



MINISTRY OF HEALTH: MALARIA PROGRAMME REVIEW – MAY 2011

AIDE MEMOIRE

I. Purpose

The malaria program performance review (MPR) is a periodic joint program management process for reviewing progress and performance of country programs within the national health and development agenda. Its aim is to improve performance and re-define the strategic direction and focus of the programme. This aide memoire summarizes the major findings and actions emerging from the 2011 Ethiopia MPR. It is neither a memorandum of understanding nor a legal document. It is a re-statement of the joint commitment of partners, to work together towards the implementation and follow up of recommendations towards the achievement of the vision of a malaria free Ethiopia.

II. Background

In 2010, the Government of Ethiopia through the Federal Ministry of Health and partners decided to undertake an in-depth review of the national malaria control program. This decision follows significant achievement in malaria control in terms of reduced in-patient cases, deaths, frequency of epidemics, coverage of interventions and the global drive to achieve universal malaria intervention coverage for populations-at-risk.

The objective of the review was to assess the current goals, objectives, strategies and activities with a view of strengthening the malaria control program and health systems used in delivery of malaria control services. The specific objectives of the MPR were:

- To review malaria epidemiology in Ethiopia
- To review the policies and programming framework within the context of the health system and the national development agenda
- To assess the progress towards achievement of the national and global Roll Back Malaria targets
- To review the current program service delivery systems, their performance and challenges
- To define the next steps for improvement of program performance

The review is organised in 4 phases. Phase 1 involved consultation of partners to agree on the scope of the review and develop an implementation plan; Phase 2 involved desk reviews that led to production of thematic reports on prevention and control in Ethiopia's malaria programme; Phase 3 involved a joint internal and external review with central level consultations with senior management in the Ministry of Health, Research Institutions, medicine regulatory authorities and representatives of partner agencies and stakeholders, and field visits to regions, districts, health facilities and communities to validate the findings of the desk reviews which resulted into a report and recommendations; and Phase 4 will be a follow up on the recommendations from the MPR.

The Malaria Control Programme

The Ethiopia NMCP established goals and objectives for its current and most recent strategic plans (shown below).

Malaria Programme Goals and Objectives 2011-2015

Goals:

- a) By 2015, achieve malaria elimination within specific geographical areas with historically low malaria transmission
- b) By 2015, achieve near zero malaria deaths in the remaining malarious areas of the country

Objectives: The major objectives intended to be achieved during and by the end of the planning period include:

- a) **Community Empowerment and Mobilization** 1) 100% of people living in malarious areas recognize the importance of using a LLIN, having their house sprayed, seeking treatment within 24 hours of fever onset and 2) 100% of health posts in malarious *Kebeles* provide the full health extension package including outreach services, social communication and mobilization and model family households.
- b) **Diagnosis and Case Management** 1) 100% of suspected malaria cases are diagnosed using RDTs and or microscopy within 24 hours of fever onset; 2) 100% of positive malaria diagnosis is treated according to national guidelines and 3) 100% of severe malaria cases are managed according to national guidelines.
- c) **Prevention** 1) 100% of households in malarious areas own one LLIN per sleeping space, and 2) at least 80% of people at risk of malaria use LLINs, and 3) 90% of households in IRS-targeted areas will be sprayed with IRS.
- d) **Active Surveillance and Epidemic Control** 1) to achieve a high quality, broadly based malaria infection detection, investigation and response 'Surveillance System' to further reduce malaria transmission and improve the detection and timely response to malaria epidemics.

Malaria Epidemiology in Ethiopia

The epidemiology of malaria in Ethiopia is well described in national documents – demonstrating the threat to approximately 68 percent of the population from both *Plasmodium falciparum* and *Plasmodium vivax*; the major *Anopheles arabiensis* vector and the high variability across different transmission strata. This variability is produced in part by geography and climate and in part by recent scale up of control measures. This variability requires that the country address very different situations with prevention and control tools, but it also provides the opportunity to actively create and extend malaria free areas. These opportunities and challenges are appropriately addressed in the current programme goals and objectives.

Progress

Ethiopia has achieved remarkable progress during this most recent decade. Following a substantial nation-wide epidemic in 2003/2004, the country has achieved high coverage with preventive and case management interventions and has reduced illness and death, prevented and quickly responded to outbreaks to avoid epidemics, deployed Health Extension Workers to provide community-based health preventive, promotive and curative services to reach villages, communities and households. Thus, this MPR and its recommendations that follow are offered to further strengthen the overall program in the context that Ethiopia has achieved substantial gains in the past 5 years in malaria control and needs to sustain these gains and advance to meet its goals.

III. Key Findings and Action Points

This MPR addressed three major questions:

- “Are the current Goals and Objectives in line with needs?”
- “Is the Programme aligned and empowered to achieve these Goals and Objectives?”
- “Is the Program anticipating the future needs and opportunities?”

Question 1: “Are the current Goals and Objectives in line with needs?” The answer is “yes”; the goals and objectives appear entirely appropriate for the needs and situation in the country. The goals introduce the new approach for Ethiopia of creating and expanding malaria free areas; as this is a new goal, there is a need to both move forward with the required programme work and to monitor, examine, and learn from the progress.

