



REPUBLIC OF ZAMBIA

MINISTRY OF HEALTH

**FRAMEWORK TO STRENGTHEN ROUTINE MONITORING OF MALARIA
ACTIVITIES UNDER THE WORLD BANK FUNDED BOOSTER PROJECT**

(First Six Months)

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This documentation was produced through a consultative process during the month of June 2006 and from follow-up discussions with relevant malaria monitoring and evaluation (M&E) partners through the Ministry of Health M&E Working Group through 2006. The initial framework was developed from a 2-day workshop (15-16 June 2006) called by the Ministry of Health with the participants listed below.

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1. Introduction

In Zambia, malaria is one of the major public health problems and is the leading cause of morbidity and mortality, especially in children under the age of five years and pregnant women. Available statistics indicate that malaria accounts for about 45% of all outpatient attendances, 50% of cases among children under-five years of age and 20% of maternal mortality (HMIS, 2004). According to estimates by the NMCC, malaria in Zambia has been accounting for nearly 4.3 million clinical cases and approximately 50,000 deaths per year. Over the past three decades, malaria reported through routine Health Management Information Systems (HMIS) in Zambia has tripled, from 121 per 1,000 population in 1976 to 383 per 1,000 in 2004 (HMIS), in part due to the spread of chloroquine resistant malaria, reduction in vector control, decrease in access to quality health care, impact of HIV/AIDS and impoverishing effects of ill health.

Reduction of malaria morbidity and mortality is one of the key Millennium Development Goals (MDGs) and one of the national public health priorities in Zambia. In response to the escalating malaria problem in Zambia, the country's Poverty Reduction Strategy Paper (PRSP) (2002-2004), which preceded the Fifth National Development Plan (NDP), identified the importance of addressing malaria as a priority area within the framework of an integrated approach to health care and as part of the Roll Back Malaria (RBM) social movement at country level. This led to the inclusion of malaria control as a Highly Indebted Poor Countries (HIPC) initiative trigger. Further, both the Fifth NDP and National Health Strategic Plan (NHSP) 2006-2010 have identified malaria among the national public health priorities. The National Malaria Strategic Plan (NMSP) 2006-2010 has outlined the specific goals and key strategies and interventions for combating malaria in the next six years, commencing 2006.

To support this strategy, the Government has put in place a series of proposals and funding to enable Zambia scale-up malaria interventions to meet specific and attainable targets and goals. These include domestic or local resources, successful proposals from the Global Fund to fight HIV/AIDS, Tuberculosis and Malaria (GFATM), the World Bank Malaria Booster Programme, the Malaria Control and Evaluation Partnership in Africa (MACEPA), and additional partner contributions. Zambia has also recently been announced to receive increase funding through the United States President's Malaria Initiative (PMI).

Critical for understanding progress made in scaling up malaria control efforts is a robust monitoring and evaluation system that captures accurate and reliable information on key performance, outcomes and impact indicators and which promotes the development of existing national sources of information. As a part of the efforts to ensure adequate and complete scale up, an enhanced, coordinated district performance monitoring plan has been requested to facilitate the monitoring of malaria control services supported under a unified plan for monitoring and evaluation.

The purpose of this document is to outline key steps toward establishing an improved district-performance monitoring plan for delivery of malaria control services. Specifically, this plan discusses improved efforts for malaria monitoring across existing routine reporting systems

with an emphasis on promoting a streamlined routine malaria monitoring system that ultimately leads to the overall strengthening of the HMIS and Zambian health information infrastructure.

2.0 Current Malaria Performance Monitoring

2.1 *Impact and Coverage of Malaria Interventions*

The national Malaria Monitoring and Evaluation Plan outlines a comprehensive malaria monitoring and evaluation system encompassing several sources of information, including HMIS, routine programmatic monitoring, sentinel surveillance, IDSR, household and facility surveys, vital registration, and special studies to understand the full spectrum of programme performance, changes in coverage of interventions and their eventual impact on malaria and malaria-related disease burden.

In Zambia, measuring the overall impact of malaria interventions is challenging due to several factors including:

- 1) presence of multiple interventions at various levels of implementation, each with their own parallel contribution to measurable impact;
- 2) limitations in available sources of information such as lack of a comprehensive registration system, patterns of health care seeking behaviour, facility attendance and incompleteness of reporting in routine facility-based information systems; and
- 3) lack of wide-scale confirmation of malaria diagnosis and reliance on symptomatic treatment of malaria disease events.

In light of these existing deficiencies, it has been recommended that overall impact of malaria and malaria-related disease burden rely on a combination of indicators including malaria incidence, under five, all-cause mortality, malaria parasite prevalence and anemia. These are best measured through comprehensive estimation methods and well-designed household surveys to understand the complete picture of malaria throughout Zambian communities. Further, by recognizing the limitations of existing routine reporting systems and working to strengthen the information collected through them, their potential contribution to discussing malaria-related impact will be strengthened.

Understanding performance of malaria control scale-up and implementation activities therefore becomes critical in measuring and achieving results and sustaining the funding necessary for malaria control. The changes in the level of implementation requires both measurement of overall coverage of malaria interventions at the population level and the routine monitoring of the implementation of activities to affected populations at district and community levels.

