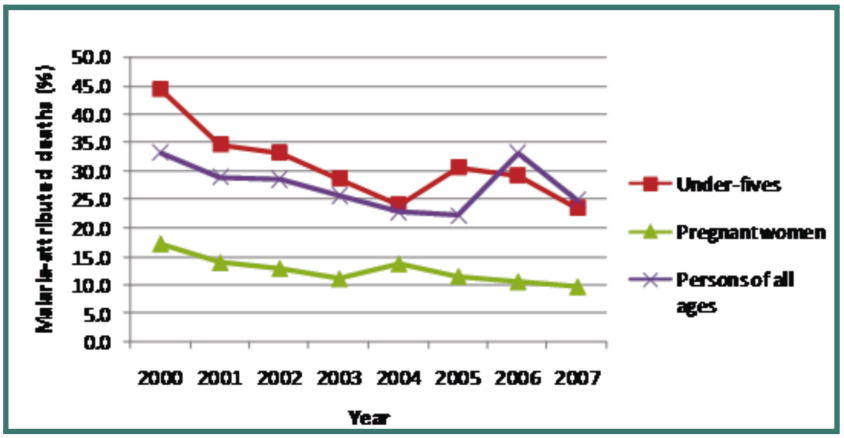
NATIONAL MALARIA CONTROL MONITORING AND EVALUATION PLAN

2008-2015



REPUBLIC OF GHANA

National Malaria Control Program

MINISTRY OF HEALTH

National Malaria Control Monitoring and Evaluation Plan

2008-2015

National Malaria Control Programme

2009

MINISTRY OF HEALTH

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List of Abbreviations

ACT	Artemisin Combination Therapy
ADRs	Adverse Drug Reactions
AGA	Anglo Gold Ashanti
ANC	Antenatal Care
BCC	Behaviour Change Communication
CBAs	Community Based Agents
CBO	Community Based Organisation
CBS	Community Based Surveillance
CCM	Country Coordinating Mechanism
CDC	Centre for Disease Control
CHIM	Centre for Health Information Management
CFR	Case Fatality Rate
CMS	Central Medical Store
CQ	Chloroquine
DANIDA	Danish International Development Agency
DDT	Dichlorodiphenyltrichloroethane
DFID	Department for International Development
DHMTs	District Health Management Teams
DHS	Demographic and Health Survey
DMIS	District Management Information Systems
DSD	Disease Surveillance Department
DSS	Demographic Surveillance System
EPA	Environmental Protection Agency
FDB	Food and Drugs Board
G6PD	Glucose 6 Phosphate Dehydrogenase Deficiency
GDHS	Ghana Demographic Health Survey
GFATM	Global Fund to Fight AIDS Tuberculosis and Malaria
GHS	Ghana Health Services
GIS	Geographic Information System or Global Positioning
GoG	Government of Ghana
GSS	Ghana Statistical Service
HBC	Home Based Care
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
HMIS	Health Management Information Systems
HPU-GHS	Health Promotion Unit of the Ghana Health Service
HRU	Health Research Unit
HR	Human Resource
ICT	Information and Communication Technology
ICD	Institutional Care Division

IDSR	Integrated Disease Surveillance and Response
IEC	Information, Education and Communication
IMCI	Integrated Management of Childhood Illnesses
IMVM	Integrated Malaria Vector Management Policy
IPTp	Intermittent Preventive Treatment of Malaria in Pregnancy
IRS	Indoor Residual Spraying
ITN	Insecticide Treated Nets
JICA	Japanese International Cooperation Agency
KAP	Knowledge Attitudes and Practices
LLIN	Long lasting Insecticide Treated Nets
LMIS	Logistics Management Information Systems
LQAS	Lot Quality Assurance Survey
MARA	Mapping Malaria Risk in Africa.
M&E	Monitoring & Evaluation
MDG	Millennium Development Goal
MERG	Monitoring and Evaluation Reference Group
MESS-T	Monitoring and Evaluation System Strengthening Tool
MICS	Multiple Indicator Cluster Survey
MIP	Malaria in Pregnancy
MLGRD	Ministry of Local Government & Rural Development
MOH	Ministry of Health
NGO	Non-Governmental Organization
NHIS	National Health Insurance Scheme
NMCP	National Malaria Control Programme
NMIMR	Noguchi Memorial Institute of Medical Research
OPD	Out-patient Department
PMI	President's Malaria Initiative
POW	Programme of Work
PPME	Policy, Planning, Monitoring and Evaluation Divison
RBM	Roll Back Malaria
RDT	Rapid DiagnosticTest
RH	Reproductive Health
RHMTs	Regional Health Management Teams
SDHT	Sub-district Health Team
SMS	School of Medical Sciences
SOP	Standard Operating Procedures
SP	Sulfadoxine-Pyrimethamine
SWAP	Sector-wide Approach
UNICEF	United Nations Children's Education Fund
WHO	World Health Organization
USAID	United States Agency for International Development

Preface

Malaria is a major public health problem in Ghana. It is a leading cause of morbidity and mortality, especially in children under five years of age and pregnant women. It is the most common cause of outpatient visits, hospitalization and death. Malaria is also a development problem as it has a serious socio-economic impact on families and the nation, through loss of work, school absenteeism and high levels of expenditure on treatment.

The government of Ghana through the Ministry of Health, the Ghana Health Service, and its partners are committed to controlling malaria in the country. As part of the malaria control strategies, the Ministry has developed several guiding malaria documents one of which is the National Malaria Monitoring and Evaluation Plan for 2008 to 2015. This is the first time that the Ministry has developed such a document and it is an important step in the right direction. The Malaria Monitoring and Evaluation Plan is an important component of the Monitoring and Evaluation Plan of the Ministry of Health's Sector Wide Approach M&E system.

In order to control malaria in the country, the Ministry of Health is focusing on scaling up of malaria control activities. Resources for malaria control have been increased markedly by all partners, particularly the Global Fund, the U.S. President's Malaria Initiative, UNICEF, the World Bank, and NGOs such as the Gates Foundation. A sound monitoring and evaluation is therefore critical if the malaria community is to demonstrate progress in achieving outcomes and impact of malaria control efforts. The plan will contribute to a more efficient use of data and resources by ensuring that, for example, indicators and sampling methodologies are comparable over time and avoiding duplication of effort. The data generated by this comprehensive M&E system will serve the needs of many constituents, including policy makers, programme or project managers, researchers and donors, eliminating the need for each to repeat baseline surveys or evaluation studies when they can easily use existing data.

I am hopeful that concerted efforts to implement this Malaria Monitoring and Evaluation Plan with the support of global, regional and national partners will enable Ghana to significantly reduce the health and socioeconomic burden of malaria.

Hon. Dr. George Sipa-Adjah YANKEY
Minister of Health

Acknowledgements

This document was prepared by the National Malaria Control Programme in conjunction with the Roll Back Malaria Partners in Ghana.

The process of developing a National Malaria M&E plan started with the formation of an M&E working group to review the plans and activities of the components of the RBM strategy in Ghana. As described in section 1, this group followed the MEEST (M&E System Strengthening Tool) approach. This group had the following membership: Prof. E. A. Afari(Chairperson), School of Public Health University of Ghana; Madame Janet Kwansah, Acting Director PPME/ MOH; Peter Gyimah, Head, CMS/MOH; Dr. Frank Nyonator, Director, PPME/GHS; Dr. Odoi-Agyarko, Deputy Director PH/GHS; Dr. C. Bart Plange, NMCP Program Manger NMCP/GHS; Dr. K. O. Antwi, Program Manger EPI/GHS; Dr. Aaron Offei, Regional Director, GHS/CR; Denis Leonard Adaletey, PPME/CHIM; Michael Adjabeng, DSD/GHS; Peter Takyi Peprah, GSS; Louis Agbe, CCM (then Chairman)/Ministry of Local Govt RDE; John A. Pwamang, EPA; Geoffrey V. Arthur, Food and Drugs Board; Ekow Biney, PHRL; Emefa K. Sepen, PHRL; Charles Acquah, Ghana Coalition of Health NGOs; Dr. Mark Young, UNICEF; Dr. Marius de Jong, DFID/EKN; Dr. Paul Psychas, USAID/PMI; George Wood, JICA; Dr. F. Owusu Antwi, WHO; Dr. Harry Opata,WHO, Abdul Aziz, NMCP/GHS; and Kofi G. Osae (Coordinator for working group), NMCP/GHS. The group met for over period of four weeks and were supported by NMCP staff as well as by WHO AFRO/ICP/WARN (Dr. Jackson Silah) and CDC/PMI (Richard Kahn), to complete the initial exercise.

During the drafting of the documents Dr. Godwin Afenyadu (PPME/GHS), Dr. Kyei Faried, (Head DCU/GHS) and Frank Davis (DCU), Dr. Edward Bonku and Angela Bannerman all of QHP/PMI, Joseph Ocran (AngloGold Ashanti) and Mr. Wahjib Mohammed worked on various sections of the document. This work was also supported by Mr. Frank Boateng (CCM) and NMCP staff. During the drafting process, the RBM MERG templates, as well as the Malawi and Zambia national malaria M&E plans, provided valuable models for sections of Ghana's plan. In January 2009, a consensus meeting of stakeholders was convened to vet and validate the draft plan; a list of participants is given in the Appendices. Dr. Paul Psychas (CDC/PMI) worked closely with Kofi Osae and other NMCP staff on the final review and editing of the draft document.

The preparation of this document was supported by GFATM, PMI (ProMPT), UNICEF, and the Government of Ghana.

In the finalization of the plan, Prof Edwin Afari (School of Public Health, University of Ghana), reviewed the draft document and refined it to its current state. He was supported by Dr. Moses Aikins, Dr. Samuel O. Sackey, (all from school of public health), Dr. Keziah Malm, Sammy Oppong, Mr. Wahjib Mohammed, Mr Godson K. Osae (from NMCP) and Stephen Ntsua (ProMPT).

Madam Salimata Abdul-Salam
Acting Chief Director, Ministry of Health

Summary

The National Malaria Control Monitoring and Evaluation Plan 2008-2015 has been produced alongside the National Malaria Strategic Plan (NMSP) 2008-2015, in order to inform the strategic plan and to provide the needed modifications and expansion of malaria monitoring and evaluation (M&E). The NMSP provides a blueprint for a rapid, nationwide scale up of malaria control interventions for impact. This M&E plan describes an expanded effort to monitor the scale up of interventions and additional evaluation to document the consequences and benefits of the effort.

This M&E Plan provides a review of the following:

Existing information on malaria epidemiology and malaria risk in Ghana - demonstrating that malaria is widely endemic with substantial seasonal variation.
Existing control strategies -Updated goals and targets for malaria control in Ghana in the context of scaling up key interventions.
Existing data sources that can be used for monitoring of malaria control efforts.
Opportunities to utilize a spectrum of facility-based and population-based methods and tools for malaria M&E
Details on aspects of:

- Monitoring the inputs, processes, and outputs of control interventions.
- Evaluating the outcomes and impact of scale-up efforts
- Operations research to focus on specific detailed examination of scale-up consequences and to explore key challenges in the process of scale-up

Details on specific plans for information collection - all informed by the global consensus from groups such as the Roll Back Malaria Monitoring and Evaluation Reference Group (RBM-MERG) and from Ghana opportunities and experiences.
Identifies illustrative time frames for data collection, analysis and planned reporting.
Describes capacity strengthening requirements to respond to the expanded needs for M&E in the context of national scale-up.

The main objectives for M&E in malaria control in Ghana include:

Strengthening and/or developing of systems to collect, process, analyze and manage malaria transmission and disease burden data, including data on treatment and prevention programs.
Management capacity will be enhanced so as to assure that all strategic programmes have been implemented as planned to ensure accountability and address problems that have emerged in a timely manner
Monitoring and evaluation systems will be capable of providing feedback to programme implementers, RBM partners and relevant authorities to improve programme planning, management, and accountability.
The National Malaria Control Program and partners will document on a timely basis the extent to which planned strategies and resource allocations have achieved expected outcomes and impacts.

