
3. NMCP should develop a resource mobilization and business plan for the period 2018 – 2020 to generate resources beyond the traditional sources of financing.
4. Each year by April 30, the NMCP should conduct annual review and planning for the following year to improve programme planning, harmonization, implementation and evaluation.
5. NMCP should facilitate decentralization of malaria service delivery to the districts to actualize the district leadership in malaria programme implementation.
6. An interim regional structure of DHO teams should be established in lieu of the RPMTs for effective and efficient support supervision of districts.
7. MOH/NMCP should establish a mechanism of working with agencies like HMU for enforcement of regulations and laws, accountability of malaria commodities and punishment of offenders including pilferage.
8. NMCP with partners should develop national plan for population mobilization towards multi-sectoral and **mass action** for malaria control and elimination.

5.6: Level of attainment of Procurement Supply Management outcome

The PSM function includes the entire process of selection, forecasting/quantification, procurement, procurement planning, customs clearance, warehousing, distribution, inventory management and ensuring rational use of medicines. Currently, the procurement function is carried out by multiple actors namely; the Procurement and Disposal Unit (PDU) of MoH under the PS/Health for non-health products, the Global Fund Pooled Procurement mechanism (PPM), the USAID Global Health Supply Chain Project and National Medical Stores (NMS) for products funded by the Global Fund, US government and Government of Uganda respectively.

Selection, quantification/forecasting and procurement planning is carried out by the NMCP, with support from Quantification and Procurement Unit (QPPU) of the Pharmacy Department. Distribution of malaria commodities is majorly carried out by NMS (public sector), and JMS (PNFP sector). Distribution of malaria commodities at NMS is both by push (allocation) and pulls (ordering) systems.

Figure 5.7: Uganda health products supply chain



PSM outcome indicators and targets

Only one PSM Outcome Indicator with targets was provided in the UMRSP

1. "Percentage of HCs that reported no stock out of first line anti-malarial medicines (ACTs) lasting more than 7 days in the previous month."

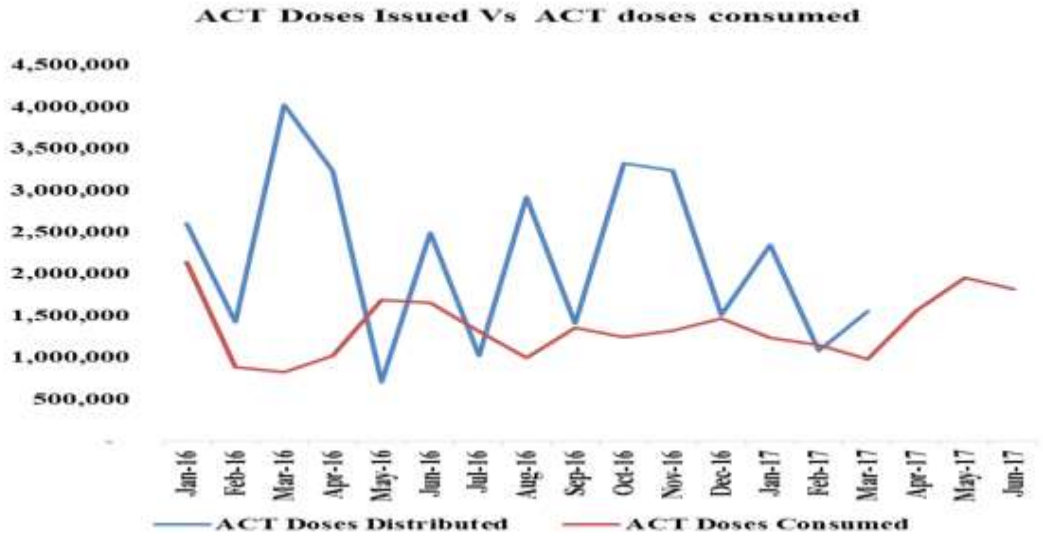
5.6.1: Progress towards PSM outcome indicators

- Trends of commodities (RDT, anti-malarials and LLINs) stock-outs
    - Stock out rates for ACTs have reduced from 15% in 2013/2014 to 8% in 2017
    - A recent survey indicated overstocking of ACTs in health facilities at all levels
    - Stock out rates for mRDTs is currently at 3%
    - There is no system in place for routinely monitoring stock status for injectable artesunate and routine LLINs
- Procurement Indicators – timely delivery
    - Procurements for anti-malarial commodities are at an average of 90% (planned versus procured)
    - Timeliness of delivery of anti-malarial commodities is not consistently monitored by NMCP but findings during support supervision indicate that there are delays experienced in the 2 monthly NMS deliveries for anti-malarial commodities. Routine nets are delivered whenever stock is received at the central warehouses, a system not favoring for proper stock management at the health facilities.
    - The procurement capacity for IRS within the public sector remains weak and requires enhancement
- Quality Trends - Post-market surveillance of anti-malarials; loss rate

- Post market surveillance of anti-malarials is conducted by NDA and has helped in checking he potential risk of expired, fake and counterfeit commodities. However, the surveillance reports are not routinely made available to NMCP.

Health Facilities have reported significant over-stocks and under-stocks across the different levels over last 18 months before the review as shown in Figure 5.8.

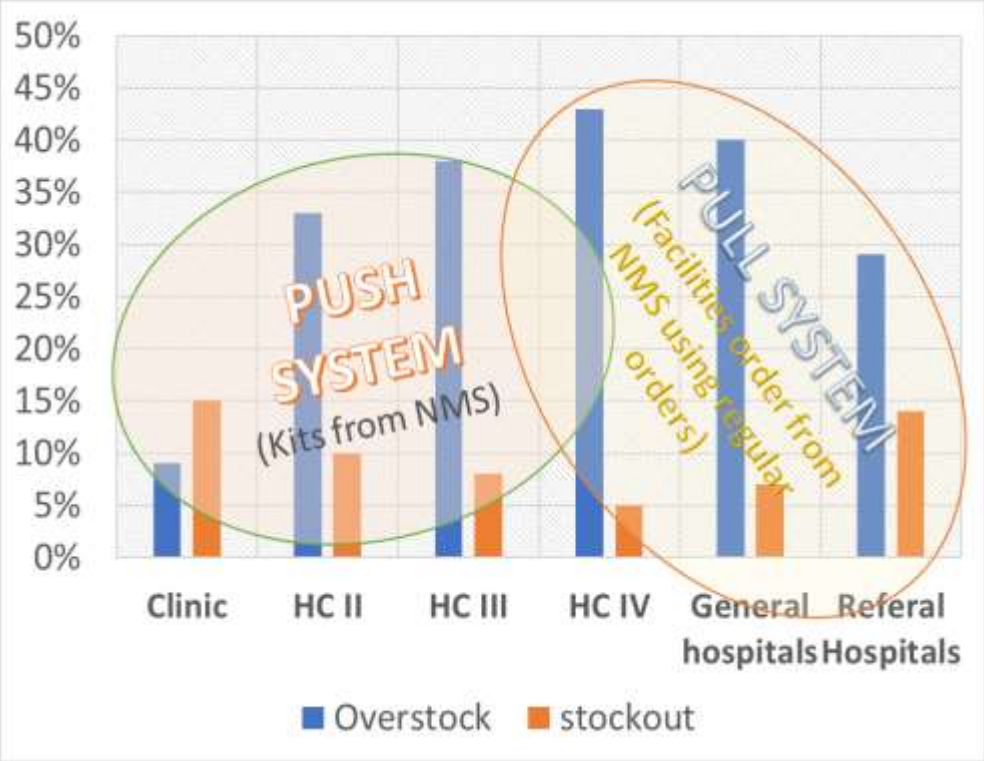
Figure 5.8: ACT doses distributed and consumed



The total ACT doses distributed by NMS are more than double the reported cases (31 million doses of ACTs against 14 million reported cases). This illustrates the inability of current system to be able to detect problems in stock management, procurements and overall quality of PSM services for all products. It also calls for the need to strengthen accountability not only for commodities but also for results.