At the population level, Roll Back Malaria, through the Monitoring and Evaluation Reference Group (MERG), defined the core coverage indicators for malaria interventions and relevant indicators of impact to measure how changes in coverage can be attributed to program efforts. These core impact and outcome measures are specified within the National Malaria Monitoring and Evaluation Plan document and will not be presented in detail here except to note that efforts to evaluate national scale-up of malaria control interventions will promote the

recommended set of indicators and sources of information for measuring progress towards the targets and goals agreed in the current NMSP.

For measurement, the key coverage and impact indicators in malaria control efforts require adequate and sustained funding from malaria partners involved in monitoring and evaluation. The Ministry of Health through the National Malaria Control Centre require periodic assessment to ensure an objective, accurate, and reliable evidence base to ensure progress toward national targets and objectives is occurring throughout Zambian communities. This plan demands for a strong SWAp mechanism for better joint measurement of performance.

2.2 *Routine performance monitoring*

An important component to understanding progress over time and at predictive intervals in the delivery of malaria services is routine information from malaria-affected communities and districts. For malaria, various inputs, processes, and outputs are necessary to routinely monitor the extent to which malaria services are being delivered and their effectiveness given the available resources. Given increasing demands on reporting from numerous donors and stakeholder agencies, routinely monitoring services delivered to malaria-affected populations would provide more timely information that donors often require compared to less frequent assessments of, for example, household survey-based intervention coverage indicators. With multiple partners contributing to malaria control efforts in Zambia, understanding programmatic outputs also allows greater coordination of service delivery.

In Zambia, however, comprehensive district-level reporting systems are not well developed for supporting the full spectrum of disease-specific performance monitoring. The national Health Management Information System (HMIS) is the only national system for routine reporting of health events and health care service delivery and is the principle system used for monitoring both basket funding for the SWAp mechanism and for reporting on cross cutting health issues throughout Zambia. Strengthening the national HMIS is essential for supporting more demands on monitoring disease-specific implementation efforts and subsequent program performance.

In response to increasing demands for disease-specific routine performance monitoring, several additional sources of information have been developed. These include ZANARA, the Malaria Information System (MIS) and Integrated Disease Surveillance and Response (IDSR). IDSR is a system developed with a primary objective to report on epidemic prone diseases, diseases targeted for elimination, diseases of public health importance and including those that are notifiable. ZANARA and IDSR are subcomponents of the HMIS and they address the need for facility-based HIV/AIDS reports through the Global Fund and notifiable diseases. The MIS is largely driven by the NMCC to provide focused sentinel surveillance for malaria and coordinated delivery of ITNs. At the community level, CRAIDS-ZANARA developed an additional monitoring system to cater for community-based initiatives promoting awareness of HIV/AIDS and related issues.

Table 1: Overview of existing sources of information for routine malaria performance monitoring

Source	Coverage, methods	Frequency/Status
Health Management Information System (HMIS)	National routine, facility-based information system that is compiled at district level. Data generated from all public, all mission and some private health facilities.	Quarterly, SWAp Basket reporting tool; information collected by MoH and shared with partners in SWAp meetings; current system developed fully by 1998, is under revision.
ZANARA (MoH)	50 districts, facility-based, compiled districts (DIO)	Quarterly, launched 2 nd quarter 2006
Integrated Disease Surveillance and Response (IDSR)	National notifiable diseases reporting system, 72 districts	Monthly, launched 2 nd quarter 2006, being scaled-up to 72 districts throughout 2006
Performance Assessment (PA)	National through provincial and district offices	Planned quarterly, but occurs semi-annually
Patient Record System 'Smart Card' project	10 districts, but planned for national EMS where infrastructure allows	Data capture at the patient level
CRAIDS-ZANARA	50 districts, community-based, compiled at districts and provincial AIDS offices	Quarterly
Malaria Information System (MIS)	10 sentinel districts, facility-based compiled at districts	Monthly, operational, launched in 2003, updated January 2006
Intervention-specific delivery monitoring efforts (ITNs, IRS)	National, Partner reporting, compiled at NMCC	Ad hoc malaria partner reporting activity, annual malaria control report

These systems target various aspects of health care service delivery and disease surveillance and operate at various levels of implementation and coverage. Nevertheless, as part of comprehensive monitoring efforts, a system that covers all 72 districts in Zambia is necessary for understanding national scale up and programme effectiveness. The goal of each of these systems is to provide better information for monitoring performance and the overall strengthening of a national system with adequate and reliable routinely-collected information operating through a coordinated HMIS.

2.3 Efforts to strengthen national routine information systems

Although several systems are currently available which capture routinely-reported malaria information, efforts to improve the national health information system are focusing on key processes for integrating these systems. Table 2 presents a timeline of key system strengthening activities completed and anticipated for relevant national reporting systems.