1.0 Introduction

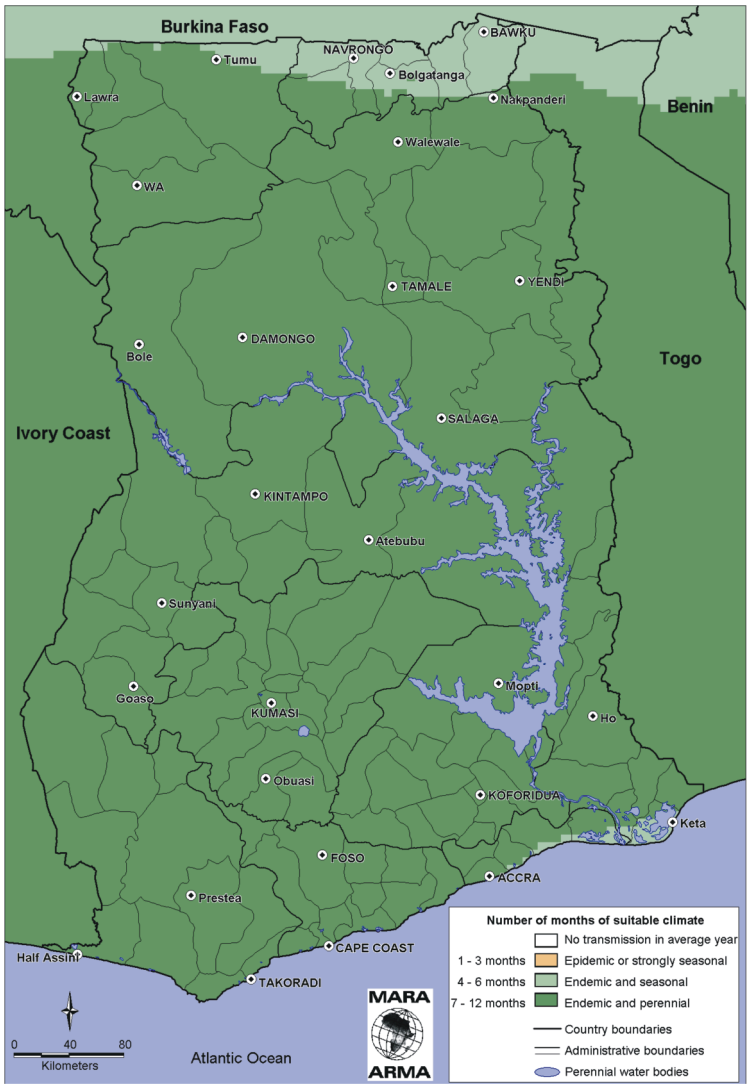
1.1 Background

Malaria Epidemiology in Ghana

Malaria is hyper endemic in all parts of the country (see figs 1, 2), with all the 23 million population at risk. Transmission occurs all year round with slight seasonal variations during the rainy season from April to July. There is marked seasonal variation in the northern parts of Ghana, which experience a prolonged dry season from September to April. Over the past five years, between 3.1 and 3.5 million cases of clinical malaria are reported in public health facilities annually, of which over 900,000 cases are of children under-five years (NMCP Annual Report 2006). Everyone is at risk of having malaria but children under five, pregnant women and non-immune visitors are at greatest risk.

Figure 1: Duration of Malaria Transmission (in Months) in Ghana.

Presumptively, diagnosed malaria cases account for 37.5% of all outpatient illnesses, 36% of all admissions, and 33.4% of all deaths in children under-five years. Amongst pregnant women, it accounted for 13.8% of all OPD attendances, 10.6% of admissions and 9.4% deaths. The groups most vulnerable to the disease are children under-five years and pregnant women who constitute 20% and 4% respectively of the general population.



The main parasite species causing malaria in Ghana are P. falciparum (80-90%), P. malariae (20-36%), and P. ovale (0.15%). Mixed infections of P. falciparum and P. malariae are not uncommon. The crude parasite rates range from 10 to 70%. The principal vectors are the Anopheles gambiae complex and Anopheles funestus, accounting for 95% of all catches. Anopheles gambiae s.s. of the complex predominates and transcends across the country. Characteristically, these species are highly anthropophilic, biting mostly late in the night, and are commonly found wherever there are breeding sites.

1.2 Goals and Targets of the 2000 - 2010 Strategic Control Plan

Goal

The overall goal of RBM in Ghana was to reduce the malaria disease burden by 50% by 2010. This goal was to be achieved through overall health sector development, improved strategic investments in malaria control, and increased coverage of malaria treatment and prevention interventions, especially at the community level.

The specific targets by the end of 2010 are:

80% of caretakers and parents in rural areas and 90% in urban areas will be able to recognise early symptoms and signs of malaria. (Milestone: 60% rural, 70% urban by year 2005).
80% of caretakers and parents in rural areas and 90% in urban areas will respond appropriately to cases of malaria they identify.
(Milestone: 60% rural, 70% urban by 2005)

Quality of health care services for the management of all cases of malaria will be improved in 90% of health facilities. (Milestone: 70% by year 2005).
Physical accessibility to basic services (5 km from nearest health facility) will increase from about 60% to 90% (Milestone: 75% by year 2005).

1.3 Malaria Control Interventions used

The national malaria strategic plan placed priority on a set of proven malaria control interventions, consistent with the RBM strategy. The main control strategies promoted by the NMCP were:

Transmission reduction through vector control and interruption of mosquito-human contact using insecticide-treated nets (ITNs), indoor residual spraying (IRS) and, to a lesser extent, various methods of source reduction (e.g. larviciding, larval habitat reduction, environmental management).

Prevention of malaria in pregnancy using intermittent preventive treatment in pregnant women (IPTp), effective case management, and ITNs.

Prompt and effective case management at all levels of the health system including, where appropriate, at the community level and particularly targeted at children under-5 years of age who are the most vulnerable group.

These interventions were supported with IE&C, research, monitoring and evaluation with a strong collaboration with partners.

1.4 Monitoring and evaluation system in place

Ghana has good but rather fragmented systems for malaria surveillance and monitoring and evaluation. The main sources of routine surveillance information are the Centre for Health Information Management (CHIM). This is supplemented by the Integrated Disease Surveillance and Response (IDSR) and specific programme surveillance and monitoring systems (e.g., NMCP surveillance system).

The Ministry of Health and its agencies (e.g., Ghana Health Service) has a structured system of data collection and collation from the sub-district, to district, to region and, to national levels (headquarters). There is weekly, monthly and quarterly reporting depending on the level of service and the output involved. This information is collated by CHIM.

Monthly management meetings are held at district levels and quarterly performance reviews at regional and national levels of the health sector. These review sessions highlight progress made in programme implementation, outline challenges, and provide the way forward. Half-year and annual reports are regularly prepared at all levels and disseminated for appropriate action by policy makers. In addition the, NMCP has three zonal offices which conduct M&E visits to support national and regional health information system.

Ghana has got sentinel sites for monitoring malaria drug efficacy, entomology monitoring, malaria morbidity and mortality tracking and vaccine trial sites.

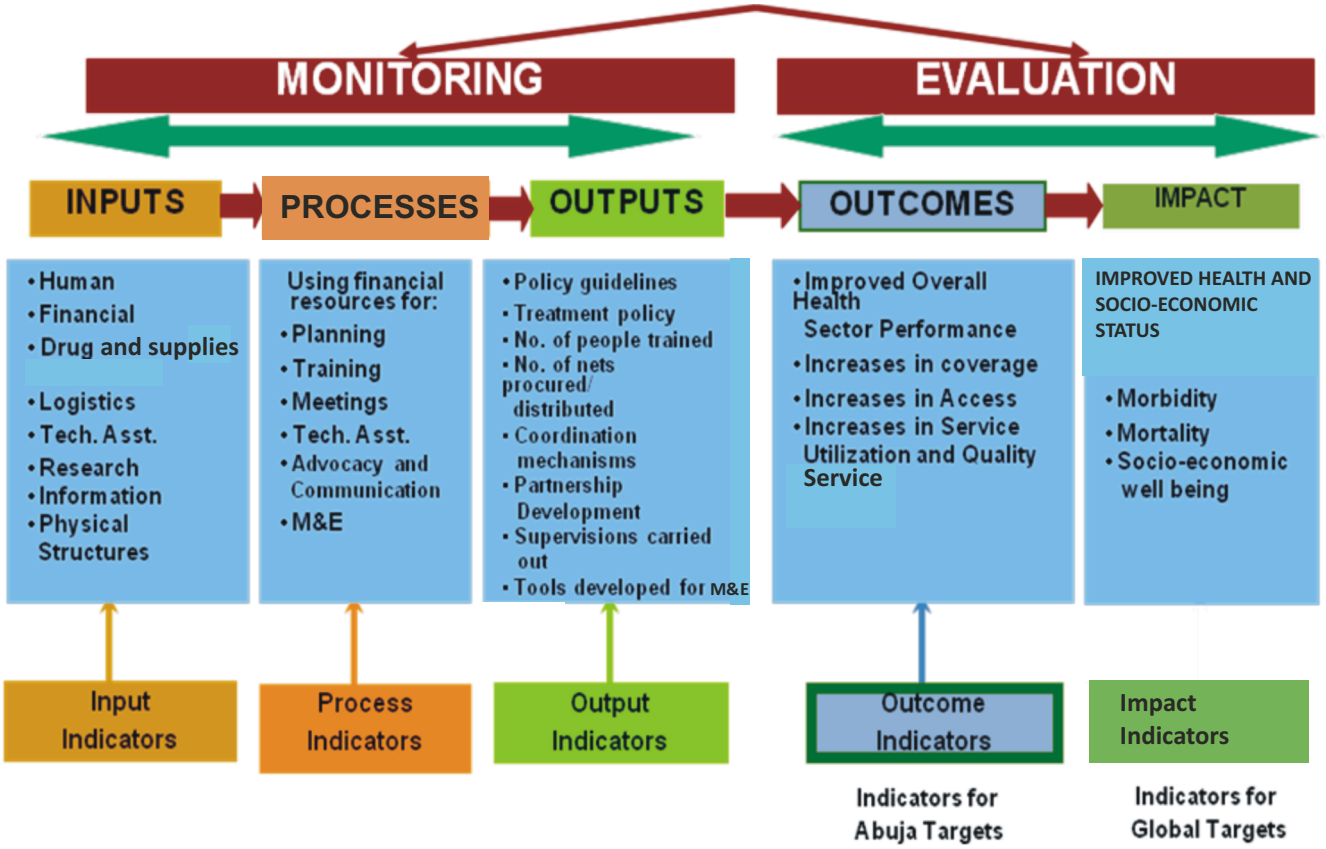
Pharmacovigilance system was also established in 2004. This was used to monitor suspected adverse drug reactions (ADRs) including reactions to anti-malarials. The system monitored the incidence of ADRs in the country following the use of anti malaria drugs, risk factors for ADRs, and related data. The system was used to carry out a risk benefit analysis of AS/AQ in Ghana in 2004. The two lead institutions for pharmacovigilance have been Food and Drugs Board and the Centre for Pharmacovigilance Unit of the University of Ghana.

A variety of periodic surveys supplement the ongoing M&E efforts in the country. Most impact and outcome data is taken from periodic surveys such as the Multiple Impact Survey (MIS), Demographic Health Survey (DHS), and the Demographic Surveillance Sites (DSS). These surveys usually include data on ITN use among children and pregnant women, malaria prophylaxis in pregnant women, treatment seeking behaviour for malaria and anemia among children under five. UNICEF has also been conducting Multiple Indicator Cluster Survey (MICS) which include malaria module.