Imbalances in stock availability at the Health Facility:

Currently, the stock availability is at 93%. However, facilities have reported stock imbalances with a few stocked-out.



Supply Chain Management

5.6.2: Appropriateness of PSM outcome indicators

The PSM indicator is not appropriately phrased and smart as measuring stock outs over a period of 7 days in a month is not sensitive enough to capture stock outs that last less than 7 days and yet the absence of such a critical lifesaving commodity for even a single day could result in avoidable mortalities.

However, the PSM outcome indicator, targets and baseline are appropriate as set in the UMRSP with a 2013 baseline of 83% increasing to 92% by 2020 and mid-term target of 88%. The availability of ACTs has significantly improved to 93% by mid-term; however, this comes with many overstocks of the same commodity in Health facilities.

5.6.3: Enablers and constraints

Enablers

The observed performance of the PSM function of the programme is attributed to the following enabling environment.

1. **Policies and guidelines**: There is procurement and supply management guidelines in place including availability of appropriate PSM tools and institutions such PPDA, QPPU and NMS.
2. **Human resources**: There exist adequate resources to support PSM functions at NMS, MOH and partners.
3. **Procurement of malaria commodities**: both government and partners procure Malaria commodities.

4. **Malaria service delivery system**: there exists a health service delivery system to support malaria PSM functions at national and district levels.

Constraints

The following constraints affected implementation of PSM activities.

1. **Procurement and Supply chain management:** There are multiple and uncoordinated centers for malaria commodities quantification, distribution and reporting leading to over and under stocks of malaria commodities at facility level compounding challenges associated with the kit system.
2. **Attitude, practice and perception:** The failure to use quality consumption data to inform procurement of malaria commodities is contributory to the excess supply of ACTs in the public system.
3. **Sustainability of interventions:** Majority of malaria commodities are donor dependent risking the sustainability to ensure adequate quantities of malaria commodities.

5.6.4: Conclusions and Actions points

Conclusions

- There is reduced stock out of malaria commodities which has contributed to improved malaria case management and reduction of mortality.
- The parallel quantification systems (MoH and NMS) have contributed to over flooding of the country with anti-malarials.

PSM Action points

1. MOH, NMS and partners should urgently streamline malaria commodity quantification, procurement and distribution to meet the actual needs for malaria case management.
2. MOH and NMS should strengthen the ordering and reporting systems for malaria products to ensure effective accountability for all procured and distributed ACTs.
3. MOH and NDA should strengthen post market surveillance for fake and counterfeit medicines and strengthen the pharmacovigilance.


ANALYSIS
MANAGEMENT
LOGISTIC
SCM
SUPPLY CHAIN MANAGEMENT
TIME TO MARKET
PROFIT
PLAN
PROCUREMENT
DISTRIBUTION

5.7: Level of attainment of SMEOR outcome indicators

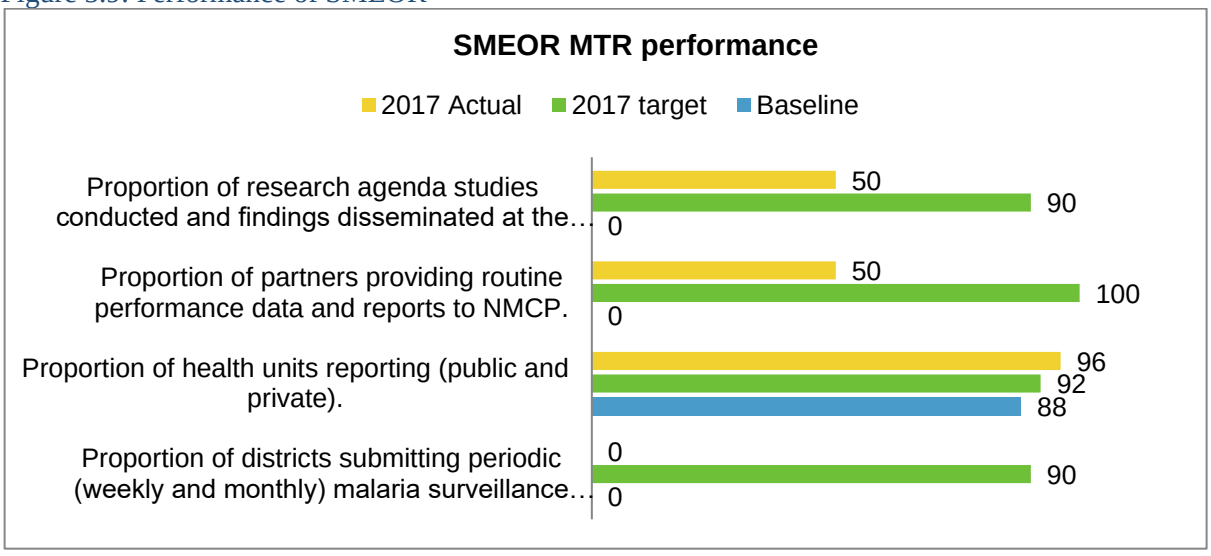
The primary role of SMEOR is to monitor and evaluate implementation of all activities outlined in the Uganda Malaria Reduction Strategic Plan. The planning and implementation of malaria reduction efforts should be based on entomological and epidemiological analysis and application of interventions suitable for specific local malaria situations

UMRSP SMEOR outcome indicators and targets

1. Proportion of districts submitting periodic (weekly and monthly) malaria surveillance reports with in stipulated time frames. The baseline was 0% with a 90% Midterm target (2017)
2. Proportion of health units reporting (public and private). The baseline was 88% (UDHS) with a 92% Midterm target (2017
3. Proportion of partners providing routine performance data and reports to NMCP The baseline was 0% with a 100% Midterm target (2017
4. Proportion of research agenda studies conducted and findings disseminated at the national malaria fora. The baseline was 0% with a 90% Midterm target (2017)

5.7.1: Progress towards MSP SMEOR outcome indicators

Figure 5.9: Performance of SMEOR



5.7.2: Appropriateness of the indicators

The indicators are not appropriate for an effective surveillance, monitoring and evaluation and operational research.

5.7.3: Enablers and constraints

Enablers

The observed performance of the programme is attributed to the following enabling environment.

1. **Policies and guidelines**: The national HMIS/ DHIS2 system, mTrac and other data capture and collation tools are in place to facilitate collection, storage, retrieval, analysis and reporting of data from all levels. M & E guidelines and tools exist such as the M & E plan. The mTrac initiated as a malaria reporting tool has been expanded to report on various indicators outside malaria thereby contributing to overall Health Systems Strengthening.
2. **Human resources**: NMCP, districts and partners have human resource to do the monitoring and evaluation of malaria programs.
3. **Malaria service delivery system**: The National Health Service delivery system provides an M & E system at all levels.

Constraints

The following constraints affected implementation of SMEOR activities.

1. **Selection of indicators:** The current selected indicators for SMEOR are inappropriate to track implementation of malaria activities.
2. **Attitude, practice and perception:** NMCP SMEOR team focus their M & E efforts on reports generated by districts with limited effort to monitor NMCP implemented activities, leading to a paucity of program own reports. The drafted research agenda has not been disseminated that would provide information to the programme to inform decision-making.
3. **Implementation framework:** While the linkages between NMCP SEOR team and the department for health information division is strong, however the linkage with implementing partners is weak including the private sector leading to lack of aggregation of partner implemented activities at national level. Furthermore, a SMEOR thematic working group is in place to support the functioning of this team.
4. **Analysis and utilization of program data:** There is limited retrieval and analysis of readily available data from both DHIS2 and other programs to inform planning, implementation and decision-making.