During 2005, with support from the European Union, the Zambia HMIS underwent an extensive review, leading to a coordinated 3-year Plan of Action for updating and improving the type and quality of information captured through facilities, as well as the technology equipment used for capturing, storing, analyzing and communication relevant information. As

of November 2006, the Ministry of Health, through the a coordination of an appointed team of consultants, is in first year of the 3-year Plan of Action involving a comprehensive review of indicators and data elements, consolidation of health facility registries and material development for data capture and training. It is expected that the revised HMIS will not be fully operational until sometime late 2009.

As part of the overall HMIS and in order to improve the detection and management of epidemics, in 2000, the country adopted the Integrated Disease Surveillance and Response Strategy (IDSR). This strategy aims at improving capacity at district levels to detect and respond to disease/condition outbreaks, in order to reduce levels of morbidity and mortality. It is planned that through the use of a selected set of IDSR indicators, the health system will steadily improve its capacity to detect and manage disease outbreaks/epidemics. In order to achieve this objective, IDSR will emphasize development of the laboratory data sources specifically to strengthen the Notifiable diseases registers under the HMIS. Implementation of IDSR does not include development of primary data collection tools such as facility registers, but rather collects data on diseases that are notifiable by law, from the HMIS facility registers. Due to inadequacies of the HMIS in reporting on some indicators at district health level, an interim form to report on some malaria indicators has been devised through the IDSR monthly aggregated reports at district level. But this interim measure is coming to an end immediately the current HMIS revision is completed.

In the December, 2003 HMIS meeting in Kitwe, CDC and Ministry of Health through the Central Board of Health first discussed the potential benefits of adding ‘smart card’ based, portable electronic medical records to the system of care in Zambia for the primary purpose of aiding the provision of continuous care in the clinics, but with the awareness that this would, with the same effort, significantly improve the Zambian HMIS reporting on HIV/AIDS.

This effort has continued through a pilot phase coming to an end now. Scaling-up from the pilot district is currently being planned to start in 2007, providing an electronic data collection tool at facility level for supporting provision of comprehensive HIV/AIDS care at facility level. This effort compliments with the current effort to revise the HMIS at district health and facility levels.

All these systems are being programmed within the framework of the HMIS in order to ensure harmonization and sustainability.

Table 2: National Health Information System Strengthening Processes

Time	Activities
<i>Health Management Information System (HMIS)</i>	
1996	Legacy HMIS development
2005	HMIS Assessment and Plan of Action developed
2006-07	3-year Plan of Action launched – year one activities: indicators and data elements agreed, data collection tools revised, data base development, guidelines and training manual development, pilot testing
2007-08	3-year Plan of Action launched – year two activities: phased roll out with target of 36 districts, continued training, evaluation of progress
2008-09	3-year Plan of Action launched – year three fully scaled-up system in 72 districts, implementation of

	subsystems and modules, study tour end of project
<i>Integrated Disease Surveillance and Response (IDSR)</i>	
2002-04	Adoption of IDSR technical guidelines and training module development for district level implementation; development of 3-year strategic training plan
2005	Launch of cascade training for national roll out of guidelines and tools.
2006-07	Cascade training in each province, phase 2 software development and deployment with expanded data reporting for malaria at district level
<i>Patient Record System 'Smart Card'</i>	
2004	Continuity of Care project formally submitted
2005	ANC, PMTCT, and VCT modules deployed
2006	EMR system merged to form CC:PTS, deployed to 10 districts, identified as the national EMR
2007-08	Continued phased deployment and training based on national infrastructure capacity

3. Improving district-level malaria performance monitoring

This document specifies a plan of action for strengthening the existing routine reporting systems through which malaria information is collected. The attached Plan of Action focuses on a subset of indicators collected routinely from the sources identified above and addresses the need for strengthening the national, district and community-level reporting system through a harmonized reporting format using specific indicators for monitoring performance of efforts to delivery malaria control services. This plan conforms to the reporting requirements of the SWAp coordination mechanism and basket funding reporting system, the National Malaria Strategic Plan 2006-2011 and the corresponding National Malaria Monitoring and Evaluation Plan 2006-2011. Thus, it is expected that this system will be available for reporting to multiple donors and funding sources under a consolidated malaria performance monitoring system, emphasizing the principle of one reporting system for malaria.

31 Routinely reported malaria indicators

This plan will be used to strengthen data collection and reporting for the key malaria indicators collected through strategic routine information systems that exist in Zambia. These indicators have been identified through several consensus processes, principally through the development Millennium Development Goals (MDGs) indicators, the National Performance Framework (NPF) for monitoring implementation of the SWAp, and the National Malaria Strategic Plan 2006-2011 and the corresponding National Malaria Monitoring and Evaluation Plan 2006-2011, as well as specific activity driven monitoring needs. These indicators are taken as a subset of the national dashboard of malaria performance monitoring indicators (Annex 1) are designed to understand the progress made in reducing malaria and malaria-related burden, and report on the progress of delivering malaria interventions throughout Zambia.

For routine reporting on district-level performance, the recommended indicators for monitoring district performance are presented in Table 3 and Table 4.