1.5 Monitoring and Evaluation Conducted

The Monitoring and Evaluation Framework below was used to guide the monitoring and evaluation processes in the past years.

Figure 2: A Basic Framework showing the relationships between inputs, process, outputs, outcomes and impact.



1.5.1 Monitoring

Data on inputs including funding, process and outputs had been collected from facilities, through to district, regional and to the national level.

At the district levels, the DHMT conducts monitoring of the day to day activities of the implementation activities. Integrated monitoring tools and malaria data collections tools had been developed for this purpose. The districts prepare financial returns and programmatic malaria control update monthly and submits summary quarterly report on these to the region. These reports are collated at the regional and submitted to national level.

At national level, monitoring is done by the NMCP staff and sometimes with partners. These are mainly on procurement and distribution of commodities, efficacy testing, insecticide resistance, quality of drugs, pharmacovigilance, and service provider's practices.

The public sector finance is monitored by the Policy Planning, Monitoring and Evaluation unit (PPME) (MOH&GHS) in collaboration with the Financial Control departments of the MOH/GHS

and the National Malaria Control Program. Monitoring of funds given to the private sector in malaria control from Global Fund is monitored by special agencies contracted to carry out this exercise.

Output indicators which were required to track progress are listed below.

Indicators used for monitoring the progress of the programme in 1998-2008 were:

- number of insecticide-treated nets (ITNs) sold or distributed
- number of nets retreated
- number of BCC materials produced
- number of pregnant women receiving IPT (1,2 or 3).

Data collected:

Table 1: Output Indicators and Type of data needed used for monitoring progress of programme implementation from 1998-2008

Indicator	Data needed
Number of insecticide treated nets sold or distributed	Includes both ITNs sold through subsidized net programmes in antenatal clinics and nets distributed free of charge to target populations through facility and community efforts; listed separately for PW through ANC
Number of nets retreated	Total number of nets retreated, including routinely through facilities and community health workers, and during Child Health Weeks and mass retreatment campaigns
Number of BCC materials produced	Total number of IEC materials, including print, media kits, durbars, dramas for malaria IEC/BCC activities
Number of pregnant women receiving IPT (1,2 or 3)	Total number of pregnant women receiving IPT1, IPT2 and IPT3 through antenatal clinic visits, listed separately for IPT1, IPT2, IPT3

Data collection method

The indicators were assessed mainly through routine data reporting from health facilities. The DHS, MICS and other special surveys by or in collaboration with the NMCP were also used to track output. The table below shows the source of data, frequency of data collected and institutions which were responsible for the indicators measured

Table 2: Output indicator, data source/ method/ frequency and institution responsible (1998-2008)

Indicator	Data source / method	Frequency	Institution/s responsible
Number of insecticide - treated nets (ITNs) sold or distributed	NMCP Reports NGO Reports	Quarterly	National, regional, district level
Number of nets retreated	NMCP Reports Campaign Reports	Quarterly	National, regional, district, facility
Number of BCC materials produced	NMCP	Quarterly	National
Number of pregnant women receiving IPT (1,2 or 3)	ANC records HMIS	Quarterly	National, regional, district, facility

1.5.2 Evaluation

Outcomes are the result of successful programme and project implementation efforts to deliver interventions to those who need them. Outcome measures generally refer to population-level coverage of interventions. At the population level, outcomes measures are useful for relating implementation efforts to changes in disease burden and health impact.

Outcome and impact were evaluated through special surveys such as DHS, MICS and MIS.
Measuring impact of malaria interventions was to determine the extent to which malaria or its associated disease burden changed as a result of implementing and scaling up recommended interventions and control efforts.

The underlisted indicators were used to evaluate the programme interventions in the past years.

Impact indicators

For areas of high stable malaria transmission and where the burden of malaria deaths is seen in children and where malaria deaths are thought to account for a large percentage of all-cause child deaths, the RBM MERG recommended the use of all-cause child mortality as one of the indicators for measuring impact of the malaria interventions. The indicators used were:

All-cause, under 5 child mortality

Under 5 malaria case fatality

Malaria (clinical) incidence rate

Severe anaemia prevalence among children

Outcome indicators

Core indicators to measure outcome were as follows:

Proportion of households with at least one ITN

Proportion of Children <5 who slept under an ITN the previous night

Proportion of Children <5 who received anti-malaria treatment

Proportion of Malaria cases confirmed

Proportion of Health care providers' correctly diagnosing and treating malaria

Proportion of Health facilities with no stock outs of anti-malarial drugs for more than a week during the last 3 months

Proportion of pregnant women receiving 2 or more doses of IPT for malaria during ANC visits

Proportion of pregnant women who slept under ITN the previous night

Table 3: Impact indicator and data needed (1998-2008)

Indicator	Data needed
All cause, under 5 child mortality	The probability of dying before the 5 th birthday, expressed per 1000 live births
Under 5 malaria case fatality	Numerator: Under 5 malaria death Denominator: Under 5 malaria admission
Malaria (Clinical) incidence rate	Numerator: Reported cases of malaria (<5 years, ≥5years) Denominator: Population, expressed per 1000
Severe anaemia prevalence among children	Numerator: Number of children aged 6 -30 months with severe (haemoglobin <8) Denominator: Total number of children aged 6 - 30 months surveyed within malaria-endemic areas

Data collection methods and sources

Malaria morbidity and mortality trends were tracked through routine institutional service reports from health facilities at the sub-district, district and regional levels.

At the national level, surveys such as DHS and MICS were useful for measuring changes in all-cause child mortality and coverage of interventions, but were not designed to reliably evaluate changes in disease - or malaria-specific morbidity or mortality.

Table 4. Below summarises the data source, frequency of data collection and institutions that were responsible for tracking the outcome of interventions (1998-2008)

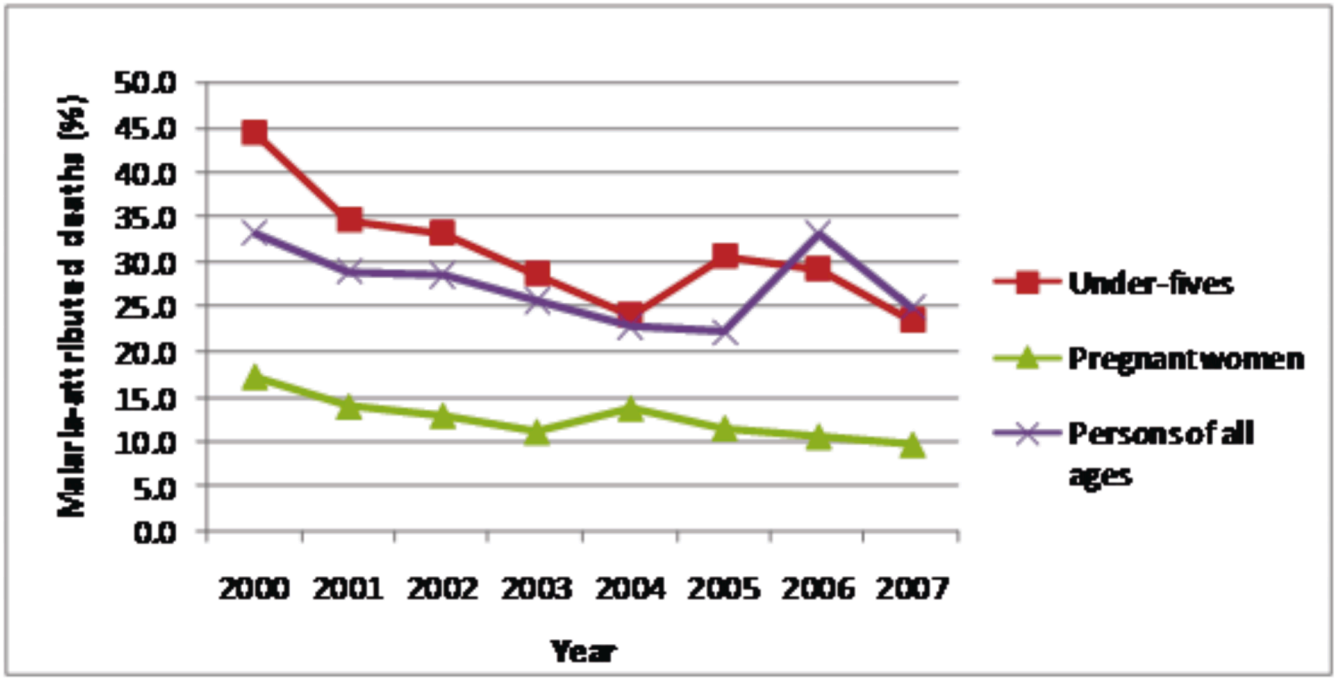
Indicator	Data source	Frequency	Institution/s responsible
Proportion of ho useholds with at least one ITN	DHS/ MICS	5 years (DHS) Biennial (MICS)	GSS UNICEF
Proportion of Children <5 who slept under an ITN the previous night	DHS/ MICS	5 years (DHS) Biennial (MICS)	GSS UNICEF
Proportion of Children <5 who received anti-malaria treatment	DHS/MICS	5 years (DHS) Biennial (MICS)	GSS UNICEF
Proportion of Malaria cases confirmed	GHS Routine Service Data	Annually (GHS)	GHS/CHIM
Proportion of Health care providers correctly diagnosing and treating malaria	Health facility surveys	Biennial	GHS/NMCP/PMI
Proportion of Health facilities with no stock outs of anti-malarial drugs for more than a week during the last 3 months	GHS Routine Service Data	Quarterly	GHS/CHIM
Proportion of Health care providers correctly diagnosing and treating malaria	Health facility surveys	Biennial	GHS/NMCP/PMI
Proportion of Health facilities with no stock outs of anti-malarial drugs for more than a week during the last 3 months	GHS Routine Service Data	Quarterly	GHS/CHIM
Proportion of pregnant women receiving 2 or more doses of IPT for malaria during ANC visits	HMIS	Quarterly (MIS/IDSR=monthly)	national, regional, district, facility
Proportion of Pregnant women who slept under ITN the previous night	DHS/ MICS	5 years (DHS) Biennial (MICS)	GSS UNICEF
Impact indicators			
Under five, all-cause child mortality	Representative, household surveys (DHS, MIS, MICS)	Every ~5 years	GSS National
Malaria incidence rate	HMIS	Quarterly (MIS/IDSR=monthly)	National, regional, district, facility
Malaria parasite prevalence	Representative, household surveys (DHS, MICS, MIS)	Biennial	National, regional
Severe anaemia prevalence among children	Representative, household surveys (DHS, , MICS, MIS)	Biennial DHS– every five years	National, regional

1.5.3 Trends in Malaria Control Intervention Indicators (2003-2007)

Annual surveys including DHS 2003, MICS 2006, have been carried out to assess progress of scaled-up implementation of these interventions. In addition, needs/gaps assessments have been conducted, including those by the PMI team in 2007 and by a joint RBM/WHO/JHPIEGO/NMCP team in 2008.

The total number of reported clinical cases of malaria at health facilities fell sharply from approximately 5 million in 2000 to about 3.1 million in 2002 and then rose again to 3.8 million in 2005. By 2007 it decreased to 3.3 million cases. The number of reported clinical cases consequently decreased from 256 cases per 1,000 mid-year population in 2000 to 136 cases per 1,000 mid-year population in 2007. The prevalence of fever among children under five years was also used as proxy for malaria prevalence. Available data suggested that the prevalence of fever has remained relatively stable at about 22% between 2003 and 2006. The incidence of severe malaria in children under five decreased consistently from 2004 to 2007; in pregnant women however, incidence rose from 2004 to 2006 and only dropped in 2007.