5.7.4: Conclusions and Action points

Conclusions

- There are few and largely inappropriate evidence-based indicators selected under SMEOR that would inform programme planning, implementation and decision making.
- The available information in the DHIS2 is under-utilized, as it is not routinely analyzed at all levels.
- There is weak linkage and collection of programme data for activities implemented by partners and private sector.
- The current M&E system does not provide real time data as it does not monitor, evaluate and conduct operational research which is its expected mandate to inform, assess and demonstrate impact of malaria interventions.
- While numerous training on epidemic detection and reporting have been conducted, there is still limited capacity at all levels for detection, reporting and response to epidemics timely.

Action points

1. NMCP should re-orient its SMEOR staff by providing clear roles and job descriptions to effectively and efficiently monitor, evaluate and conduct operations research that will inform programming and decision-making.
2. SMEOR staff should urgently define and develop appropriate indicators that will enable the programme effectively monitor its performance (see Annex 2 for possible example of indicators).
3. NMCP should clarify and strengthen its M&E framework to define steps to engage with private sector and implementing partners to improve reporting.
4. NMCP should ensure that regularly scheduled reports are generated based on programme data.

5.8: Level of attainment of Epidemic Preparedness and Response (EPR)

The EPR policy goal is to appropriately control malaria epidemics in a timely manner to prevent or mitigate their adverse effects. The EPR Policy Objective is to predict, detect and respond to malaria outbreaks and epidemics in a timely and appropriate manner.

UMRSP EPR outcome indicators and targets

1. Proportion of epidemics detected and reported on time. The baseline was 50% with a mid-term target of 90% by 2017
2. Proportion of epidemic prone districts with annual epidemic preparedness and response teams and plans. The baseline was 0 with a midterm target of a 100% by 2017
3. Proportion of epidemics responded to in time. The baseline was 50% with a midterm target of 100% by 2017

5.8.1: Progress towards UMRSP EPR outcome indicators

- Proportion of epidemics detected and reported on time. We managed to achieve the midterm target of 90%. The national level has the capacity to detect most epidemics but districts have not been able to detect the epidemics. The indicator should be revised to assess this capacity at district level.
- Proportion of epidemic prone districts with annual epidemic preparedness and response teams and plans. We managed to achieve the 100% Midterm target. However, the plans have not been funded and the teams are not meeting regularly.
- Proportion of epidemics responded to in time. We managed to achieve 30% out of the targeted 100% at Midterm. The response has been partial and not timely in most of the districts.

5.8.2: Appropriateness of the indicators

Indicator 5: This indicator should measure whether these plans have a component of malaria and thus should be revised to: *Proportion of districts with annual epidemic response plans that have incorporated Malaria*
Indicator 6: Proportion of epidemics detected on time by districts annually
Indicator 7: This indicator is not smart. We should change it to *proportion of epidemics responded to within two weeks of detection.*

5.8.3: EPR Enablers and constraints

Enablers

The observed performance of the programme is attributed to the following enabling environment.

1. **Policies and guidelines**: Guidelines on EPR exist and have been partly been disseminated.
2. **Human resources**: Capacity for EPR exists at both national and district levels, with a whole division of Epidemic Disease Surveillance (ESD) and reporting.
3. **Procurement of malaria commodities**: There is a budget for epidemic response under ESD although malaria epidemics are not prioritized. However, available commodities are adequate to be allocated for epidemic response if need arises.
4. **Malaria service delivery system**: The existing health system delivery system is robust enough to detect and respond to epidemics at national, with gaps at district levels.

Constraints

The following constraints affected implementation of EPR activities.

1. **Supply chain management:** No specific buffer stocks of malaria commodities are available at district levels to respond to epidemics following the transfer of district drug budgets to NMS.
2. **Implementation framework:** The capacity at districts to operationalize their EPR plans is still curtailed by lack of funds. This constrains their ability to timely respond to epidemics. Furthermore, there is little analysis and use of data at point of generation that would allow timely detection of malaria epidemics.
3. **Attitude, practice and perception:** ESD and Districts do not prioritize the financing of their EPR plans with available resources and do not see malaria epidemics as national priorities.
4. **Refugees:** The influx of refugee populations to Uganda, some with little immunity and generally due to the poor living conditions, particularly housing are at greater risk of malaria.
5. **Climate:** the unpredictable weather patterns due to climate change is affecting the ecology of malaria, facilitating increased outbreaks of malaria even in districts that previously known to be malaria free.

5.8.4: Conclusions and Action points

Conclusions

- National capacity to detect malaria epidemics has increased with lags at district level
- Through ESD and IDSR, majority of districts have been trained on EPR and plans generated. However, these plans are not financed.

Action point

1. District capacity to detect malaria epidemics should be strengthened by training them on how to develop, update and interpret malaria normal channel graphs.
2. MOH and districts should be providing funding to operationalize district EPR plans.
3. ESD and districts should prioritize malaria epidemics as emergencies warranting immediate response.

CHAPTER 6: PROGRAMMING IMPLICATIONS AND LESSONS LEARNED IMPLEMENTING THE UMRSP

6.1: Lessons learned implementing the UMRSP

1. Implementing IRS is costly and unsustainable as there is no scale up adequate enough to achieve interruption of malaria transmission. IRS in the current 14 districts being sprayed costs $8.5 dollars spent per person/ $44 dollars per household. If Uganda is to implement IRS in all its districts, the estimated cost would be US$340 million annually. Therefore, a well-implemented IRS programme should be properly designed, fully financed, and executed within the guidelines of WHO with an exit strategy that guarantees sustainability.
2. Uganda has successfully implemented 2 universal LLINs coverage campaigns each costing over US$100 million that were mainly donor funded, nationally planned and implemented with little involvement of districts and lasting nearly a year. Such long campaigns that are costly are likely not to have the desired impact. Therefore, government should establish robust and continuous distribution mechanisms that use various channels to maintain and sustain coverage attained through mass campaigns.
3. Previous implementations have had weak coordination with the private sector, which offers services to nearly 60% of the population, contributing to the observed slow progress in achieving desired impact. There is need to strengthen public-private sector engagement for increased availability of sustainable quality and affordable malaria services while leveraging the role played by the professional councils and associations.
4. Parasitological diagnosis of malaria has greatly improved in public sector although the procurement of ACTs is not commensurate with the cases. Strengthening diagnosis in all sectors, will allow the country establish true burden malaria, treat only malaria cases and eliminate current waste where over 30 million ACTs are distributed to treat only 14 million reported malaria cases (clinical and confirmed).
5. Improved management of severe malaria with IV Artesunate has contributed to reduced malaria related mortality. Use of IV Artesunate should be restricted to only severe malaria cases and mechanisms for its accountability to ensure it is not used for uncomplicated malaria be put in place to avoid undue drug pressure likely to lead to resistance.
6. The routine planning of malaria activities has been weak or ad hoc, without the benefit of annual performance reviews and plans, undermining the key principles of the “3 – ones” – one strategic plan, one coordination mechanism and one M & E plan. NMCP and partners should strengthen and harmonize planning for effecting programme implementation.
7. There is limited monitoring and evaluation of programme activities necessary to inform planning and decision-making, given the use of inappropriate indicators for surveillance, monitoring and evaluation and operational research. A clear and robust SMEOR plan grounded in routine data analysis and feedback should be institutionalized and facilitated covering both government and partner implemented activities.
8. Current budget is mainly commodity driven leaving minimal funds for other supportive interventions necessary to drive uptake of the available commodities. More so, the budgets are heavily donor dependent

raising sustainability concerns. Government should mobilize additional resources and improve allocative efficiency for malaria.

9. The current blanket approach to delivery of iCCM without focusing on hard to reach areas has not realized the intended impact. The country should adopt as appropriate recommendations from previous reviews on how best to implement an effective iCCM programme including clear definition of high level coordination responsibility centres.
10. Current SBCC implementation has focused mainly on awareness creation through mass media, which does not readily translate into advocacy and social mobilization for appropriate behavior change. Instituting innovative approaches for enhanced advocacy, social mobilization and interpersonal communication will lead to mass action against malaria where all individuals, households, communities, districts, and all sectors are involved in malaria prevention and control efforts to achieve malaria reduction as envisaged by 2020.
11. Multi-sectoral and partner coordination has been weak. There is need to strengthen coordination through a strong multi-sectoral malaria coordination mechanism at national and sub-national levels.