3.2 Levels of Support: National, District, Community

At the national level, funding for this plan will be used to strengthen reporting for the two principle indicators agreed for reporting on the National Basket funding mechanism under the SWAps mechanism. These include malaria case fatality rate and intermittent preventive

treatment (IPT) of malaria during pregnancy through antenatal clinic attendance. Currently, only malaria case fatality rate is reported through the HMIS, although it includes deaths and inpatient malaria cases based on only clinical diagnosis of fever that has varying levels of completeness of reporting within the numerator and denominator separately. Through this plan, it is expected that the current definition of case fatality rate will be upgraded by reporting on laboratory confirmed malaria cases. Further, reporting of IPT delivery through antenatal clinic visits is currently only collected routinely through the Malaria Information System, and there is need to scale up the uptake of this indicator in all routine reporting of HMIS from all 72 districts. The routinely collected information of IPT will be used to support periodic collection through household survey. However, the primary source for the routine reporting of these indicators will be the IDSR during the interim period of HMIS revision.

Table 3: Key malaria indicators collected through routinely-reported information systems

Indicator	Definition	Source		Frequency	Importance level
		<i>Current</i>	<i>Planned</i>		
Malaria incidence rate	<i>Current definition:</i> Numerator: reported cases of malaria Denominator: population, expressed per 1000	Routinely reported through HMIS	Routinely reported through HMIS	quarterly	National, provincial, district, facility
	<i>Desired definition:</i> Numerator: reported cases of malaria with a confirmed diagnosis using either microscopy or RDTs Denominator: population, expressed per 1000	Routinely reported through HMIS lab facility registers, and IDSR form	Routinely reported through HMIS	Quarterly (IDSR)	National, provincial, district, facility
Malaria case fatality rate	<i>Current definition:</i> Numerator: deaths attributed to malaria from a clinical malaria diagnosis Denominator: inpatient malaria cases with clinical diagnosis Rate expressed per 1,000 district population	Routinely reported through HMIS	Routinely reported through HMIS	Quarterly (HMIS)	national, provincial, district, facility
	<i>Desired definition:</i> Numerator: Deaths attributed to inpatient malaria cases with a confirmed diagnosis using either microscopy or RDTs (by age group, especially U5s) Denominator: inpatient malaria cases with a confirmed diagnosis using either microscopy or RDTs (by age group, especially U5s) Rate expressed per 1,000 district population	Routinely reported through HMIS facility registers	Routinely reported through HMIS	Quarterly (IDSR)	national, provincial, district, facility
Malaria cases with confirmed diagnosis (%)	Numerator: number of clinical malaria cases with a positive confirmed diagnosis using either microscopy or RDTs Denominator: Total number of malaria attendance with clinical diagnosis Also called slide positivity rate (SPR)	Routinely reported through HMIS facility registers, and provision MIS form	Routinely reported through HMIS	Quarterly (IDSR)	national, provincial, district, facility
Intermittent preventive treatment (IPT) for pregnant women through ANC visits (%)	<i>Routinely reported through facilities:</i> Numerator: number of antenatal clinic attendances given 1 st , 2 nd , and 3 rd dose SP Denominator: total number of first antenatal clinic attendances Expressed as percentage for each 1 st , 2 nd , and 3 rd dose IPT received separately	Routinely reported through HMIS Safe Motherhood registers	Routinely reported through HMIS	Quarterly (IDSR)	national, provincial, district, facility

At the district level, performance monitoring is necessary across all key service delivery areas including malaria case management, prevention of malaria during pregnancy including IPT, insecticide treated nets (ITNs), and Indoor Residual Spraying (IRS). Each of these intervention areas requires a minimal indicator set for understanding performance in service delivery. These indicators are presented in Table 4. These indicators will complement and extend indicators collected at district level through the HMIS and IDSR including malaria outpatient attendance, malaria inpatient attendance and malaria deaths from clinical diagnoses. Performance monitoring of expanded IRS, it should be noted, will be conducted directly by the NMCC since IRS activities are scheduled to coincide with the malaria transmission season in 15 districts. This information will be collected from spray teams from IRS districts at the end of annual spray activities and will be reported on annually.

At the community level, routine monitoring of malaria activities of the Community Malaria Booster Response (COMBOR) for submitted and approved proposals will be supported by strengthening the existing reporting mechanism of Community Response to HIV/AIDS (CRAIDS)-Zambia National Response to AIDS (ZANARA). This system is being expanded to include malaria-based reporting and a measure of community partnership. The principle measure of community partnership development will be the number of proposals submitted for community projects under COMBOR. This information will be compiled at the Ministry of Health during the proposal approval process by quarter for each district when proposals are submitted. Additional community-level routine monitoring of ITN distribution and ITN retreatments will continue under the ITN distribution monitoring database maintained by the NMCC.