Figure 3: Malaria-attributable deaths as a percentage of all deaths reported in health facilities, Ghana (2000-2007)



Source: NMCP data, as presented in the Ghana Impact Evaluation Study (Macro: June 2008).

Table 5: The table below shows recent estimates of malaria indicators (2003, 2006)

Recent Estimates of Malaria Outcome Indicators: 2003 Ghana DHS; 2006 Ghana MICS		
Indicator	**2003 (DHS)**	**2006 (MICS)**
Proportion of households with one or more ITN	3%	18.7%
Proportion of children under five years old who slept under an ITN the previous night	3.5%	21.8%
Proportion of pregnant women who slept under an ITN the previous night	2.7%	NA
Proportion of targeted houses adequately sprayed with a residual insecticide in the last 12 months	NA	NA
Proportion of women who received two or more doses of IPTp during their last pregnancy in the last two years	0.8%††	27.5%
Proportion of children under five years old with fever in the last two weeks who received treatment with an anti-malarial according to national policy within 24 hours of onset of fever	44.2%	48.2%
Proportion of children under five years old with fever in the last two weeks who received treatment with ACTs	N/A††	3.4%

††ACTs were adopted in 2004; SP was adopted for IPTp in 2004

1.5.4 Use of Information from Monitoring and Evaluation

The monitoring visits had contributed to improving store keeping and logistic managements improve data recording and documentation, reduction in untimely and submission of incomplete reports, and the use of the information for planning gradually improving. Sharing of innovative practices from facility or district to others and proper forecasting of anti-malarias drugs are just few examples. Data collected from the field were analysed and the information used to inform policy change, planning and management decisions e.g., drug policy change in 2004 came about from information gathered from drug efficacy monitoring.

1.6 SWOT Analysis

The purpose of monitoring and evaluation is to define criteria for collecting data and information for measuring progress in programme or project implementation, achievements, and failures, such that the necessary remedial measures can be applied. In 2007, the country's M &E system was reviewed using the MEES-T. The findings of the group work were summarized under SWOT approach in the next page.

Strengths

Data sources

Results from surveys have been used to evaluate behaviour change towards the end of the programme.

Each programme level indicator has appropriate targets.

Health information officers' positions have been established to collate data at the intermediate aggregation level.

Weakness

In spite of achievements made over the years, NMCP have a number of challenges in the implementation of its programme, amongst these are:

Human resource at all levels, which is not adequate to cope with the volume of work in some districts and facilities couple with staff attrition.

The Health Management Information System (HMIS) from whereby facilities report to the district level to CHIM is characterized by incompleteness and delay in submission of data.

There is also inadequate logistics like computer and its accessories in many areas and usually one computer is shared amongst so many competing programmes and activities in the districts. Many staff are not able to use computers.

Data transfer from one level to the other has also been a major challenge as there have not been clear guidelines and mechanisms for movement of data from service delivery point through to intermediate aggregation centres to the national level.

Geographical inaccessibility of some communities in districts during the raining season was another big challenge as these communities were completely cut off therefore making supervisory visits difficult.

There have been too many reports to be submitted at a time and late submission from the sub-districts to districts. The frequent modification in malaria reporting format has also identified as challenge in the districts.

There are no written procedures to address late, incomplete or missing data from reporting entities.

There is weak collaboration between public and private sector in the implementation of programme activities as well as inadequate funding for M&E activities

Opportunities

Support from other agencies for monitoring and evaluation are gradually increasing.
Increase inflow of resources for malaria control
Strengthened partnership for malaria control

Threats

Inadequate funding support from partners

Sub-recipients inability to fulfil their commitment to meet deadlines in programme implementation and reporting.

Competing programmes in the districts is delaying timely submission of reports to the programme.
Various strategies (to be discussed in later sections) have been adopted to address the challenges above and to ensure smooth flow of data and reports from implementation level to the national level.

The M & E working also proposed at approaches for the harmonization of the monitoring the implementation of land activities and the evaluation of outcomes/couverages and impact of malaria control programme interventions in Ghana

2.0 The 2008 - 2015 National Malaria Control Strategic Plan

Since the launch of strengthened global efforts to prevent and control malaria, including RBM in 1999 and the Abuja Declaration in 2001, countries in Sub-Saharan Africa have made considerable progress in preparing and implementing national malaria strategic plans. There has been a dramatic increase in investment in malaria control. The majority of countries in Sub-Saharan Africa, including Ghana, has successfully submitted malaria proposals to the Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria (GFATM) and has received funding. Fifteen focus countries in Africa are benefiting from the U.S. President's Malaria Initiative. Additionally, many countries, including Ghana, have received increased resources for malaria control from other governmental, bilateral, and non-governmental sources. These investments are expanding the coverage of existing and new interventions with implementation both within and outside the formal health sector.

Ghana is planning for full national scale-up of its key malaria preventing and control strategies with a focus on the following objectives:

1 reducing malaria transmission through the use of insecticide-treated mosquito nets (ITNs), indoor residual spraying of house walls (IRS) and integrated vector management (IVM);

2 preventing the consequences of malaria in pregnancy through the use of ITNs, intermittent preventive treatment in pregnancy (IPTp), and case management for malaria illness; and

3 prompt and effective case management of malaria illness, particularly in young children,

4 These interventions are supported with IEC, research, monitoring and evaluation with strong collaboration with partners.

2.1 National Malaria M & E System Plan

A sound system of monitoring and evaluation of malaria control interventions at country level is critical in demonstrating progress in achieving outcomes and impact of all control efforts. Since malaria control effort involves several actors, including those outside the formal health ministry, the information generated by such an M&E system should respond to the information needs of key stakeholders. This approach is consistent with the Paris Declaration on Aid Effectiveness and with the "three ones" concept, which calls for national M&E systems to establish One Coordination mechanism, One M&E framework, and One strategy. There is need for consensus among the development partners, technical and implementing agencies on the basic core M&E framework. Such a consensus will reduce the burden of requests for data from different agencies.

This document identifies the key functions and actions of the Ghana malaria M&E system within the context of general health and disease M&E systems in Ghana; reviews current issues and opportunities that exist at national, regional, and district level; provides a summary of M&E planning; and reviews the necessary capacity to be built in order to fulfil these functions. This document also lays the foundation for measuring progress through the identification of the goals and objectives across malaria intervention strategies. Further, it provides guidance on specific

indicators against which progress will be measured. Finally, this document reviews the available and desired data sources and identifies the roles of key malaria M&E stakeholders.

2.2 Goals and Targets

The overall goal of the malaria control in Ghana is to facilitate human development by reducing the malaria disease burden by 75% by 2015 using 2006 as a baseline. This goal is to be achieved through overall health sector development, improved strategic investments in malaria control, and increased coverage towards universal access to malaria treatment and prevention interventions, including the community level.

2.3 General Objectives

The general objective of the national malaria control strategy is to contribute to improvement of the health of the population of Ghana by reduction of the malaria burden.

Objective 1 Deploy Multiple Prevention Methods

The overall objective is to reduce man-vector contact as much as possible and render the environment unsuitable for mosquito breeding. Promoting use of Insecticide-Treated Materials and Nets and Intermittent Preventive are the main pillars of prevention. Source reduction such as mass larviciding and outdoor residual spraying is not feasible in a hyperendemic country like Ghana, except in identifiable and targeted areas.

Outcome Objectives for Multiple Prevention:

100% of households will own at least one ITN by 2015

80% of the general population will sleep under ITNs by 2015

Increase the number of children under-five and pregnant women sleeping under treated net from current levels to 85% by 2015.

100% (All) pregnant women shall be on appropriate Intermittent Preventive Treatment (receive at least two or more doses of sulphadoxine-pyrimethamine under DOT) by 2015

90% of all structures in targeted districts will be covered through indoor residual spraying by 2015

Output objectives

To distribute ITNs to at least one net per two persons in a household by 2015

To offer technical support in source reduction such as targeted larviciding and indoor residual spraying

To distribute BCC materials on multiple prevention methods

To produce and disseminate monitoring and evaluation reports

Input Objectives

- To mobilize resources from all possible sources to promote the use of ITNs and IPT for pregnant women
- To develop standard operating procedures for IRS operations in Ghana.

Objective 2 Improve Access to Prompt and Effective Treatment

The overall aim is to ensure that symptoms and signs of malaria in the general population are recognized early and appropriate management is provided promptly at individual, family, community and facility levels. It seeks to ensure that caretakers/parents will be able to recognize symptoms and signs of malaria and respond appropriately and promptly within twenty-four hours of onset of fever. Health care workers should also have the knowledge and skills to manage all cases of malaria well, including complications, to reduce morbidity and mortality due to malaria.

Outcome Objectives for Improve Access to Prompt and Effective Treatment

By December 2015, the following objectives are set forth:

All (100%) health facilities will provide prompt and effective treatment using ACTs

90% of all patients with uncomplicated malaria will be correctly managed at public and private health facilities using ACTs

All (100%) communities will have access to community-based treatment for uncomplicated malaria

90% of caretakers and parents will be able to recognise early symptoms and signs of malaria. 90% of children under five years of age with fever will receive an appropriate ACT within 24 hours of onset

Output objectives

Case management guidelines produced

Anti-malaria drugs distributed

Health workers trained on new anti-malaria drug policy

Facilitative supportive supervision conducted

Input Objectives

Procure anti-malarial drugs

Develop case management guidelines and manuals for health workers

Train health workers on new anti-malaria drug policy

Conduct supportive supervision on malaria control activities at health facilities

Objective 3 Strengthen Monitoring, Evaluation and Operational Research

This is aimed at improving timeliness and completeness of data collection, interpretation of the collated data to inform and guide the programme and provide basis for policy decision as well as monitoring progress and outcome of interventions.

Objective 4 Strengthen the Health Systems at all Levels

This aims at providing a favourable environment for the implementation of malaria interventions. This will be achieved through the development of capacities in the health system for health delivery. It includes a mix of technical, managerial and logistic capacities required to promote, protect and improve health. It will place emphasis on the creation, expansion or upgrading of capabilities in the health system in order to fill capacity and service gaps, improve individual and institutional performance, and achieve objectives of the health sector.

The key result areas would include:

improved human resources (Technical and managerial), Infrastructure, Equipment, Transport, Information Communication Technology, Drugs, Essential Logistics and Health Industry

iImproved planned preventive maintenance to increase equipment availability

resources to support the replacement of obsolete equipment

Objective 5 Create and Sustain Partnerships for Malaria Control

This seeks to mobilize society for a well coordinated national action against malaria so as to establish a social movement supported and owned by all stakeholders to roll back malaria.

2.3 Objectives of the Malaria Control Monitoring and Evaluation Plan 2008-2015

The National Malaria Control M&E Plan has been developed in conjunction with the revised national strategic plan. It has been developed within the context of internationally accepted theoretical framework for M&E. This framework fosters the systematic collection of information on the input, process, output, outcome and impact indicators and the tracking of progress towards set targets.

The objectives of the national malaria monitoring and evaluation plan are:

to contribute to the strengthening of M&E systems in Ghana

to monitor/track progress of the implementation of planned activities

to evaluate the outcomes and impact of the control interventions

to coordinate the dissemination of M&E information for use in the country

2.4 Strategies to achieve objectives

1. Improving Routine Data Collection
2. Strengthening Surveillance at Sentinel Sites
3. Improving Data Reporting through Data Quality Audit.
4. Improving Review Meetings at all Levels
5. Improving Monitoring of Malaria Drugs and other Commodities
6. Strengthening partnerships/collaboration for outcome and impact evaluation.

2.5 The Implementation Approaches

Contribution to the strengthening of M & E Systems in Ghana
The national monitoring and evaluation plan 2008-2015 seeks to build upon systems/ structures already in place and improve on the challenges outlined in section 1.6. Systems in place for monitoring the interventions include the routine service data collection, Sentinel sites, periodic population based survey such as DHS and Drug Monitoring Systems and special research activities.