6.2: Future strategic directions

1. To sustain the gains in reducing malaria mortality, MOH and partners should promote integrated program approach and strengthen health care delivery system to ensure at all levels: prompt diagnosis, appropriate treatment, tracking and timely referral as and when required.

2. Based on the positive lessons learned from the limited IRS programmes, MoH and partners should prioritize IRS in hot spot districts while rolling out across a wider geographic coverage in a cost effective manner to rapidly reduce vector density and transmission with a clear plan for sustainability of the gains upon exit.

3. NMCP should urgently develop and implement a plan for mass action against malaria using and engage multi-sectoral approach at individual, household, community, district, institutional, national and international level; to create a mass movement against malaria in line with the framework for "malaria smart" families and communities, for zero malaria death by 2020 and a malaria free Uganda by 2030. Among others, the following initiatives should be prioritized: a) Mass Action Against Malaria (MAAM); b) Uganda Parliamentary Forum for Malaria (UPFM)- a community that serves as advocates for political, legislative and community action for a malaria free Uganda; c) Updating the budget items in line with emerging initiatives including Touch-down, MAAM, UPFM, Multi-sectoral collaboration; and d) Financial gap analysis

4. Advocacy and resource mobilization: Engage with Uganda Parliamentary Forum on Malaria (UPFM); a) Establish Malaria Trust Fund; b) Institute appropriate legislative framework (Malaria Act); c) Increased

profile of Malaria Free Agenda; d) Establish Uganda Malaria Commission; and e) Elevate NMC Division to a National Malaria Department.

5. NMCP cannot fully implement UMRSP planned activities without adhering to the principles of decentralization and the full operationalization of the intended decentralized service delivery at district level. NMCP should focus on its core mandate of providing national policy and guidelines, resource mobilization, coordination, quality assurance and empower districts to lead activity implementation. The following Touchdown model to decentralize National Malaria Control Program to the District levels towards reaching every households should be implemented. Under this arrangement, NMCD staff members will be assigned to empower and coordinate malaria action in clusters of districts in the 14 Uganda regions, in line with Regional Referral Hospital catchment areas.

6. In order to maintain and sustain the gains of mass LLIN campaigns, the. MOH/NMCD and its partners should explore the feasibility and utilization of additional channels such as routine distribution of LLINs in day-schools, community distributions in special or humanitarian circumstances like in Refugees settlements and host communities.

7. MOH and NMCD should streamline the quantification, distribution and tracking of malaria intervention commodities with National Medical Stores for efficient and effective supply chain management. The efficiency gains from implementation of this recommendation will support other program intervention areas to achieve the UMRSP goals. District specific quantifications should be promoted while real time tracking system should be established.

8. NMCD should ensure that coordination mechanisms within the program and MOH, with partners, related sectors and sub-national entities are strengthened; progress reports are regularly generated and program information used to support planning and decision-making. Strengthen multi-sectoral coordination under the umbrella of “three ones” to ensure all malaria planning and implementation is government-led at national and district level through the OPM Service Delivery Unit which stipulates malaria as one of the priority areas of Government.

9. NMCP and partners should streamline and harmonize planning processes to ensure that resources are adequately mobilized, properly allocated and effectively utilized to attain set targets. NMCP and partners should develop a 3 year costed business plan and ensure that annual review and planning processes are conducted and aligned to the timeframes of both the National MTEF process and implementation plans of development partners.

10. District led planning and implementation of malaria programs with regional support should be operationalized. MOH in consultation with relevant government agencies such as MoLG and MoFEP

should improve financing of malaria activities at district level, with built in mechanisms for accountability for both resources and results.

11. Together with the professional councils and associations increase support to and engagement with the private sector in improving malaria control by among others sustaining the ACT subsidy and its expansion to cover RDTs, training and provision of tools to enhance data collection and reporting into DHIS2.

12. In the remaining life of the UMRSP, NMCP and partners must adhere to the guidelines of testing all fevers, treating only confirmed malaria cases and track these for improved data collection and analysis to inform decision making on planning and procuring malaria commodities using consumption data, for quality malaria prevention and treatment.

Anticipated Risks:

Some of the risks that were not fully addressed include

- Failure to use the decentralized structures at regional and district levels and lower levels
- Implementation arrangements as listed in UMRSP (page 51 of the Strategy) were not followed as planned which would have led to effective implementation

Moving forward, Government at all levels should own and lead the implementation process while partners and all stakeholders align with the Malaria Free Uganda agenda through Mass Action Against

Mass Action Against Malaria (MAAM) Initiative:

MAAM is a new approach to correct the gaps through implementation of the UMRSP to

- Address decentralisations process
- Correct the implementation arrangements for responsibility for all individual
- Address the attitude and risk perceptions at all level of the leadership and society: National, Districts, Parish, Village, community and individuals for every six objectives highlighting the roles the UMRSP.
- Strategy: *"Reaching Every Household with All Malaria Interventions"* - where malaria is everyone's business requiring mass action against malaria at all levels by all stakeholders.

UGANDA PARLIAMENTARY FORUM ON MALARIA

Vision

To have a "Malaria Free Uganda".

We are here;

A platform that serves as advocates for political, legislative and community action for a malaria free Uganda

Goal

To achive malaria free constituencies with zero malaria deaths, new cases not more than 30 per 1000 population and people remain parasite free.

UPFM *is Malaria Smart*

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ANNEXES

Annex 1: Detailed budget distribution by objective per year

Objectives	2014/15 Amt (%)	2015/16 Amt (%)	2016/17 Amt (%)	2017/18 Amt (%)	2018/19 Amt (%)	2019/20 Amt (%)	Overall Amt (%)
Objective 1: By 2017, achieve and maintain at least 85% protection of the population at risk through scaled up malaria prevention measures.	44.96 34.2%	58.98 45.3%	208.38 75.4%	73.99 49.8%	65.44 48.5%	199.16 72.9%	650.91 54.3%
Objective 2: By 2018, achieve at least of 90% of malaria cases in the public, private sectors and community level receive prompt treatment according to national policy	77.49 59.0%	63.21 45.3%	56.53 20.4%	63.04 42.4%	58.45 43.3%	59.39 21.7%	378.11 39.2%
Objective 3: By 2017 at least 85% of the population has correct practices about malaria prevention and treatment	6.23 4.7%	5.76 4.4	6.05 2.2%	9.04 6.1%	9.04 6.7%	9.04 3.3%	45.16 4.6%
Objective 4: By 2016, have strengthened programme management capacity to coordinate multi-sectorial malaria reduction efforts at all levels	0.74 0.6%	0.78 0.6%	0.69 0.2%	0.7 0.5%	0.79 0.6%	0.7 0.3%	4.4 0.5%
Objective 5: By 2018, all districts report routinely on malaria programme performance for decision making	1.63 1.2%	1.34 1.0%	4.62 1.7%	1.48 1.0%	1.06 0.8%	4.51 1.7%	14.64 1.2%
OBJECTIVE 6: By 2017, all malaria epidemic prone districts will have the capacity for epidemic preparedness and response.	0.31 0.24%	0.25 0.19%	0.25 0.09%	0.33 0.22%	0.26 0.19%	0.26 0.10%	1.66 0.2%
TOTAL	**131.4** **12.0%**	**130.3** **11.9%**	**276.5** **25.3%**	**148.6** **13.6%**	**135** **12.3%**	**273.1** **24.9%**	**1094.87** **100.0%**