Table 4: Output indicators used for routine reporting at the district and community levels

Indicators by intervention area	Definitions	Source		Planned Frequency
		Current	Planned	
Vector control, including: Insecticide-treated nets (ITNs)				
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 for U5		NMCC activity reports	Quarterly
Number of retreatment kits sold or distributed	Includes both retreatment kits sold through subsidized net programmes in antenatal clinics and nets distributed free of charge to target populations through facility and community efforts		NMCC activity reports	Quarterly
Number of nets retreated	Total number of nets retreated in both community and facility retreatment efforts		NMCC activity reports/Child Health Week reporting	Semi-annual
Indoor Residual Spraying				
Number of houses sprayed	Total number of houses sprayed with indoor residual spraying (IRS)		NMCC routine reporting	Annual

Information, Education and Communication				
IEC materials produced	Total number of IEC materials broadcast or distributed for malaria related awareness activities (by project)	NMCC	CRAIDS-ZANARA/ NMCC	Quarterly
Community level partnership				
Number of DFT proposals submitted/approved	Total number of DFT proposals submitted and approved by district (recorded centrally by focal person at MoH)		MoH/ COMBOR	Quarterly

4. Reporting Process

The reporting framework for strengthened malaria control performance monitoring through HMIS/IDSR will take advantage of existing data flow for facility-based reporting through District Health Management Officers. The current and proposed flow of information for reporting is presented in Figure 1. To collect information from the indicators described above, the proposed ZANARA facility-based form will be revised and updated. The focal point at the district level for collecting facility-based information will continue to be the District Health Information Officers, working hand-in-hand with the District Planning Manager. Information will be submitted to NMCC M&E Unit for consolidated reporting. The consolidated information on Malaria will then be submitted to the SWAp coordination office at the Ministry of Health (MoH) headquarters for incorporation into the SWAp Basket reports.

In the interim period while forms, trainings, and roll out commence, provincial performance assessment reporting mechanism will be used to sensitize districts and to collect information from selected facilities. Further, the existing Malaria Information System will continue to collect monthly information on relevant indicators.

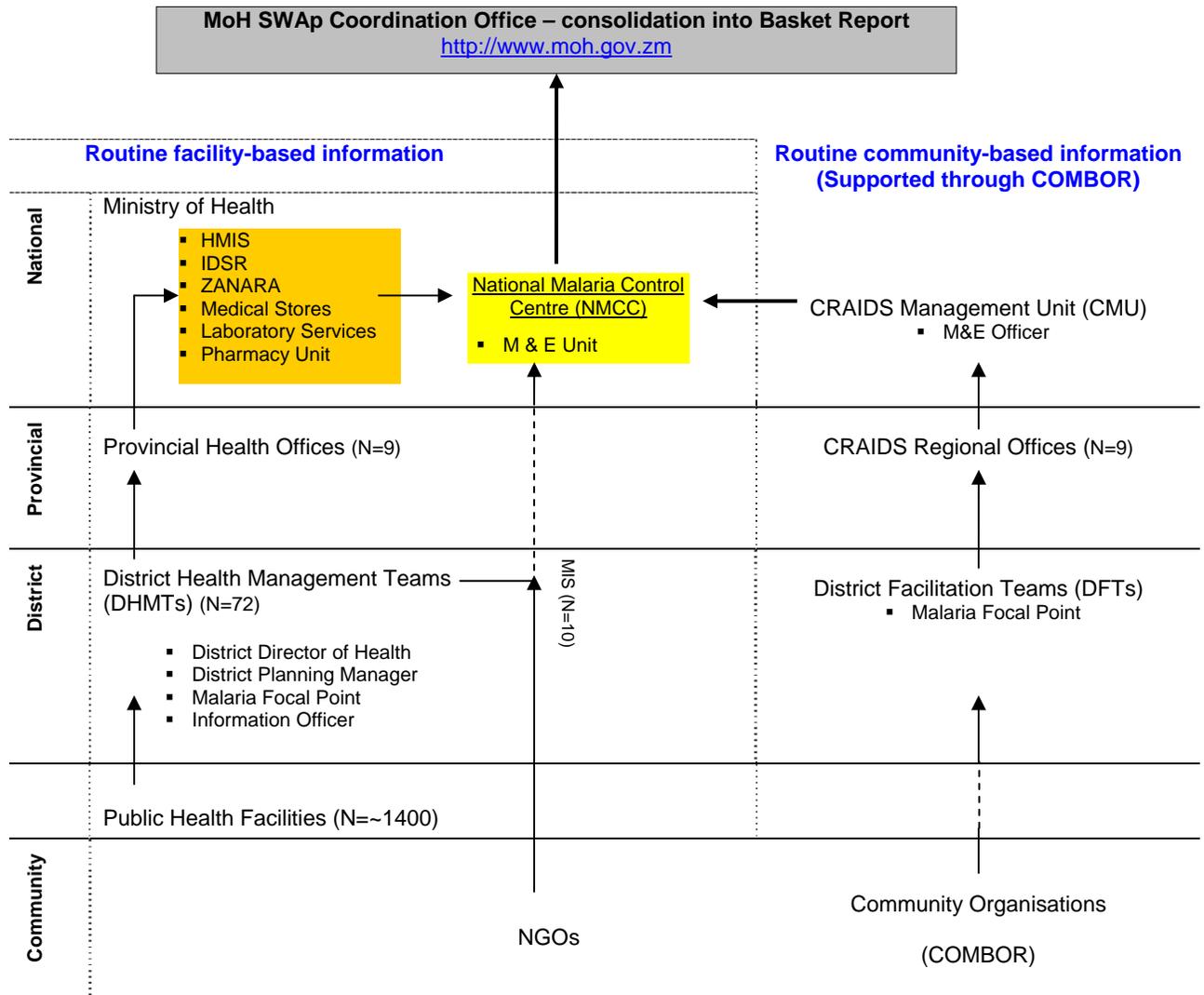
Community-based information will utilize the existing CRAIDS-ZANARA information system to which selected malaria community-based indicators will be adapted. Data will be compiled through the District Facilitation Teams (DFTs), through the malaria focal points, and flow both to District Health Information Officers through the District Planning Manager and also to expanded CRAIDS regional reporting officers and to the national CRAIDS Management Unit (CMU). Information will proceed to NMCC M&E Unit for consolidated reporting and eventually to the SWAp coordination office for verification and incorporation into the Basket reports.