2.6 Routine System

Routine systems of the Ghana Health Service will be used to track malaria episodes at public, mission, quasi-governmental and some private health facilities in the country. Routine information on malaria will be collected through a variety of surveillance systems in Ghana, namely: the

Centre for Health Information (CHIM) and Integrated Disease Surveillance System (IDSR) systems, as well as a complementary Global Fund system - the latter of which is programmed to be largely absorbed by CHIM in the future.

2.7 The routine system will be improved by the following:

developing Standard Operation Procedures (SOPs) on data collection for use at all levels. This will include minimum data which need to be collected and the frequency of collection. This will be disseminated to staff at all levels.

training will be conducted for staff at all level on the use of the SOP/tool for the collection of the M&E data at all levels. The private sector will be involved in the training. Timeliness and completeness of data will be stressed.

strengthen routine data generation and flow from public/private facilities and community based health providers to the DHIMS by supporting the upgrade and maintenance of the software.

support monthly coordination meetings for data retrieval from communities/health facilities at district level.

facilitative supervision field visits will be conducted at all levels to monitor and support implementation of malaria control activities. The visits will also be used to monitor the use of the M&E tool for data collection to identify any deviation for corrective action to be taken. This will provide the opportunity for supervisors to correct any wrong practices encountered at the lower level and thereby strengthen the system.

2.8 Malaria Sentinel Sites

There are a number of sentinel sites for monitoring malaria control activities in Ghana. Amongst these are the five health facilities (Mamobi Polyclinic, Ashanti Mampong District Hospital, Kintampo District Hospital, Gushegu Polyclinic and Apam Catholic Hospital) used for tracking routine data on malaria mortality and morbidity.

Another ten (10) health facility site (Wa Hospital, Yendi Hospital, Navrongo War Memorial Hospital, Sunyani Hospital, Prampram Health Centre, Begoro District Hospital, Bekwai District Hospital, Ewim{Cape Coast} Health Centre, Hohoe District Hospital and Tarkwa Government Hospital.) are used for malaria drug efficacy testing.

These are used to determine the therapeutic efficacy of recommended combinations therapies given to patients with uncomplicated malaria. In addition to the drug efficacy monitoring, studies are conducted to also define the characteristics of P. falciparum resistance to combinations therapies. This generates a database on clinical and parasitological response to anti malaria in the country.

Two district (Kintampo in Brong Ahafo and Agogo in Ashanti region) are used for malaria vaccine trials

The country has another two sites (Obuasi Malaria Control Centre and Navrongo District Hospital) used as bases for entomologic monitoring.

2.9 Surveillance at these sites will be strengthened through the following:

training staff at the site to collect relevant data for monitoring the study

contracting external monitors to monitor progress of the study and also determine whether the study is done per the protocol

training of M&E staff including data collectors, data entry clerks and biostatisticians at these sites to help improve data collection at the sites

we will continue regular and periodic analysis of data at these sites to help advice the programme in order for the programme to take appropriate actions

there will be regular field visit by external monitors (Academic institutions and international NGOs) to ensure that activities are taking place as per protocol

2.10 Surveys

Surveys will continue to be conducted to measure outcome and impact of implemented programmes. Surveys in Ghana include the Demographic and Health Surveys (DHS) . In Ghana, DHS is conducted every five years, the most recent DHS survey was done in 2008. Others are the multiple indicator cluster survey (MICS), Malaria indicator survey (MIS), by UNICEF and Health Research Unit/NMCP/GHS respectively.

These surveys are normally done by external agencies other than the NMCP. However, inputs will be made by the programme regarding the malaria indicators so that it can be used to track performance nationwide.

2.11 Special research activities

The NMCP and other partners conduct operational research to understand issues and determinants related to some key malaria intervention strategies such as; mixed model approaches for ITN distribution; home-based management of malaria using ACTs; community acceptability of IRS, wall-lining insecticide efficacy and several others.

2.12 Operational research activities that needs to be done over the next 7 years include studies in:

morbidity including prevalence of malaria parasitaemia

Age/sex-specific mortality and morbidity due to malaria

RBM socio-economic evaluation analysis

efficacy of available insecticides;

KAP studies on use of ITNs

vector density and bionomics in Ghana;

biological control of mosquitoes;

sterile insect technique

efficacy studies of S/P for Intermittent Preventive Treatment in Pregnancy (IPTp)

intermittent Preventive Treatment for Infants (IPTi) Research

evaluation of alternative drugs for IPTp

malaria vaccine research

efficacy studies of available anti-malarial drugs and implications for treatment policy

efficacy studies on herbal preparations

Sentinel sites for G6PD deficiency.

2.13 Data Quality Assurance

Primary data collection at hospitals, health facilities and clinics will be captured electronically. This will involve strengthening existing NHIS software and integrating with the enhanced DHIMS (provided in Global Fund Round 9 HSS application). This will reduce data errors and improve quality. Regional and national capacity to conduct data quality audits will be strengthened through training. Quarterly data quality audits will be conducted at the regional level and selected health facilities across the regions. Results of the DQA will be discussed through a feedback mechanism with follow-up visits to ensure that recommendations are being implemented. Activities under this strategy include:

print Revised Standard Operating Procedure for systematic data verification. The updated SOP will be printed and distributed across public and private health facilities.

refresher trainings for district and regional level hospital managers and information officers on data audit tools (including SOP) will be conducted. This will improve data management skills. Training will be conducted targeting 330 health information officers (170 district health information officers, 140 district hospital managers, and 10 regional health information officers and 10 regional hospital managers).

data quality audits will be conducted at the facility level. Regional level managers will verify data at the regional level. Each region has 1-2 officers who will visit about 3 facilities each

quarter. District level managers will also conduct data quality audits at district facilities. Valuable lessons will be learnt from EPI data quality audits.

" Data quality visits will occur 10 days per quarter in each region, and 5 days every 6 months in each district. Data quality audits will be used to ensure that reporting forms in both the public and private sector are being completed correctly.

2.14 Strengthening Drug Monitoring System

Pharmacovigilance Systems

A pharmacovigilance system exists in the country to monitor suspected adverse drug reactions (ADRs) including reactions to anti-malarials. The system monitors the incidence of ADRs in the country following the use of anti- malaria drugs, risk factors for ADRs, and related data.
This will be strengthened by collaborating with FDB to improve pharmacovigilance through the following:

advocate for private sector involvement in ADR reporting

training on the reporting and management of adverse drug reactions, and communication of safety concerns through the existing reporting structure

print adverse drug reaction reporting forms for private sector outlets

conduct regular visits to supervise drug quality monitoring activities

advocate/support for additional logistics and staff.

Post-market Surveillance Systems

The Ghana Food and Drugs Board is responsible for the post market surveillance to ensure quality and safety of recommended anti- malarials on the Ghanaian market as well as the detection of counterfeit or substandard drugs in Ghana. The board will monitor consumer complaints, and the storage and stock levels of anti malaria drugs.

The INDEPTH network for safety and effectiveness studies (INESS) intends to carry out post-marketing surveillance of anti-malarials in three DHS sites in Ghana namely, Dodowa, Kintampo and Navrongo from 2009 to 2014.

NMCP will collaborate with these institutions to promote effective post-market surveillance of anti-malaria drugs.

Drug Efficacy Monitoring System

There are currently 10 sentinel study sites on anti-malarials in Ghana. These are used to determine the therapeutic efficacy of recommended combinations therapies given to patients with uncomplicated malaria. In addition to the drug efficacy monitoring, studies are conducted to also

define the characteristics of P. falciparum resistance to combinations therapies. This generates a database on clinical and parasitological response to anti malaria in the country.

This can be strengthened by:

Training staff at the site to collect relevant data for monitoring the study

Contracting external monitors to monitor progress of the study and also determine whether the study is done per the protocol.

Logistic management Information System

With the help of PMI/USAID has initiated a system for tracking the supply, stocking and distribution of malaria commodities.

The initial item being tracked now is ITNs, and this would be expanded to cover drugs, diagnostic materials, insecticides as the system is upgraded in the coming years. This constitutes part of the general PSM plan for malaria commodities in the country.

Logistic Supports

The NMCP will continue to assess its current infrastructure and identify gaps and needs for a fully operational M&E unit to undertake the necessary primary or secondary collection, management, analysis and dissemination of information.

Examples of areas for further strengthening will include, but not be limited to:

ensuring sufficient computers, printers, report production facilities to meet staff data management needs,

providing appropriate software for the M&E work, including spread sheet, data management, data analysis, geographic information system, and/or publishing software,

providing appropriate technology for community/household surveys and facility surveys (e.g., could include PDA-based data collection with GIS capability and the requisite programming and systems management tools)

enhancing report-production capabilities (e.g., publishing software, printing capability for basic reports) and report transfers.

Staff Capacity Development in M & E

In order to meet certain Global Fund reporting requirements and avoid delays, the NMCP has had to run a parallel data collection in the past. The Global Fund Round 2 and 4 grants supported the NMCP to establish three zonal offices to coordinate the implementation of Global Fund M&E activities. The support enabled the NMCP to directly collect data demanded by the funding agents in collaboration with the DHMTs, sub-districts, and facilities.

There is a need to improve the numbers, skills and competencies, of M&E staff across all levels, including the private sector. Special emphasis should be placed on training of staff at the periphery to ensure the quality of data being produced.

At the central level, one area of focus will be strengthening of the NMCP's M&E Unit. This will require the following steps:

definition of the entire spectrum of M&E activities and tasks to be done by the program M&E Unit at all levels

Establish job description and tasks for the required staff positions.

The NMCP will establish skills training and development, focused on MOH/GHS staff at the central and peripheral levels. Some training of staff in the private and NGO sectors will also be planned, to improve collaboration. Training topics will include monitoring and evaluation; supervision; and information technology and its use. Training of staff at the central and peripheral levels will take the form of:

short courses

on-site supervisions and coaching.

Dissemination

Information generated from the monitoring and evaluation will be disseminated through the following channels; print and electronic media as well as interpersonal.

1. Print Media

Publications will be made in the form of magazines and articles at periodic times. Currently, bulletins on malaria are:

a. malaria watch
b. malaria alert
c. International scientific journals.

2. Programme Performance Review

Performance reviews of the NMCP are carried out within the framework of the GHS integrated performance review. This consists of regular quarterly, half yearly and annual reviews done at all levels of GHS.

The NMCP plans to conduct it at regular interval and use the opportunity to do a more in-depth performance gap analysis, sharing information on best practices, and planning response on specific issues and also on cross - cutting operational challenges.

3. Electronic Media (Television,Radio, Ghana Malaria Website)

A website will be developed to disseminate information on outcome of the monitoring and evaluation activities. This will provide an avenue for tracking malaria control indicators and

performance.

Information Products

To satisfy its own information needs and those of key stakeholders, the National Malaria Control M&E System would produce periodic timely reports of the status and progress in malaria control in the country. These reports will include:

annual Malaria Control Programme Reports

GFATM-required quarterly reports

RBM/WHO Regional and Global Reports

other donor required reports (World Bank, PMI, etc).

In addition to these periodic information products, the NMCP will also respond to specific and ad hoc information needs of its stakeholders.