Annex 2: Suggested SMEOR indicators

Examples of SMEOR indicators

Outcome indicators

i. Proportion of health facilities reporting monthly through the HMIS
ii. Proportion of the planned malaria key indicators surveys, for monitoring malaria interventions coverage, quality of service provision, vector and parasite dynamics and, quality assured malaria commodities availability, executed.
iii. Proportion of evaluation reports developed according to the national SME plan
iv. Proportion of malaria epidemics responded to by district councils within two weeks from the onset
v. Output indicators
vi. Number of health facilities reporting complete monthly malaria indicators
vii. Proportion of health facilities reporting quality assured malaria data
viii. Proportion of sentinel districts/sites avail reports on non-routine malaria data, including ACTs dispensed from health facilities and other outlets
ix. Proportion of report of national representative surveys availed, according to M&E plan
x. Proportion of selected health facilities conducting assess
xi. Proportion of selected health facilities conducting assessment of malaria parasitaemia in pregnant women and U5 children
xii. Number of insecticide resistance reports from sentinel sites (cumulative)
xiii. Number of antimalarial therapeutic efficacy reports per site (cumulative)
xiv. Proportion of vector control initiatives with appropriate monitoring system in place according to standard national set of indicators
xv. Frequency of updating malaria epidemiological profile
xvi. Proportion of initiatives conducted according to the national SM&E plan
xvii. Established and regularly updated composite NMCP database
xviii. MPR and midterm reports available (cumulative)
xix. Presence of maps with detailed information on malaria epidemic hotspot
xx. Proportion of epidemics alert investigated within 2 weeks after detection
xxi. Proportion of epidemic prone districts trained on epidemic preparedness
xxii. Proportion of epidemic properly responded within 2 weeks from detection

Annex 3: PROGRAMME FOR THEMATIC DESK REVIEW RETREAT

Dates: September 4 – 8, 2017

VENUE: ENTEBBE

Time	Topic	Facilitator(s)
Day 1: Monday 4th September 2017		
8.30-9.00	Participants Arrival & Registration	NMCP Secretariat
9.00-9.30	Prayer and Introductions	DK, NMCP
9.30- 10:20	Welcome Remarks, Meeting objectives, and expected outputs	Program Manager, NMCP
10.20-11.00	Official Opening Remarks	PM, NMCP Representative of Malaria DPs CHS-NDC; Official Opening
	Tea/Coffee Break	
11:00-11.30	Over view of the Uganda National Malaria Control Strategic Plan 2014: Key issues that require attention during MTR	Program Manager, NMCP
11.30-12.20	DP perspectives - malaria control funding landscape and strategic guidance (10 Min each)	PMI DFID WHO UNICEF
12.20-12.50	WHO Guidance on conducting Malaria Mid-term Review	WHO
12.50-13.20	Discussions on the above topics	
13.20-14:00	**Lunch Break**	Secretariat
14.00-14.40	Methodology and Key Issues for the Conduct of UMRSP MTR	Consultant
14.40-15.30	Previous MPR 2011 and MTR 2014 recommendations and status of implementation	Consultant
15.30-15.45	Discussions	
15:45-16:15	Introduction to and Formation of TWGs	Consultant
16:15- 16:45	**Tea/Coffee Break**	
16:45-17.15	Detailed Description of TORs for the TWGs	Consultant
17.15- 17.40	Wrap up and administrative announcements	NMCP
Day-2: Tuesday 5th September 2017		

Time	Topic	Facilitator(s)
8.30-9.00	Participants Arrival & Registration	Secretariat
9.00- 9:30	Welcome and recap of previous day	Consultant
9:30-10:30	Desk Review in TWGs	Consultant
10:30- 11:00	**Tea/Coffee Break**	
11:00-13:15	Desk Review in TWGs	Consultant
13:15-14:15	**Lunch**	
14:15-16:15	Desk Review in TWGs	Consultant
16:15- 16:45	**Tea/Coffee Break**	
16:45-17:15	Desk Review in TWGs	Consultant
17:15-17:30	Wrap up and administrative announcements	NMCP
Day-3: Wednesday 6th September 2017		
8.30-9.00	Participants Arrival & Registration	Secretariat
9.00- 9:30	Welcome and recap of previous day	Consultant
9:30-10:30	TWG Presentations to Plenary: Programme Mgt	Programme Mgt TWG Lead
10.30-10.50	Discussions	
10:50- 11:20	**Tea/Coffee Break**	
11:20-12:20	TWG Presentations to Plenary: IVM	IVM TWG Lead
12.20-12.40	Discussions	
12:40-14:00	**Lunch**	
14:00-15:00	TWG Presentations to Plenary: Case Mgt	Case Mgt TWG Lead
15.00-15.20	Discussions	
15.20-16.20	TWG Presentations to Plenary: SBCC	SBCC TWG Lead
16.20-16.40	Discussions	
16:40- 17:20	**Tea/Coffee Break**	
17:20-17:35	Wrap up and administrative announcements	NMCP
Day-4: Thursday 7th September 2017		
8.30-9.00	Participants Arrival & Registration	Secretariat
9.00- 9:30	Welcome and recap of previous day	Consultant

Time	Topic	Facilitator(s)
9:30-10:30	TWG Presentations to Plenary: SMEOR	SMEOR TWG Lead
10.30-10.50	Discussions	
10:50- 11:20	**Tea/Coffee Break**	
11.20-13:20	Updating TWG Presentations	TWG Leads, Consultants
13:20-14:20	**Lunch**	
14.20-16.20	Updating TWG Presentations	TWG Leads, Consultants
16:20- 16:50	**Tea/Coffee Break**	
16.50-17.15	Wrap up and administrative announcements	NMCP
Day-5: Friday 8th September 2017		
8.30-9.00	Participants Arrival & Registration	Secretariat
9.00- 9:30	Welcome and recap of previous day	Consultant
9.30-10.30	Summary of MTR Issues per TWG	Consultant
10:30- 10:50	**Tea/Coffee Break**	
10.50-12.50	Summary of MTR Issues per TWG	Consultant
12:50-14:00	**Lunch**	
14.00-15.00	Field visit plan and team formation	Consultant
15.00-16.00	Finalize presentations for Validators	TWG Leads, Consultants
16:00- 16:30	**Tea/Coffee Break**	
16.30-17.00	Finalize presentations for Validators	TWG Leads, Consultants
17.00-17.30	Wrap up and administrative announcements	NMCP

Annex 4: National Level Validation Consultation Checklist

Department / Organization: …

Date: …

Respondent: …

Interviewers: ….

Focus areas of the consultation

1. Assessment of opinion on the status of malaria control in the country and the performance of the national malaria control programme

Opinion on malaria and malaria control:

- …
- …

Perception of NMCP performance:

- …
- …

2. Exploration of the current role and contributions of the organization or department or parastatal in Malaria control in the country – what they are doing with the national malaria control programme

- …
- …

3. Exploration of future role and contributions of the organization to malaria control in the country.

- …
- …

4. Exploration of existence of Malaria data report and/or planned Studies likely to generate malaria programme data

- …
- …

5. Exploration of key Issues and suggestions on Strengthening Malaria Programme

No	ISSUE	SUGGESTIONS
1		
2		
3		

0.