Consolidated information on supplementary indicators (those indicators collected through MIS and through programmatic efforts for IRS and partner ITN distribution) will be added for verification and support.

Data will be compiled, analyzed and profiled by district detailing the level of performance, including a performance ranking by district. Updates will be provided quarterly through the SWAp coordination meetings, specifically the Policy Consultative meetings and the Health Sector Advisory Group meetings beginning in the third quarter 2006. Reports will also be posted directly to the MoH website (<http://www.moh.gov.zm>) and then the NMCC website (<http://www.nmcc.org.zm/>) after dissemination and approval by the Health Sector Advisory Group.

Further, the NMCC will produce Annual Reports on progress in malaria prevention and control beginning in 2006 that will include all the sources of information. These reports will provide information on performance of programmes in delivering malaria interventions, to include the latest estimates on coverage of interventions and trends in malaria risk, malaria morbidity and other achievements achieved. The reports will also identify gaps and needs for the coming annual planning exercises. Inputs from the Annual Report on malaria will also be part of the overall Health Sector Annual Report that is produced by the MoH

Figure 1: Overview of the reporting framework for routine malaria performance monitoring information



5. Conclusion

To strengthen the overall monitoring of the delivery of malaria interventions in Zambia, this plan addresses the need for improved district-level performance monitoring through the routine reporting of malaria-specific information. This plan fits within the overall National Malaria Monitoring and Evaluation Plan and the National Malaria Strategic Plan 2006-2010. It proposes an expansion of the current Malaria Information System, currently only available in 10 sentinel districts, through a consolidation of existing reporting systems for HMIS, IDSR and HIV (ZANARA) for routine malaria information to inform the Ministry of Health, National Malaria Control Centre, partners and donors on district-level performance throughout Zambia.

Performance monitoring is critical for improving the delivery of malaria control products and services. Monitoring requires reliable, timely and appropriate information from defined indicators and sources. We hope this plan will strengthen the ability of the Ministry of Health and relevant partners to scale-up malaria control throughout Zambia.

A total cost of K418,675,500.00 will be needed to fully implement the attached roll-out plan. MoH will be able to subsequently report fully on the identified indicators for the booster support under the Zambian health SWAp.

Appendix B: Proposed Budget for the initial activities

OBJECTIVE: *To outline proposed support from the World Bank Malaria Booster Programme for improved district-level malaria performance monitoring within the SWAp mechanisms for M&E*

ACTIVITIES	INPUT	BUDGET IN ZMK	EXPECTED OUTPUT	RESPONSIBLE OFFICERS	TIME FRAME
1. National level workshop to develop/revise/harmonize reporting tools (HMIS/IDSR)	Venue, Stationary, Transport & Communication, Accommodation, Incidentals	38,500,000	<ul style="list-style-type: none"> Review COMBOR and DHMT quarterly form Review of performance assessment tool Data flow/tools (pre-workshop) 	Assistant Director – HMIS/NMCC M&E Responsible	January 2007
2. IT infrastructure development	TA, Stationary, Transport & Communication, software/hardware	103,345,000	Link HMIS review plan and long-term development of HMIS infrastructure	Assistant Director – HMIS/ NMCC M&E Responsible	March 2007
3. Support for linking collecting, analyzing, reporting on routine information with Ministry of Health, Planning/HMIS office	Stationary, Transport & Communication, TA, Office Furniture	50,000,000	Timely reporting on malaria performance information to partners/ NMCC	Assistant Director – HMIS	January – June 2007
4. Roll out and orientation to Booster programme and associated reporting mechanism to provincial /district level with the SWAp framework	Venue, Stationary, Transportation, Accommodation, Communication, Out of Station Allowances	180,000,500	Booster programme and associated reporting mechanism rolled out to provinces/districts	Assistant Director – HMIS/ NMCC M&E Responsible	January – March 2007
5. Baseline assessment of routine malaria information at district level	Stationary, Transport & Communication, Accommodation, Incidentals	46,830,000	Baseline assessment	NMCC	October 2006 onwards (coinciding with provincial and district roll out)
Sub total		418,675,500			