3.0 Monitoring and Evaluation

Monitoring progress of implementation and the evaluation of outcomes and impact of interventions will be guided by the following steps:

Step 1: Identify and engage stakeholders (partners including decision makers), their interest and their roles in the monitoring and the evaluation processes

Step 2: Involve partners to work on the Logic Model for the Monitoring and Evaluation

Step 3: Focus the Monitoring and the Evaluation processes by defining the impact objectives, outcome objectives, outputs objectives, processes and inputs objectives

Step 4: Gather credible data/evidence

Step 5: Organize and interpret results and conclusions

Step 6: Prepare and disseminate reports

3.1 Monitoring Progress of Implementation

Step 1: Engage Stakeholders

Harmonization of M&E activities of the various malaria control initiatives, such as RBM, GFATM, PMI, UNICEF and World Bank, NGOs requires coordination, joint planning, and information sharing at the national level. This national level harmonization has been functional to a large

degree in recent years, although it should be strengthened in various ways.

Implementers should coordinate and share information with MOH/GHS structures at the relevant regional and district levels as well. The MOH/GHS health information system relies upon data gathering from the sub-district and district levels.

The District is the focus for the planning and implementation of prevention and control activities including malaria control activities. The implementers of the planned activities are the public health facilities, private for profit and not for profit health facilities, NGOs and Community-based Organizations (CBO) with support from the NMCP and other funding agencies.

The DHMTs will be supported to:

engage partners/implementers in joint reviews and planning activities including monitoring and evaluation processes

strengthen/create one team for monitoring and evaluation processes at the district level through training, provision of equipment (computers, and accessories) supplies and supportive supervision from the RHMTs/ Zonal officers of the programme and from the National Level.

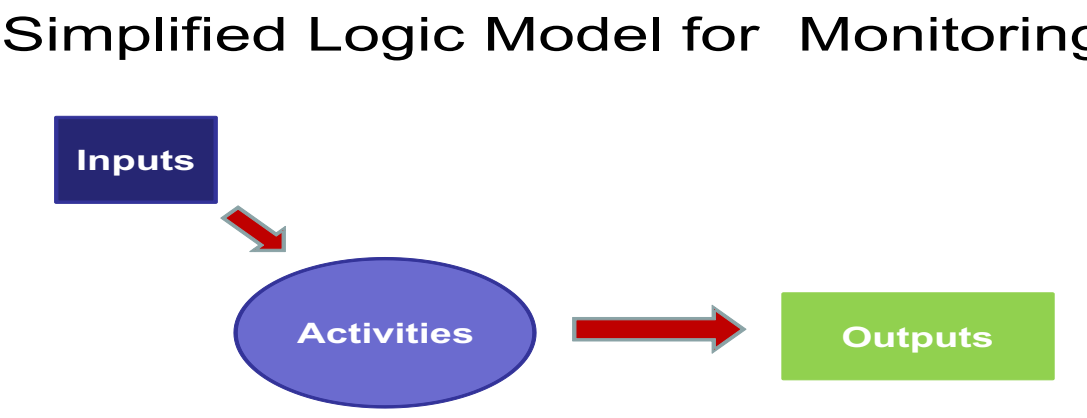
create network for monitoring and evaluation

share/disseminate M&E information.

Step 2: Monitoring the Process

Inputs (Finance, Staff, Materials and Supplies), Processes (activities-training and delivery), Outputs (staff, commodities) will be monitored and the Monitoring process will be guided by the following Logic Model.

Figure 4: Simplified Logic Model for Monitoring Interventions



Step 3: Monitoring Objectives and indicators

Based on the strategic plan for malaria control in ghana (2008-2015)

Table 6: Input, Process and Output Indicators to be measured by Interventions are shown in the table below.

INTERVENTION	INPUTS	PROCESS	OUTPUT	OUTPUT INDICATOR
ITN	ITNs procured by NMCP and those supplied by partner agencies	Procure only Long Lasting Insecticide Treated Nets (LLINs) and Long Lasting retreatment kits.	Increased use of ITNs by children and pregnant women	Number of insecticide treated nets sold or distributed
		Promote coordination and communication among suppliers of ITNs/LLINs		
	Retreatment kits for retreating nets	Improve supply chain, storage and distribution management.		Number of nets retreated
		Improve ACSM to focus on challenges of ITN/LLINs use.		
		Promote and facilitate the consistent and correct use of ITNs in order to translate rising ownership rates into high use rates.		
		Promote use of other ITMs, such as treated curtains and wall paper.		
IRS	Technical support	Prior to IRS implementation in each district, vector identification and susceptibility to insecticide assessment will be carried out.	Reduction of mosquito population through in -door residual spraying	Number of people trained on IRS
	Standard operating procedures	Baseline parasite prevalence studies will be conducted at sentinel sites prior to IRS activities and repeated annually.		Number of eligible structures sprayed
	Logistics and equipments (e.g. pumps and PPEs)	Build local capacity for sustainability in IRS activities.		
IPT		Make SP available at Antenatal Clinics, both static and outreach clinics in public, quasi - government, FBOs and private facilities.	SP used regularly for IPT during pregnancy	Number of pregnant women receiving IPT (1,2 or 3)
		Promote use of other personal protective measures like the use of mosquito repellents and protective clothing.		
Case Management				
Diagnosis of Malaria	Resources - Financial	Train and equip health workers on RDT use and microscopy	Early recognition of fever and early treatment with ACTs especially at the home.	Number of malaria microscopy slides taken
	New drug policy document	Make available guidelines and logistics		Number of malaria Rapid Diagnostic Tests (RDTs) taken

INTERVENTION	INPUTS	PROCESS	OUTPUT	OUTPUT INDICATOR
	Technical support	Monitor the use of diagnostic test		
	Case management guidelines	Ensure quality of diagnostics		
		Improve quality laboratory control systems		
	Logistics and equipment (e.g. microscopes)	Provide infrastructure where needed		
Treatment of Uncomplicated Malaria		Training of licensed chemical sellers and community pharmacists as CDD or CBAs.	Appropriate referral of severe cases assured	Number of malaria cases treated
	Technical support	Provision of ACTs prepacks and rectal artesunate to CDD in accordance with national policy		
Management of severe Malaria	Case management guidelines	Provide appropriate and prompt management to reduce the progression into severe disease and death	Quality of treatment for malaria improved	
	Drug treatment charts	Promote community recognition and prompt referral of severe cases		Number of deaths in children under 5 years
	New drug policy document	Use antimalarial suppository at the community level for pre-referral	Referral from community level for severe malaria improved	
		Train the public, CDD and CBAs on recognition of symptoms of severe malaria		
Management of malaria in pregnancy	Case management guidelines	Training of staff in management of malaria in pregnancy		Number of pregnant women who had severe malaria
		Improve laboratory diagnosis of malaria in pregnancy		
		Make medicines and other logistics for management of malaria in pregnancy available in all health facilities	Number of deaths due to malaria in pregnancy reduced	
Malaria and HIV/ AIDS	Resources - Financial - Drug supplies - Technical support	Promote collaboration between malaria and HIV stakeholders at all levels	Reduced number of PLWAs with malaria	
		Integrate malaria prevention strategies into VCT and ART services.	Increased ART centres with access to antimalarials	Number of ART centres with access to antimalarials
		Strengthen health system response to HIV-Malaria co-infection	Increased ART centres with access to ITNs	
Malaria and Sickle cell Disease	Case management guidelines	Develop guidelines on the control of malaria in sickle cell patients	Health workers trained in the management of malaria in sickle cell patients	Number of health workers trained in the management of malaria in sickle cell patients

INTERVENTION	INPUTS	PROCESS	OUTPUT	OUTPUT INDICATOR
	Technical support	Training of health workers in the management of malaria in sickle patients		
		Promote research on malaria in sickle cell patient		
Malaria in Non-immunes	Case management guidelines	Promote use of appropriate and effective preventive prophylaxis		Number of non -immunes given effective preventive prophylaxis
	Technical support	Provide timely and appropriate information for non-immune visitors at strategic points (points of entries, hotels, embassies, Ghana mission abroad etc.)	Improved case management for non -immunes	

Step 4: Gather Credible Evidence

Planned Data Collection for monitoring inputs, processes, and outputs are shown in table 7

Table 7: Plan for Data Collection (2008-2015)

Step 5: Organize and Interpret Results and Conclusions

Indicator	Data to be collected	Data source	Methods (Techniques and Tools)	Frequency	Institution/s responsible
Number of insecticide - treated nets (ITNs) sold or distributed	Includes both ITNs sold through subsidized net programmes in antenatal clinics and nets distributed free of charge to target populations through facility and community efforts; listed separately for PW through ANC	NMCP Reports NGO Reports	Routine Campaigns HIS	Quarterly	National, regional, district level
Number of nets retreated	Total number of nets retreated, including routinely through facilities and community health workers, and during Child Health Weeks and mass retreatment campaigns	NMCP Reports Campaign Reports	Routine Campaigns HIS	Quarterly	National, regional, district level
Number of clinical malaria cases confirmed by microscopy or RDT	Total number of slides or RDTs taken for confirmation of clinical diagnosis of malaria	DHMIS	Routine NMCP reporting format	Quarterly	National, regional, district, facility
Number of BCC materials produced	Total number of IEC materials, including print, media kits, durbars, dramas for malaria IEC/BCC activities	NMCP		Quarterly	National
Number of people trained on IRS	Total number of spray operators trained to carry out IRS	IRS report	Routine End of training report	End of spray period	IRS implementer
Volumes / sachets of insecticide used for vector control	Total volume / sachet of insecticides used for vector control, including indoor residual spraying, net retreatments, and other Integrated Vector Management activities. (see WHO standard definition)	NMCP Reports	Routine End of spray report	Annual	National

Indicator	Data to be collected	Data source	Methods (Techniques and Tools)	Frequency	Institution/s responsible
Number of people protected under IRS	Total number of people covered by IRS in target areas	IRS report	Routine IRS reporting template	End of spray report	IRS implementer
Number of health workers trained on adverse events tracking	Total number of health workers trained to track adverse events of antimalarials	NMCP Reports	Routine End of training report	Yearly	National, Regional, District level
Number of adverse events reported	Total number of adverse events/ cases that were reported according to national policy	NMCP Reports	Adverse event reporting forms	Quarterly	National, Regional, District level
Number of women who took at least two doses of SP	Number of pregnant women receiving IPT 2 and IPT3	Health facilities (ANC)	Routine IPT reporting template	Monthly	National, Regional, District level
Malaria budget received (%)	Numerator: Total amount of money received by the NMCP/country for malaria control all sources Denominator: Total amount of money planned for malaria control all sources in a year	NMCP	Audit/ Financial statement PU/DR	Annually	National

All implementers at the district level will summarize monitoring data on monthly reporting for ACT and IPT, and submit the completed Monitoring Reporting Form to the DHMT.

Step 6: Prepare and Disseminate Monitoring Report

The DHMT will summarize monitoring data from all implementers in the district on quarterly basis using Monitoring Reporting Forms, ACT and IPT reporting formats/ templates, feed information to the DHIMS, provide feedback to all implementers and submit programmatic and financial monitoring Report to the regional malaria focal person, NMCP Zonal officers and National on quarterly basis.

At the district level

Routine patient care data will be provided through the CHIM system.

Activity reports will be provided to the RHMTs on a quarterly basis.

Ensure timeliness in the compilation of Quarterly Reports from health facilities/ sub-districts and submit them to RHMTs not later than 14 days after the end of the quarter.
Provide regular feedback to the facilities/ sub-districts and use of information to provide or facilitate support to the sub-districts.

Regional/Zonal Level

Will conduct quarterly visits for monitoring/support/supervision to the districts, using standardized tools (forms, checklist, and/or PDAs).

Will obtain and review district quarterly monitoring reports

Will compile quarterly monitoring reports by districts and provide feedback to the districts and use information to provide or facilitate support to the districts.

Will send quarterly reports to NMCP no later than 21 days after the end of the quarter.

National Level

Will compile data from all recipients/districts, prepare and disseminate progress report and share information with recipients/districts and other partners on half-yearly basis, and also use information for re-planning and advocacy.