Annex 5: CHECKLIST FOR VALIDATION VISITS DURING MTR – DISRTICT LEVEL

Aim of field visit: To validate some of the information contained in the thematic reports especially in relations to strategic thematic areas

Focal Issues:

MEDICAL RECORDS/SURVEILLANCE:

- Annual trends of completeness of monthly reports from health facilities – last 5 years, for each year calculate (# reports monthly received/# monthly reports expected x 100%) and review the trends
- Annual trends of timelines of report - last 5 years, for each year calculate (# reports monthly received on time/# monthly reports expected x 100%) and review the trends
- document the percentage of expected monthly reports from all health facilities each year that was received on time at district level

Trends of annual parasite incidence – last 5 years; calculate for each year the API (# positive/Population at risk x 100,000)

DISTRICT PUBLIC HEALTH NURSE/ INCHARGE OF ANC + MEDICAL RECORDS

- Trends of IPT1 coverage: last 5 years, for each year calculate (# IPT1/Pop PW x 100%) and review trends
- Trends of IPTp2 coverage: last 5 years, for each year calculate (# IPT2/Pop PW x 100%) and review trends
- Trends of gap between IPTp1 and IPTp2 coverages and the reasons for the gap: last 5 years, for each year calculate (# PW given IPT1 minus # PW given IPT2) and review trends
- Trends of IPTp3 coverage: last 5 years, for each year calculate (# IPT3/Pop PW x 100%) and review trends
- Trends of gap between IPTp1 and IPTp3 coverages and the reasons for the gap: last 5 years, for each year calculate (# PW given IPT1 minus # PW given IPT3) and review trends

Trends of gap between ANC1 coverage and IPTp1 and reasons for the gap: last 5 years, for each year calculate (# PW attended ANC1 minus # PW given IPT1) and review trends

DISTRICT VECTOR CONTROL OFFICER/ INCHARGE OF ITN DISTRIBUTION AND/OR IRS

- Clarification of vector control policy being implemented in the district
- Availability of ITNs in stock: Calculate Average monthly # of ITNs distributed last year (for routine distribution at ANC and EPI clinics – total for last year divided by 12) and determine if there is enough in stock to last for 3 months
- Estimate effective crop of ITNs within the populace (ITNs less than 3 years since distribution) and calculate effective ITN administrative coverage (100 x 2 x total effective ITN crop/total population at risk) – this is an estimate of ITN coverage of population at risk and assumes everybody with access to ITN sleeps under it
- Regularity of IRS; confirm dates of last IRS, target (whole district or part of it) and the coverage achieved outcome

Estimate effective insecticide coverage: 100/population at risk x [(population at risk x ITN administrative coverage/100) + # of people in households sprayed] %

To assess the level of programme management support for malaria control at district level

DHO AND/OR MALARIA FOCAL PERSON

6. Organization and management of malaria control program in the district

- Existence (identification of the focal person by name and training) of malaria focal person within the DHMT

  (Assumption: Existence of a malaria control focal person who is a member of the DHMT is an indirect measure of high priority given to malaria control in the district)

  7. Evidence that malaria focal point person is a member of DHMT
- Evidence (DHMT meeting minutes) that malaria program is discussed at regular district health team meetings

  8. Business and operational planning and review
- Availability of malaria business plan or annual operational plan integrated into the health sector medium term expenditure framework ***(review the plan to assure that malaria is appropriately included)***

  (Assumption: Availability of a malaria business plan or annual operational plan of malaria integrated into the sector plan is evidence of prioritization of malaria control in the district)

  9. Program financing
- Documented evidence of allocation and use of district health funds for malaria ***(ask for the evidence of use of DHMT funds for malaria and explore future use of DHMT funds for malaria)***

  (Assumption: Allocation and use of district health sector fund for malaria control is evidence of prioritization of malaria control in the district)

  10. Technical guidance
- Availability of appropriate guidelines and tools:

o Treatment guidelines;

o Treatment algorithms

(Assumptions: Availability of appropriate guidelines and tools is evidence of management support to implementation of one national policy for malaria control)

Annex 6: CHECKLIST FOR VALIDATION VISITS DURING MTR – HEALTH FACILITY LEVEL

Aim of field visit	**Focal Issues**
To validate some of the information contained in the thematic reports especially in relations to strategic thematic areas	1. **MEDICAL RECORDS**: ***Focus: Malaria surveillance including epidemiological and entomological surveillance*** Availability of file copies of all monthly reports for the last 2 years **2. LABORATORY (LAB)** ***Focus: Malaria surveillance including epidemiological and entomological surveillance*** Registration of suspected cases; Trends of annual test positivity rates – last 5 years ***Focus: Review of the capacity of the health facility to test all suspected cases:*** Trends of ABER – last 5 years (A*BER = 100 x (Number of people receiving parasitological test [Microscopy and RDT] /District Total Population)* Annual trends of proportion of suspected malaria cases tested 3. **STORE/PHARMACY** ***Focus: Procurement and distribution of malaria commodities*** RDTs stock-out last 3 months ACTs stock-out last 3 month ITNs stock-out last 3 months 4. **ANTENATAL CLINIC (ANC)** ***Focus: IPTp coverage*** Gap between ANC1 attendants and number of pregnant women given IPTp1 and reasons for the gap; Gap between number of pregnant women given IPTp1 and number given IPTp2 and the reasons for the gap Gap between number of pregnant women given IPTp1 and number given IPTp3 and the reasons for the gap ***Focus: Distribution of ITNs*** Gap between number of pregnant women attending ANC 1 and the number given ITNs and the reasons for the gap 5. **IMUNIZATION OR CHILD WELFARE CLINIC (EPI/CWC**) ***Focus: Distribution of ITNs*** Annual trends of the gap between number of children receiving measles vaccine and the number of children given ITNs and the reasons for the gap 6. **OUTPATIENT DEPARTMENT (OPD)** ***Focus: Testing and treatment of suspected malaria cases*** Review/interrogate and describe process at health facility level for: Registration of suspected cases; Documentation of people tested and laboratory results; Management of test positive cases including review of results by clinician; Counselling of positives Prescription and dispensing of ACT and DOTs of ACT; Prescription and dispensing of ACTs to test negative cases and the reasons why 7. **INPATIENT DEPARTMENT (IPD)** ***Focus: Testing and treatment of suspected malaria cases*** Trends of management of severe malaria according to policy – review inpatient register and case record of at least two malaria cases and describe the management and outcomes including reasons for particular outcome

Annex 7: CHECKLIST FOR VALIDATION VISITS DURING MTR – COMMUNITY LEVEL

Aim of field visit: To validate some of the information contained in the thematic reports especially in relations to strategic thematic areas

Focal Issues:
FOCUS 11: Community availability and perception of malaria services
At VHT level
Explore VHT perception of his or her role in malaria control
Diagnosis and treatment including use of RDTs;
Vector control;
IEC/BCC;
others
Explore/confirm the VHT reporting lines, periodicity of reporting and compliance of the VHT
Explore/interrogate the mechanisms in place for supervision of the VHT, the regularity and adherence to it by supervisors
Interrogate how VHT is remunerated
Explore any other issues that may be important to the VHT and in relation to malaria control in the community
At community level – meeting with community members
Explore community perception of the place of malaria as a priority disease in the community
Explore community members' knowledge of malaria symptoms and signs
Explore community members' knowledge of appropriate action to take when malaria symptoms occur
Explore community members' knowledge of malaria prevention interventions
Interrogate community members on payment for malaria services – whether it exists or not and the impact of payment for malaria services on access to malaria services
Explore community members' views on malaria service availability, access and quality
Collate suggestions by community members on how to improve malaria services

Annex 8: MPR/MTR RECOMMENDATIONS IMPLEMENTATION STATUS AS AT JULY 2017

The 2011 MPR made 17 Recommendations while the 2014 MTR made 61 Recommendations. Of the total 78 recommendations, 28 (35.9%) were fully implemented, 41 (52.6%) were partially implemented and 9 (11.5%) were not implemented at all by July 2017, as detailed below

MPR Recommendations Fully Implemented:

1. The NMCP needs to take up its coordination and stewardship responsibilities as a national malaria programme mandated to lead, guide and coordinate malaria control efforts in Uganda
2. The Reproductive Health Division should take a key leadership role in MiP with NMCP providing technical support
3. Finalize the approval of the EPR guidelines and training modules and revise malaria epidemic thresholds
4. Strengthen quantification of malaria commodities
5. Routine distribution of CQ to health facilities should be stopped and a mechanism set up to withdraw the current large stocks of CQ in health facilities

MTR Recommendations Fully Implemented:

1. Conduct a series of workshops on performance improvement, tam building and performance appraisal/reviews
2. Ensure that actions outlined in the Aide Memoire of February 2010 are implemented
3. Hold regular scheduled RBM partnership forum meetings with a standard agenda and action plans
4. Strengthen and utilize regional program management teams-RPMTs/ Zonal malaria coordinators and district malaria focal persons to supervise and monitor activities
5. Develop evidence-led policies and plans to guide malaria control interventions
6. Renew the commitment of all malaria partners and the general population to malaria control through commemoration of international/ regional malaria events
7. Employ evidence-led interventions for effective vector control such as use of synergistic LLINs and rotational spraying for IRS for national coverage
8. Align ASBCC activities to the planned IVM program interventions
9. Improve data quality and completeness – use of data quality audits-DQAs and implementation of corrective plans post DQA
10. Strengthen referral systems from lower levels, community and private sector to improve management of severe malaria
11. MiP focal person needs to be supported to coordinate MiP activities
12. Develop effective partnership among MiP/malaria stakeholders
13. Map development partners that have MiP interventions and can support DO IPTp
14. NMCP should ensure that MiP indicators are validated routinely
15. Conduct operational research to establish why there is low uptake of IPTp2
16. Update current IPTp policy in line with WHO 2011 recommendations for monthly administration of SP after quickening
17. Improve coordination between NMCP and RHD and partners
18. As a stop gap measure, a TA should be recruited for SBCC activities at NMCP
19. Need for revised and updated communication strategy, disseminated to partners for proper coordination of stakeholders
20. SBCC should be prioritized and strengthened as an important supporting intervention in malaria prevention and control

21. Revitalize the SBCC technical task force to plan and harmonize SBCC efforts in the country
22. The performance framework for the reduction strategy should develop "SMART" indicators for all the thematic areas, with clear indicator definitions and sources, a well-defined logical framework matrix with clear assumptions that can be used to guide reporting and decision making
23. There should be a specific budget and schedule for M&E activities

MPR Recommendations Partially Implemented:

1. Update the national malaria policy, strategic plan and develop joint annual work plans which should be regularly reviewed by joint annual review and planning meetings involving all malaria stakeholders including districts
2. To effectively do the above the MOH should elevate the NMCP to the level of a Department in the MoH where it is able to participate in key policy, technical and resource allocation decisions
3. Government of Uganda and partners should commit more resources to malaria activities
4. Rapidly scale-up vector control activities of LLINs and indoor residual spraying to achieve universal coverage and support rapid scale up of case management (diagnostics and medicines) to all health facilities (public and private) and at the community level
5. Strengthen routine malaria surveillance for both inpatients and outpatients from both public and private health facilities by improving data collection, recording, analysis and reporting at health facility, district and national levels
6. Establish representative sentinel sites to monitor vector bionomics including insecticide resistance
7. Improve and maintain communication / collaboration between NMCP, PD, PU and NMS on PSM issues
8. The Parliamentary Malaria sub-committee of the Social Services Committee should be mobilized to raise the pro le of malaria. A good-will ambassador for malaria should be identified in order to raise the pro le of malaria through advocacy
9. The NMCP should revitalize previously used communication channels, document best practices and regularly update the MOH website as a way of regularly sharing information
10. Operationalize the NMCP composite malaria database and assign responsibilities for its routine and overall management. In addition, the NMCP should develop standard reporting templates for partners to facilitate the incorporation of partner data into the NMCP database
11. Establish and regularly update a research agenda that is disseminated to all partners

MTR Recommendations Partially Implemented:

1. Enhance management capacity of the NMCP staff and raise profile of NCMP
2. Appoint substantive staff in all positions especially the programme manager
3. Strengthen coordination between NMCP and in-country malaria partners
4. Harmonize salary schemes for technical assistants who should be targeted to specific needs
5. Institute quarterly and annual planning/ review meetings to monitor progress of implementation of activities
6. Support central and decentralized malaria program management structures
7. Restrict the NMCP central role to its core mandate (policy and guidelines development, standards setting, technical support and supervision, resource mobilization, quality assurance and Monitoring and Evaluation) and revitalize the role of districts in planning and implementation of malaria control activities

8. Mobilize adequate resources for comprehensive implementation of IVM interventions
9. Action against insecticide resistance should be immediate and pre-emptive, not reactive, by instituting insecticide resistance management as recommended by WHO
10. Establish and operationalize sentinel surveillance sites for vector bionomics and insecticide resistance monitoring
11. Conduct comprehensive malaria epidemiological and vector mapping
12. Build capacity of the regional and districts structures and health workers to implement case management activities through training and dissemination of policy guidelines at all levels including the private sector and community level
13. Roll out ICCM to all villages across the country to leverage investments
14. Ensure consistent and sustainable supply and access to all malaria commodities at all levels including public, community and the provision of free or highly subsidized medicines and diagnostics to the private sector
15. Rapidly scale-up the Test, Treat and Track strategy to ensure early detection, prompt treatment with effective drugs and ensuring that a good surveillance and reporting system is available for accurate reporting of cases and measuring disease burden
16. Strengthen support supervision and clinical audits to address issues of adherence to policies and guidelines, quality assurance for diagnostics to all districts
17. Empower and fully authorize NMCP to make decisions in timely fashion
18. Develop effective and efficient coordination among MiP/malaria stakeholders
19. Mobilize adequate government and partners' funding for MiP
20. Monitor and supervise NMS to ensure that SP is one of the essential supplies to health facilities
21. Strengthen coordination between NMCP and HIV/AIDS to ensure that data on co-trimoxazole given to pregnant women is captured under IPTp
22. DHOs/NMCP needs to strengthen the capacity of the private sector in data management and ensure that they submit HMIS reports monthly
23. VHTsnationwideshouldbetrainedtodispenseIPTptoallpregnantwomenandthecapacity be strengthened in data management. They should also sensitize pregnant women on the importance of sleeping under an ITN during pregnancy
24. Conduct targeted BCC on MiP reaching both men and women
25. Improve quality of data capture and reporting under HMIS
26. Supply SP to public and private health facilities with robust regulatory mechanisms
27. Provide appropriate funding, human and other resources for SBCC
28. All NMCP personnel who routinely use data for decision making should have access to the DHIS2 and m-Trac databases
29. The M&E unit should have routine staff meetings to enhance, update, and coordinate activities and use of data. In addition, there should be better communication channels within the program and outside
30. There should be support for malaria EPR activities country wide since malaria epidemics are likely to be frequent as we scale up the various malaria interventions

MPR Recommendations Not Implemented:

1. NMS procurement of malaria commodities should be guided by the Ministry of Health policies and quantification of malaria commodities strengthened by using malaria burden data

MTR Recommendations Not Implemented:

1. Pro-actively engage the private sector to support IVM through their corporate social responsibility programs
2. Conduct therapeutic efficacy studies to continuously monitor ACT efficacy to better manage treatment failures and drug resistance
3. M-trac should disaggregate their data to include maternal deaths due to malaria
4. Integrate IPTp in other ongoing community outreach programs to avoid missed opportunities such Immunization and HCT outreach clinics
5. The SBCC focal person positions in the NMCP should filled urgently with adequate numbers and appropriate skills
6. The Programme manager in liaison with the M&E unit should clarify the roles and responsibilities of each officer. This will enhance better coordination of M&E activities
7. The M&E unit needs to develop a central repository for storage of all activity reports, research studies from internal and implementing partners, publications of the malaria quarterly bulletins and any other related documents like policies, guidelines and strategic plans (e-library). This will reduce the habit of individualizing NMCP documents and data
8. The next M&E plan should have well described structure of the M&E unit and how it fits within the entire NMCP structure. There should be well defined roles and responsibilities of all the staff involved in M&E

Annex 9: UMRSP ACTIVITY IMPLEMENTATION STATUS AS AT JULY 2017

The 2014-2020 UMRSP had a total of 109 activities across all the 6 Strategic Objectives. Of these 22 (20%) were fully implemented, 79 (72%) partially implemented and 8 (7%) were not implemented by July 2017, as detailed below

UMRSP Activities Fully Implemented:

1. Promote district ownership and capacity to conduct IRS
2. Promote district capacity to conduct IRS
3. NMCP to conduct needs assessment and address gaps in the target districts
4. Conduct training of trainers(TOT)
5. Training of IRS personnel to implement IRS activities
6. Construction of disposal pits and bath shelters
7. Training of health workers on how to manage insecticide adverse effects
8. Procure and distribute LLINs
9. Routine distribution of LLINs through ANC, EPI, Schools, private providers and commercial outlets
10. Update and implement the malaria communication plan
11. Set and disseminate specification for LLINs in Uganda
12. Training of health workers and VHTs on larval source management techniques
13. Train health workers from the public, private and community levels on the national treatment guidelines and management of fever including severe malaria management
14. Produce and translate appropriate ICCM training materials for the VHTs
15. Update guidelines and job aids on IPTp
16. Develop or update communication materials on malaria and translate in alignment with the communication pathways model of strategic communication for behavior change
17. Conduct KAP and post survey on health seeking behavior to identify levels and determinants of the use of malaria prevention measures
18. Use report findings to develop appropriate messages about use of malaria prevention measures
19. Form and operationalize a private sector co-payment taskforce to facilitate the private sector to access subsidized ACTs
20. Support training of staff in HMIS, conduct revision and dissemination of HMIS tools
21. integrating private sector reporting into HMIS, and continuously collecting, collating and reporting malaria data through HMIS
22. The programme and the districts will also produce and widely disseminate quarterly and annual reports to all stakeholders, including the communities and the media

UMRSP Activities Partially Implemented:

1. Identify districts with the highest transmission intensity (parasites prevalence >50)
2. Distribute LLINs through mass campaign
3. Conduct BCC for LLIN use and maintenance
4. Monitor coverage and use of LLINs at household level through post distribution and utilization surveys

5. Conduct baseline and follow entomological and vector bionomic studies
6. Mapping of potential sources for larval source management (breeding areas)
7. Larval source management acceptability studies and BCC for larviciding
8. Sensitize urban communities on malaria control
9. Conduct baseline and post IRS entomological surveys
10. Develop and implement an insecticide resistance management plan
11. Routinely provide the district health teams with mentorship and support supervision skills
12. Train the district in the clinical auditing
13. Procurement of RDTs and microscopy reagents and sundries for all health facilities
14. Scale up diagnostic capacity in the private sector
15. Train 10,000 health workers on malaria microscope and the use of RDTs
16. NCMP in partnership with MoH and other partners train clinical health workers at HC II and III on ICCM
17. Supply VHTs with required medicine, equipment, ICCM registers and logistical materials (job aids)
18. Advocate for ICCM and sensitize the communities about the strategy implemented by VHTs
19. Orient health workers on updated IPTp guidelines
20. Procuring IPTp DOTs commodities/kits for public and private sector
21. Mobilize communities on antenatal care attendance in collaboration with RHD
22. Train clinical laboratory personnel in performing malaria microscopy and quality assurance
23. Conduct malaria blood slide validation at reference (district hospital) laboratories as well as assessments of clinical laboratory staffs
24. Complete and distribute parasite-based diagnosis guidelines and QA manual
25. Review, update and disseminate malaria communication framework
26. Create awareness about appropriate case management and health care seeking behavior
27. Address barriers to changes in attitudes and practices identified in situation analysis
28. Develop, pre-test, print and disseminate approved IEC materials to increase awareness, knowledge and stimulate demand for malaria prevention and treatment
29. Recruit and train at least two social media practitioners for the programme
30. Conduct community dialogues forums, drama, film shows and sports events
31. Promote interpersonal communications containing malaria message in each episode
32. Engage community institutions, culture groups and religious houses
33. Train VHT on malaria intervention to cascade focused household visits and do Interpersonal Communication
34. Engage school pupils to champion malaria intervention messages and act as change agents at home
35. Facilitate integration of malaria talking points into the activities of the clergy, community leaders, policy makers and heads of primary and secondary schools through social mobilization and peer mentoring techniques
36. Commemorate /mark international malaria related events such as world malaria day at national level and sub national levels
37. Identify, assess, build capacity and equip CSOs /CBOs to facilitate, support and monitor social mobilization of BCC activities at community level
38. Conduct social marketing to build on current knowledge about malaria prevention

39. Create awareness about appropriate case management and health care seeking behavior
40. Put a system in place to monitor the trends in relation to malaria knowledge, attitude and practices
41. Develop monitoring tools to escalate the reporting paradigm to monitor behavior of the population
42. Use DHT and CSO/CBOs to act as appropriate channels for ensuring BCC activities are reported
43. Map hard to reach areas and minority groups where there is a limited access to key malaria massages
44. Work with partners to conduct advocacy meetings to stimulate dialogue, strengthening coordination and collaboration mechanisms to support malaria prevention and treatment interventions Hold advocacy meetings with other Ministries and key stakeholders
45. Develop concept notes, proposals, and work-plans for resource mobilization
46. Support and facilitate districts to hold quarterly coordination meetings with partners implementing malaria control activities
47. Support annual district integrated health sector planning to include key malaria interventions in their work plans
48. Conduct regular integrated supportive supervision
49. Dissemination of Malaria Guidelines and policies
50. Hold regular programme meetings, thematic group meetings, RBM in-country partnership coordination meetings, quarterly and annual review and planning meetings
51. Organize and participate in cross border malaria activities and meetings with neighbouring countries in the region
52. Develop/adapt appropriate supervision and monitoring tools for private health providers
53. NMCP will create a platform at district level for private drug shops, pharmacies and clinics to report on malaria HMIS indicators
54. Hold quarterly coordination meetings at district level with partners
55. Conduct regular meetings with commodities regulatory bodies including UBOS, NDA
56. Monitor the supply chain system: Stock status review meetings (quarterly)
57. Monitor the supply chain system: Provide HMIS forms to health facilities
58. Monitor the supply chain system: Develop/adapt appropriate supervision and monitoring tools for private health providers
59. Enhance staff capacity for PSM: Training health workers on PSM
60. Strengthen the regular collection, collation, analysis and reporting of malaria data at all levels
61. Conduct Data Quality assessments
62. Conduct Monthly meetings
63. Conduct regular field supervision
64. Conduct quarterly review meetings
65. Conduct annual reviews and planning meetings
66. support the implementation of annual
67. conduct periodic representative surveys and analyses to monitor the quality of antimalarial drugs on the market (public and private)
68. support training of health workers in data use for decision-making
69. conduct sentinel surveillance
70. Conduct vector behavior and bionomics studies, therapeutic efficacy test studies at select sentinel sites
71. Support districts to established/strengthen functional systems for pharmacovilance of antimalarial drugs

72. Revamping of the Uganda Malaria Research Centre (UMRC)
73. Define a malaria operational research agenda, maintain collaboration with local and international research institutions
74. Provide a forum for research results dissemination
75. Collaborative effort between the NMCP, the Epidemiological Surveillance Division, WHO and the Metrological Department to strengthen district forecasting
76. Plotting of health facility data against thresholds
77. Training of Health workers in Epidemic Response
78. Formation of district malaria epidemic response teams
79. Conduct Malaria post mortem meetings (after an epidemic)

UMRSP Activities Not Implemented:

1. Conduct market research and social marketing for LLINs
2. Build capacity for urban vector authorities to deliver IVM
3. NMCP to take a lead in supervision of ICCM malaria case management
4. Produce integrated data collection tools for MiP
5. In collaboration with NDA and technical partners, conduct malaria RDTs post purchase and shipment lot testing
6. Conduct quality control both at the point of entry and field monitoring at the health facilities post distribution
7. Develop targeted messages designed specifically for these disadvantaged communities in their different settings for equity and equality
8. Streamline interventions and avoid duplication

Annex 10: MTR participants

UMRSP Midterm Review (MTR) Process Participation List (June –Dec 2017)			
	Attendance List		
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