Appendix A: Plan of Action

Item	Responsibility	Time	Inputs
National level process			
Performance Monitoring Plan Development			
<ul style="list-style-type: none"> Submitted to SWAp M&E Committee on Friday 1st December 2006 	NMCC	6 December	
<ul style="list-style-type: none"> Discuss at M&E meeting Wednesday 6th December (record discussion in minutes for submission to WB) 	MoH HQ, NMCC, ZANARA	7 December	
<ul style="list-style-type: none"> Submission of M&E Framework + budget for 'No Objection' to The World Bank 	MoH/PS	7 December 2006	
National-level Workshop – develop/revise/harmonize reporting tools <ul style="list-style-type: none"> Participants: ~30 (MoH (12 including 2 provinces), CHAZ (2), MoD(2), private sector (2), others (2)) Including: 	MoH, ZANARA, NMCC	15 January 2007	venue, stationary, transportation, accommodation, communication
COMBOR and DHMT quarterly form	MoH, ZANARA, NMCC	Early Feb. 2007	
Review of performance assessment tool	MoH, ZANARA, NMCC	Feb. 2007	
Data flow/tools (pre-workshop)	MoH, ZANARA, NMCC, WHO	mid February 2007	
IT infrastructure development – link with HMIS review plan and long-term development of HMIS infrastructure	MoH, NMCC	March 2007	Technical Assistance (TA), stationary, transportation, communication, software/hardware
Support for linking collecting, analyzing, reporting on routine information with Ministry of Health, Planning/HMIS office	MoH	Jan – June 2007	Stationary, transportation, communication, TA
District level process			
Roll out and orientation to Booster programme and associated reporting mechanism to provincial level	MoH, ZANARA, NMCC	Jan - March 2007	Venue, stationary, transportation, accommodation, communication, out of station allowance
Supervisory support	MoH, ZANARA, NMCC	quarterly (from 1 st quarter 07)	Stationary, transportation, accommodation, communication, out of station allowance
Roll out and orientation to Booster programme and associated reporting mechanism to district level	MoH, ZANARA, NMCC	Feb-June 2007	Venue, stationary, transportation, accommodation, communication, out of station allowance
Supervisory support (ongoing, from 1 st quarter 2007)	MoH, ZANARA, NMCC	Feb-June	Stationary, transportation, accommodation,

		2007	communication, out of station allowance
Baseline assessment (coordinated through orientation)	NMCC	January 2007	Stationary, transportation, accommodation, communication
Follow up Evaluation	MoH, ZANARA, NMCC		Stationary, transportation, accommodation, communication
<i>Community level</i>			
Activities under COMBOR coordinated by CRAIDS through ongoing activities, including template proposal development for community activities (Refer to detailed CRAIDS programme and budget)	ZANARA-CRAIDS	ongoing; beginning October 2006	

Appendix B: National Shortlist of malaria performance monitoring indicators

Indicator	Definition	Source at facility level		Frequency	Level of measurement
		Current	Planned		
Impact					
Under five, all-cause child mortality	The probability of dying before the 5 th birthday, expressed per 1000 live births	Representative, household surveys with sufficient sample size (DHS)	Representative, household surveys with sufficient sample size (DHS)	Every ~5 years	National
Malaria incidence rate	<i>Current definition:</i> Numerator: reported cases of malaria (<5 years, ≥5 years) Denominator: population, expressed per 1000	Routinely reported through HMIS	Routinely reported through HMIS at all levels	quarterly	National, provincial, district, facility
	<i>Desired definition:</i> Numerator: reported cases of malaria (<5 years, ≥5 years) with a confirmed diagnosis using either microscopy or RDTs Denominator: population, expressed per 1000	Routinely reported through HMIS/MIS Registers at facility level only	Routinely reported through HMIS at all levels	Quarterly (IDSR/HMIS=monthly)	National, provincial, district, facility
Malaria parasite prevalence	Numerator: Number of children under five years with malaria parasites, tested either through microscopy or RDTs Denominator: Total number of children under five years surveyed within malaria-endemic areas	Representative, household surveys (DHS, Malaria Indicator Survey)	Representative, household surveys (DHS, Malaria Indicator Surveys)	Biennial	National, provincial
Severe anemia prevalence among children	Numerator: Number of children aged 6-30 months with severe (hemoglobin <8) Denominator: Total number of children under five years surveyed within malaria-endemic areas	Representative, household surveys (DHS, Malaria Indicator Survey)	Representative, household surveys (DHS, Malaria Indicator Surveys)	Biennial	National, provincial
Outcomes					
Malaria case fatality rate	<i>Current definition:</i> Numerator: deaths attributed to malaria from a clinical malaria diagnosis Denominator: inpatient malaria cases with clinical diagnosis Rate expressed per 1,000 district population	Routinely reported through HMIS	Routinely reported through HMIS	Quarterly (HMIS)	national, provincial, district, facility
	<i>Desired definition:</i> Numerator: Deaths attributed to inpatient malaria cases with a confirmed diagnosis using either microscopy or RDTs (by age group, especially U5s) Denominator: inpatient malaria cases with a confirmed diagnosis using either microscopy or RDTs (by age group, especially U5s) Rate expressed per 1,000 district population	Routinely reported through HMIS facility registers	Routinely reported through HMIS at all levels	Quarterly (HMIS)	national, provincial, district, facility