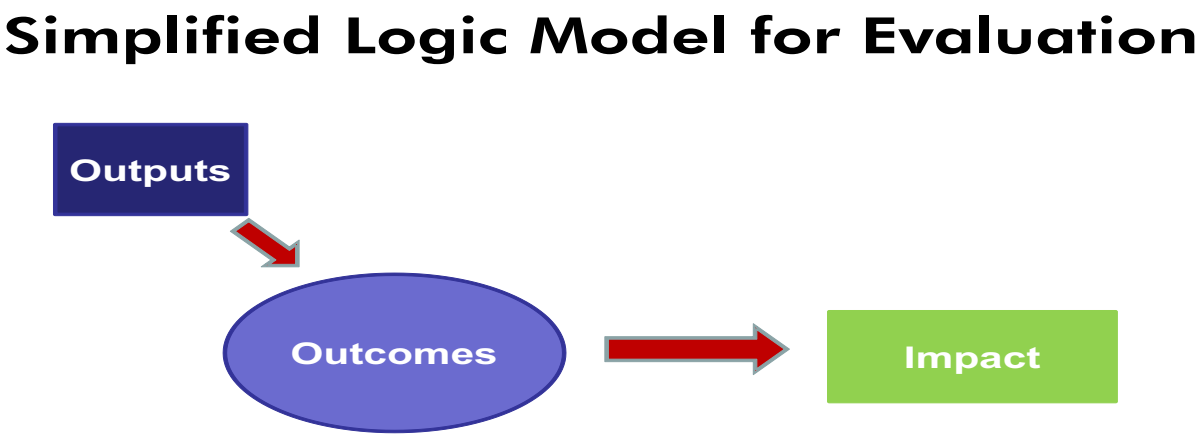
Will organize a program review and planning meeting on six-monthly/or yearly basis.

Will develop a database on progress being made and share information with recipients/districts and other partners. Once developed, the database will be updated regularly.

3.2 Evaluation of Outcomes and Impact of Interventions

The evaluation process will be based on the following Logic Model for Evaluation

Figure 5: Simplified Logic Model for evaluating outcome and impact



Steps in the Evaluation Process

Step 1; Identify and engage stakeholders (partners including decision makers), their interest and their roles in the evaluation processes

Step 2: Involve partners to work on the Logic Model for the Evaluation

Outcomes (coverage, uses, behavioural change), Impact (morbidity, mortality, disability, socio-economic status) will be evaluated and the evaluation process will be guided by the Logic Model in Fig 5.

Step 3: Defining the outcome objectives and impact objectives, the relevant indicators and measures of impact, outcomes and programmes performance that will be used are listed in the table below.

Table 8: Outcome and Impact Indicators to be measured by Interventions (2008-2015)

INTERVENTION	OUTCOMES	OUTCOME INDICATOR	IMPACT	IMPACT INDICATOR
ITN	Increased proportion of households that own at least one ITN	Proportion of households with at least one ITN to 2 persons	Morbidity due to malaria reduced	All-cause, under 5 mortality rate
	Increased proportion of children under five years who sleep under an ITN.	Proportion of Children <5 who slept under an ITN the previous night	Mortality due to malaria reduced	Under 5 malaria case fatality rate
	Increased proportion of pregnant women who sleep under an ITN.	Proportion of Pregnant women who slept under ITN the previous night	% of pregnant women sleeping under ITNs increased	
IRS	Increased proportion of people protected by IRS.	Proportion of targeted structures that received Indoor Residual Spraying (IRS)	Mortality due to malaria reduced	Malaria parasite prevalence
	Increased proportio n of districts covered by IRS	Proportion of targeted population protected by IRS		Malaria parasite prevalence
	Increased proportion of targeted structures which are sprayed.			Malaria parasite prevalence
	Increased number of people trained in IRS			
IPT	Increased percentage of pregnant women receiving at least two doses of SP (IPT_2)	Proportion of pregnant women receiving 2 or more doses of IPT for malaria during ANC visits	Morbidity due to malaria reduced	% Reduction in severe malaria in pregnancy
Case Management				
Diagnosis	Increase percentage of clinical cases of malaria confirmed by laboratory testing (RDT or microscopy)	Proportion of Malaria cases confirmed	Morbidity due to malaria reduced	Malaria (clinical) incidence rate
Treatment of uncomplicated malaria	Increase proportion of districts Implementing home based care for malaria in children	Proportion of Children <5 who received anti-malaria treatment (ACTs) at community level according to national policy within 24 hours of onset of fever.	Mortality due to malaria reduced	All-cause, under 5 mortality rate
	Increase proportion of patients who have access to prompt and appropriate treatment for uncomplicated malaria	Proportion of Health care providers correctly diagnosing and treating malaria		

INTERVENTION	OUTCOMES	OUTCOME INDICATOR	IMPACT	IMPACT INDICATOR
Severe Malaria	Proportion of admissions due to severe malaria reduced	Proportion of Health facilities with no stock outs of anti-malarial drugs for more than a week during the last 3 months	Case fatality rate of malaria reduced	All-cause, under 5 mortality rate
	Referral from community level for severe malaria improved			Under 5 malaria case fatality rate
Management of malaria in pregnancy	Proportion of malaria cases in pregnancy reduced	Proportion of pregnant women receiving 2 or more doses of IPT for malaria during ANC visits	Mortality due to malaria in pregnancy reduced	Malaria (clinical) incidence rate
	Proportion of malaria cases in pregnancy reduced		Morbidity due to malaria in pregnancy reduced	
Malaria and HIV/AIDS	Reduced proportion of PLWAs with malaria	Proportion of PLWAs who were diagnosed with malaria	Morbidity due to malaria in PLWAs reduced	Malaria (clinical) incidence rate
	Increased ART centres with access to antimalarials	Proportion of ART centres who have antimalarials		
	Increased ART centres with access to ITNs		Mortality due to malaria in PLWAs reduced	
Malaria and sickle cell disease	Reduced malaria cases among patients with sickle cell disease.	Proportion of patients with sickle cell disease who were diagnosed with malaria	Morbidity due to malaria among patients with sickle cell disease reduced	Malaria (clinical) incidence rate
Malaria in Non-immunes	Improved case management for the non-immune	Proportion of health staff with training in malaria case management for the non-immunes	Morbidity due to malaria in non-immunes reduced	Malaria (clinical) incidence rate
	Reduced malaria cases in non-immunes	Proportion of malaria cases diagnosed in non-immunes		

Step 4: Gather Credible Data/Evidence

Data Collection for monitoring inputs, processes, and outputs

Table 9: Outcome (coverage) indicators for malaria interventions to be measured 2008-2015, data to be collected, data sources, frequency of data collection and institutions responsible

Indicator	Data to be collected	Data source/ Methods	Frequency	Institution(s) responsible
Proportion of households with at least one ITN to 2 persons	Number of households surveyed within malaria - endemic areas with at least one mosquito net which has been trea ted within the last 12 months or is a Long-lasting Insecticidal Net (LLIN) Total number of households surveyed within malaria-endemic areas	DHS/ MICS	5 years (DHS) Biennial (MICS)	GSS UNICEF
Proportion of Children <5 who slept under an ITN the previo us night	Number of children under 5 years old who slept under an ITN the previous night Total number of children under five years surveyed within malaria-endemic areas	DHS/ MICS	5 years (DHS) Biennial (MICS)	GSS UNICEF
Proportion of Children <5 who received anti -malaria treatment (ACTs) according to national policy within 24 hours of onset of fever.	Number of children under 5 years old with reported fever in the previous 2 weeks who received antimalarial treatment according to national policy within 24 hours of onset of the fever Total number of children under five years with fever surveyed within malaria-endemic areas	DHS/MICS	5 years (DHS) Biennial (MICS)	GSS UNICEF
Proportion of children <5 with uncomplicated malaria correctly managed at health facilities	Number of children under 5 years old diagnosed with malaria who receive correct treatment Number of children under five years diagnosed with malaria	GHS routine service data	Annually (GHS)	GHS/ CHIM
Proportion of children <5 admitted with se vere malaria and correctly managed	Number of children under 5 years confirmed with severe malaria and correctly managed Number of children under 5 years confirmed with severe malaria	GHS routine service data	Annually (GHS)	GHS/ CHIM
Proportion of Malaria cases confirmed	Number of confirmed reported malaria cases Number of reported malaria cases	GHS Routine Service Data	Annually (GHS)	GHS/CHIM
Proportion of Health care providers correctly diagnosing and treating malaria	Number of health providers correctly diagnosing and treating malaria Number of health providers	Health facility surveys	Biennial	GHS/NMCP/PMI
Proportion of Health facilities with no stock outs of anti - malarial drugs for more than a week during the last 3 months	Number of health facilit ies with stock out for more than 7 days Number of health facilities reporting	GHS Routine Service Data	Quarterly	GHS/CHIM
Proportion of pregnant women receiving 2 or more doses of IPT for malaria during ANC visits according to national policy	Number of pregnant women receiving IPT_2 and IPT_3 Number of ANC attendants/registrant	HMIS	Quarterly (MIS/IDSR=monthly)	national, regional, district, facility
Proportion of Pregnant women who slept under ITN the previous night	Number of pregnant women who slept under an ITN the previous night Total number of pregnant women surveyed within malaria-endemic areas	DHS/ MICS	5 years (DHS) Biennial (MICS)	GSS UNICEF
Proportion of targeted structures that received Indoor Residual Spraying (IRS)	Number of eligible structures sprayed Number of eligible structures targeted for IRS (This indicator represents operational coverage for IRS efforts at districts and national level)	H-hold survey	Bi-Annual	OMCC (AngloGold Ashanti,) RTI/PMI
Proportion of targeted population protected by IRS	Total number of people protected by IRS Total population targeted	H-hold survey	Bi-Annual	OMCC (AngloGold Ashanti) RTI/PMI
vector transmission indices including vector density, entomological inoculation rate		Survey in sentinel districts	Annual	OMCC (AngloGold Ashanti) RTI/PMI

Table 10: Impact indicators, data to be collected, data sources, frequency of data collection and institutions responsible (2008-2015)

Indicator	Data to be collected	Data source	Frequency	Institution/s responsible
All-cause, under 5 mortality rate	Total death of children under 5 Total admission of children under 5	DHS/MICS GHS Routine Service Data	5 years (DHS) Bi-Annually (MICS) Annually (GHS)	USAID/Macro GSS UNICEF GHS/CHIM
Under 5 malaria case fatality	Under 5 malaria death Under 5 malaria admission	DHS/MICS GHS Routine Service Data	5 years (DHS) Bi-Annually (MICS) Annually (GHS)	GSS UNICEF GHS/CHIM
Malaria (clinical) incidence rate	Total number of new malaria cases Total population at risk	GHS Routine Service Data	Annually (GHS)	GHS/CHIM
Percentage of children aged 6 -59 months with anaemia	Number of children aged 6 -59 months with Hb < 5mg/dl and or Hct< 15% Number of children aged 6 -59 month diagnosed with malaria	DSS/DHS	Annually	GHS/HRU/GSS
Malaria parasite prevalence	Number of children under five years with malaria parasites, tested either through microscopy or RDTs Total number of children under five years surveyed within malaria-endemic areas	DSS/DHS	Annually	GHS/HRU/GSS

Step 5: Organize and Interpret Results and Conclusions

Results of evaluation process by responsible agencies or organisations will be organised into a report and submitted to NMCP. Results would mainly centre on progress made at specified periods in terms of outcome and impact of programme implementation. Data collected from implementation level will be compiled and collated at the intermediate aggregation level where it will be scrutinised and verified and then submitted to the next higher level.

Step 6; Prepare and Disseminate Reports

At national level, reports received from all recipients/districts, will be prepared, analysed and progress report disseminated. Information will be shared with recipients/districts and other partners periodically and also use the information for re-planning and advocacy.