Malaria cases with confirmed diagnosis (%)	Numerator: number of clinical malaria cases with a positive confirmed diagnosis using either microscopy or RDTs Denominator: Total number of malaria attendance with clinical diagnosis	Routinely reported through MIS/HMIS facility registers	Routinely reported through HMIS at all levels	Quarterly (MIS/IDSR =monthly)	national, provincial, district, facility
Health care providers correctly diagnosing and treating malaria (%)	Numerator: Number of health care providers correctly diagnosis and treating malaria according to national policy. Denominator: Total number of health care providers surveyed	Representative facility surveys	Representative facility surveys	Biennial	National, provincial
Health facilities with no stock-outs of Coartem for more than a month (%)	Numerator: Number of health facilities with no stock-outs of Coartem for more than one week (two weeks?) Denominator: Total number of health facilities	Routinely reported through HMIS facility registers and MIS,	Routinely reported through HMIS at all levels	Quarterly (HMIS)	national, provincial, district, facility
Febrile children who received antimalarial treatment according to national policy within 24 hours (%)	Numerator: 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 Denominator: Total number of children under five years with fever surveyed within malaria-endemic areas	Representative, household surveys (DHS, Malaria Indicator Survey)	Representative, household surveys (DHS, Malaria Indicator Surveys)	Biennial	National, provincial
Intermittent preventive treatment (IPT) for pregnant women through ANC visits (%)	<i>Routinely reported through facilities:</i> Numerator: number of antenatal clinic attendances given 1 st , 2 nd , and 3 rd dose SP Denominator: total number of first antenatal clinic attendances Expressed as percentage for each 1 st , 2 nd , and 3 rd dose IPT received separately	Routinely reported through HMIS facility registers	Routinely reported through HMIS	Quarterly (MIS/IDSR =monthly)	national, provincial, district, facility
	<i>Household survey sample:</i> Numerator: Number of women at risk for malaria who took an antimalarial drug to prevent malaria during their last pregnancy that led to a live birth within the last 5 years. Denominator: Total number of women surveyed at risk for malaria who delivered a live baby within the last 5 years	Representative, household surveys (DHS, Malaria Indicator Survey)	Representative, household surveys (DHS, Malaria Indicator Surveys)	Biennial	National, provincial
Households with at least one insecticide-treated mosquito net (%)	Numerator: Number of households surveyed within malaria-endemic areas with at least one mosquito net which has been treated within the last 12 months or is a Long-lasting Insecticidal Net (LLIN) Denominator: Total number of households surveyed within malaria-endemic areas	Representative, household surveys (DHS, Malaria Indicator Survey)	Representative, household surveys (DHS, Malaria Indicator Surveys)	Biennial	National, provincial
Use of ITN among children under five the previous night (%)	Numerator: Number of children under 5 years old who slept under an ITN the previous night Denominator: Total number of children under five years surveyed within malaria-endemic areas	Representative, household surveys (DHS, Malaria Indicator Survey)	Representative, household surveys (DHS, Malaria Indicator Surveys)	Biennial	National, provincial

Use of ITN among pregnant women under five the previous night (%)	Numerator: Number of pregnant women who slept under an ITN the previous night Denominator: Total number of pregnant women surveyed within malaria-endemic areas	Representative, household surveys (DHS, Malaria Indicator Survey)	Representative, household surveys (DHS, Malaria Indicator Surveys)	Biennial	National, provincial
Targeted structures sprayed for Indoor Residual Spraying (IRS) (%)	Numerator: Number of eligible structures sprayed Denominator: Number of eligible structures targeted for IRS This indicator represents operational coverage for IRS efforts at districts and national level.	NMCC reports	NMCC reports	Annual	National, 15 IRS districts
Outputs					
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	NMCC program reporting	NMCC program reporting/COMBOR	Quarterly	National, provincial, 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	NMCC program reporting/Child Health Weeks	NMCC program reporting/Child Health Weeks/COMBOR	Semi-annual	National, provincial, district level
Volumes of insecticide used for vector control	Total volume of insecticides used for vector control, including indoor residual spraying, net retreatments, and other Integrated Vector Management activities. (see WHO standard definition)	NMCC program reporting	NMCC program reporting	Annual	National
Number of eligible structures sprayed	Total number of eligible structures sprayed with indoor residual spraying (IRS)	NMCC program reporting	NMCC program reporting	Annual	National, 15 IRS districts
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	Routinely reported through HMIS	HMIS	Quarterly (IDSR)	national, provincial, district, facility
Number of malaria cases treated	Total number of treatments dispensed for treatment of malaria diagnosis.	HMIS –Pharmacy/ dispensary registers in health facilities	NMCC/HMIS	Quarterly	National, provincial, district, facility
Number of malaria microscopy slides taken	Total number of slides taken for confirmation of clinical diagnosis of malaria	Recorded in HMIS – Laboratory registers	HMIS	Quarterly	National, provincial, district, facility
Number of malaria Rapid Diagnostic Tests (RDTs) taken	Total number of RDTs taken for confirmation of clinical diagnosis of malaria	Recorded in HMIS – Lab. registers and provision MIS reporting form	HMIS	Quarterly	National, provincial, district, facility