A programme review and evaluation meeting will be organised on yearly basis. Furthermore, a database will be developed on progress being made and share information with recipients/districts and other partners. Once developed, the database will be updated regularly.

Malaria M & E System Strengthening Work Plan

The table below shows activities and sub activities that will be carried out on monitoring and evaluation system strengthening by time lines.

SN	Activity	Sub-Activity	Timing (Year 1)				Timing (Year 2)				Timing (Year 3,4,5)		
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Y 3	Y 4	Y 5
A.0	**HUMAN RESOURCES**												
A.1		Recruitment of addition al staff (HIO, data entry clerks)											
A.2		Recruit additional M&E staff to meet M&E activity needs											
B.0	**IMPROVING STAFF COMPETENCE IN M&E**												
B.1	Develop district malaria M&E guidelines	Workshop M&E guidelines and plan development											
B.2	Dissemination of M&E plan and district guidelines	One week orientation on malaria M&E for RHMT staff											
B.3	Strengthen Capacity for malaria M&E at all levels	Support initial and refresher training courses for National M&E team in Data Management, Survey Methodology and Reporting, Project Monitoring and Evaluation and Impact Evaluation.											
B.4		Graduate studies in public health/M&E (2 people at $50,000/person)											
B.5		Train regional and district health information officers & regional and district malaria focal persons in record keeping and reporting of programme monitoring and evaluation											
B.6		Train health workers of pu blic/private health facilities in record keeping, reporting, program monitoring and evaluation											
B.7	Trainings (On GHS soft ware - DHMIS)	Training on computer and data management (Including the use DHIMS software)											
C.0	**ROUTINE DATA COLLECTION**												
C.1	Strengthen routine data generation and flow from public/private facilities and community based health providers to the District Health Information Management System (DHIMS).	Organize public and private sector stakeholders' workshop on strengthening M&E at national level											
C.2		Organize public and private sector stakeholders' meetings on strengthening M & E at zone level: Workshop in 3 zones, 30 people 1 zones each year 1, 2 and 3 repeated in years 4 and 5											

SN	Activity	Sub-Activity	Timing (Year 1)				Timing (Year 2)				Timing (Year 3,4,5)		
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Y 3	Y 4	Y 5
C.3		Update Inventory of public/private health facilities (location, services, capacity) in all districts through DHMTs & Health Associations											
C.4		Reporting and supervision of community based (Public & Private) treatment providers											
C.5	Support monthly coordination meetings for data retrieval from communities/health region, facilities at DISTRICTS level	Support monthly coordination meetings of districts focal persons at the regional level											
C.6		Support monthly meetings of M&E working group at national level											
C.7		Support quarterly supervisory visits to region and districts by national											
C.8		Support monthly supervision of districts and health facilities by regions (HIO/malaria focal person)											
C.9		Support monthly supervision of health facilities by the district malaria focal persons and district HIOs											
C.10		Support monitoring and supervision of malaria control activities of CDDs/CBAs by CHOs											
D.0	**DATA MANAGEMENT**												
D.1		Organize training on District Health Information Management System (DHIMS) at all levels											
D.2	Strengthening Data Management	Training on data management to NMCP staff: Short training courses on data management and software application											
D.3		Customization, updating, utilization of comprehensive malaria database: Consultancy											
D.4	Improve Data Quality	Develop written data entry/processing plan (to include policies on incomplete or late reporting by sub-reporting entities): Consultancy											
D.5		Develop SOPs for data entry, processing and management: Consultancy											
D.6		Training of malaria focal persons and HIO unit staff											
D.7		Establish database for Malaria: logistics: ITN distribution/reports survey, antimalaria, : Consultancy											
D.8		Establish Data Audit Team											
D.9		Carried out Periodic Data Audit											
D.10		Establish Electronic DataTransfer mechanisms											
E.0	**TRACTURE, TOOLS AND TECHNOLOGY**												
E.1	Upgrade IT facilities in GHS/NMCP	Procure computers and its accessories for district malaria team (50)											
E.2		Procure PDAs for data c apturing activities at the Regional and District levels (200)											
E.3		Procure computers for regional and national malaria team - 12 computers and printers											
E.4		Upgrade IT facilities at National and regional levels to network data generation and reporting											

SN	Activity	Sub-Activity	Timing (Year 1)				Timing (Year 2)				Timing (Year 3,4,5)		
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Y 3	Y 4	Y 5
E.5		Upgrade IT facilities at national level: Establishment of website and its management)											
E.6		Improve ICT infrastructure at NMCP: Server and its accessories (2 servers; CHIM)											
E.7		Develop NMCP website to disseminate information											
E.8		Upgrade IT facilities at regional level (internet account and peripherals)											
E.9		Scale up support and networking for data generation and reporting from health facilities/provider to districts to region to national.											
E.10		Procure software for data analysis and publishing (SPSS, STATA, Publisher and coral draw etc.)											
E.11	Updating and reprinting of M&E data capturing and reporting tools (DHIMS, IDSR and malaria-specific)	Meetings to update M&E tools (DHIMS, IDSR, NMCP, Technical Consultants)											
E.12		Print updated M&E tools for 10,000 health facilities and service providers (including private faclilities)											
E.13		Support the upgrade and maintenance of DHIMS to capture data on malaria from both public and private health facilities											
E.14		Computer maintenance and software (anti-virus)											
F.0	**POPULATION BASED DATA**												
F.1	Strengthen data generation and sharing from periodic surveys	Conduct baseline Malaria Indicator Survey (MIS)											
F.2		Conduct mid-term and end -of-project Malaria Indicator Survey											
F.3		Conduct health facility surveys in coordination with other programs											
F.4		Conduct LQAS survey in selected districts											
F.5		Conduct private sector drug and net outlet surveys in collaboration with other programs											
F.6		Ensure availability of malaria indicators from population based surveys DHS (2013)											
F.7		MICS-UNICEF											
F.8		Ensure availability of malaria indicators through DSS											
F.9		Annual NMCP Surveys (monitoring performance at community level)											
G.0	**INFORMTION SHARING/DESSEMINATION**												
G.1	Programme Annual Review Meetings	Support attendance of Annual review meeting at, Regional and District levels											
G.2		Annual National Review Meetings Stakeholders and NGOs,											
G.3		Zonal level meetings for regions showing the relevance and utility of good data											

SN	Activity	Sub-Activity	Timing (Year 1)				Timing (Year 2)				Timing (Year 3,4,5)		
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Y 3	Y 4	Y 5
G.4		Regional level meetings for districts showing the relevance and utility of good data											
G.5		Publications through magazines and journals of annual report and progress of malaria programme towards the MDGs											
G.6		Advocate for MOH, Ghana Medical Council and other key stakeholders to mandate private health sector to report data											
H.0	**OTHER M&E ACTIVITIES**												
H.1	REVIEWING THE M&E PLAN	Workshop to review M&E Plan and activities											
H.2		Establish National M&E Coordination Committee											
H.3		Meeting of National M&E coordination committee											

3.6 M&E IMPLEMENTATION BUDGET 2008-2015

Key Activity	Year 0 (2008)	Year 1 (2009)	Year 2 (2010)	Year 3 (2011)	Year 4 (2012)	Year 5 (2013)	Year 6 (2014)	Year 7 (2015)	Budget (US $)	Possible Source of funds	Comments
Routine Monitoring											
Activity Reports	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	*1,040,000*	GF, GoG	
Supervision	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	*1,920,000*	PMI, GF GoG	
HMIS (DHIMS) & IDSR	Monthly/ Quarterly	Monthly/ Quarterly	Monthly/ Quarterly	Monthly/ Quarterly	Monthly/ Quarterly	Monthly/ Quarterly	Monthly/ Quarterly	Monthly/ Quarterly	*1,824,000*	GoG	
Sentinel Sites	5 sites: Monthly	5 sites: Monthly	10 sites: Monthly	10 sites: Monthly	10 sites: Monthly	10 sites: Monthly	10 sites: Monthly	10 sites: Monthly	*2,000,000*	PMI	
National Household Surveys											
National Census			X						Tdb	GoG Donors tbd	Conducted every 10 years
DHS	X					X			*1,000,000* (malaria component)	USAID/PMI UNICEF WB Others	Malaria module enhanced. Next in 2013
MICS				X				X	*600,000*	UNICEF	
MIS				X				X	*700,000*	PMI	
Periodic Reviews											
Semi-annual Reviews in the context of SWAP	2/year	2/year	2/year	2/year	2/year	X	X	X	*640,000*	MOH and partners	
Malaria Annual Reviews	X	X	X	X	X	X	X	X	*320,000*	GF GoG	
PR quarterly reports to Global Fund	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	*48,000*	GF	
Quarterly zonal planning and review meetings	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	*440,000*	GF, MOH	
Impact Evaluation			X		X		X		*618,000*	GF PMI	Timed at GF Grants, Phases I Phase II
Other M&E Activities											
Health Facility Surveys	X				X				*200,000*	PMI (2008) and TBD	
Vector Studies	X	X	X	X	X	X	X	X	*885,760*	GF PMI	
Drug Efficacy	X	X	X	X	X	X	X	X	*736,000*	GF PMI GoG	

Key Activity	Year 0 (2008)	Year 1 (2009)	Year 2 (2010)	Year 3 (2011)	Year 4 (2012)	Year 5 (2013)	Year 6 (2014)	Year 7 (2015)	Budget (US $)	Possible Source of funds	Comments
Health Facility Surveys	X				X				*200,000*	PMI (2008) and TBD	
Vector Studies	X	X	X	X	X	X	X	X	*885,760*	GF PMI	
Drug Efficacy	X	X	X	X	X	X	X	X	*736,000*	GF PMI GoG	
Drug Effectiveness (in vivo)	X		X		X		X		*304,000*	PMI	
Pharmacovigilance	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	*240,000*	GF GoG	
Commodity Supply Chain Evaluations	X		X		X		X		*600,000*	GF PMI GoG	
HMM and IPT Effectiveness Studies	X			X			X		*300,000*	GF GoG UNICEF	
Operational Researches	X	X	X	X	X	X	X	X	*2,021,760*	GF PMI Gates F.	
M&E System Strengthening											
Training (Retraining and orientations)	X	X	X	X	X	X	X	X	*352,000*	GF PMI	
Infrastructure & Logistics	X	X	X	X	X	X	X	X	*600,000*	GF PMI GoG	
TOTAL									*17,189,520*		

3.5 Coordination of M&E Processes

An interagency level of monitoring and analysis of the behavior and trends in selected performance indicators provides perspectives and insights beyond those of any single organization and serves to strengthen future planning efforts. The coordination of national malaria control M&E will therefore be done by an Interagency Monitoring Committee made of representative of key stakeholders in malaria control in the country. The Committee will be chaired by the Director of Public Health of the Ghana Health Service. The proposed membership includes the following: PPME (GHS/MOH), development partners (USAID/PMI, UNICEF, and UNFPA), WHO, the Global Fund CCM, representatives of civil society organizations (CSOs) and NGOs, selected academic and research institutions, Food and Drugs Board, representatives of the HIV/AIDS programme and Family Health Programmes, Ghana Statistical Service (GSS), representation from the private sector, and others who may be deemed relevant. The Programme Manager will be secretary of the Committee and also the convener.

The terms of reference of the Interagency Monitoring Committee will include:

collectively monitoring the implementation of the POW

assessing progress made on achieving the strategic targets

collectively proposing responses to performance gaps identified.

the committee will act in concert with the other committees and working groups, such as the Communications, Vector Control, and Case Management working groups, to address implementation problems and recommend solutions.

share M&E information with all stakeholders, including the MOH and CCM
The M&E officer of the NMCP will have the responsibility of ensuring technical data are collated from sources as described in section 2 and analyzing and disseminating such information to the interagency monitoring committee and other stakeholders.