Question 2: “Is the Programme aligned and empowered to achieve the Goals and Objectives?” Overall, the answer is “yes”; however, the MPR identified a number of areas needing additional attention. These include overall management and, specific actions within certain interventions and systems support areas that are required for improved program performance and impact. In addition, the approach to elimination to achieve Goal 1 is further addressed. These are detailed below.

Management and Human Resources

The MPR examined both the management system and the human resource needs including organization of people and the key required skill sets. The Ethiopian government has achieved an effective people oriented health service system. This is exemplified by the nationwide Health Extension Program (HEP) which achieves a new level of access for community and households.

Management

Federal Level: At FMOH level, there is strong leadership with many organizations and directorates that hold malaria prevention and control responsibilities. Still, there are several key functions that are critical to malaria control in the country but are not currently being fully addressed. The unmet components of this work include, but may not be limited to: 1) technical oversight and guidance of the overall malaria control program; 2) coordination, communication and harmonization across the national partnership to address goals, policy, and strategy and draw on partner strengths to harmonize their activities; 3) address information oversight needs at all levels including local information for local action, and regional and national information for procurement and supply distribution, and for global reporting; and 4) coordination of funding applications to support country malaria control program needs (e.g., GF application with a comprehensive gap analysis taking into account all existing resources from all partners).

Action Points: Leadership at the Federal level should strongly consider how to complement the existing system and ensure that the unmet federal responsibilities are addressed efficiently with an accessible point with authority, responsibility, and accountability for decision making. It is possible that this could be addressed within the existing system with designation of the required authority/responsibility/accountability or that an additional small team with strong and capable leadership be responsible and accountable for technical oversight, representation, coordination and leadership across malaria control issues, including leading such efforts as resource mobilization and proposal application processes.

Region-Zone-Woreda-Kebele and Community Level There is frequent rotation of malaria focal point staff at Regional and Zonal level and this limits their ability to establish expertise, experience and leadership in malaria programme support. However, field reports found out that management at the sub-national level is well conceived and planned.

Human Resources for Federal, Region-Kebele, and community (HEP)

Ethiopia has significantly scaled up human resources for health. For example, in 2005 there were just 2,737 health extension workers in health posts and 776 health officers in health centres, rising to over 30,000 HEWs and 1,606 health officers by 2009. Over this same period, 3,000 Health Extension Programme supervisors have been recruited. It is essential that health staff training, integrated refresher training and supportive supervision (including for malaria skills) are rolled out nationally to enhance skills, quality and retention among staff.

Action Points:

- Strengthen the national or regional supportive supervision plan and provide appropriate tools including standard operating procedures;
- Develop human Resources capacity gap; need analysis; capacity strengthening and retention plan;
- Roll out the integrated refresher training as quickly as possible to ensure HEWs are updated and provide improved quality health care, on a regular basis.

Intervention delivery

Vector control – IRS, LLINs

Over the last five years, Ethiopia has demonstrated significant success in scaling up the two priority vector control interventions; indoor residual spraying and Long Lasting Insecticidal Nets. Based on approximately 17.8 million replacement nets distributed since 2008, and 3.8 million nets under procurement, it is expected that Ethiopia will soon have an operational net coverage of over 93%. The majority of these LLINs were distributed free of charge through integrated and stand-alone campaigns as part of a “catch-up” strategy. A “keep-up” strategy in pre-elimination districts will be tested to assess the effectiveness of continuously supplying nets through HEWs.

Significant progress has also been made in scaling up IRS in epidemic-prone populations, with 6.5 million households sprayed in 2009 representing 55% of the target population. Recent studies have shown resistance to DDT, pyrethroids and malathion with some resistance also detected to bendiocarb. Collection of additional information to develop a national strategy to manage insecticide resistance is underway. Use of insecticides other than DDT and pyrethroids will mean that the cost for IRS will increase dramatically, and that vector control strategies may need to be revised in this context.

Action steps

- Define the role of IRS as part of the overall malaria control effort including its role in the insecticide resistance management and epidemic preparedness plans. This work should re-examine malaria stratification in the country and examine the scope and scale of both the IRS and LLIN implementation (including spatial, temporal targeting and timing of these interventions), the capacity requirements for entomological surveillance and insecticide resistance monitoring. Finalize the vector resistance management plan by end July, 2011 to provide key guidance for the development of the round 11 GF proposal. Re-stratify malaria in the country; based on this
- Maintain $\geq 80\%$ vector control coverage in all malaria risk areas. Where operational coverage is suspected to be less than 80%, ensure $>80\%$ coverage is achieved through the rapid distribution of LLINs, or IRS. Intervention choice should be based upon an assessment of current intervention coverage and implementation capacity. Ensure optimal uptake and use of vector control interventions (see BCC section) and implementation of good quality IRS.
- Roll out and evaluate the LLIN “keep-up” strategy in pre-elimination districts to maintain universal coverage through sustained routine distribution of LLINs by health extension workers.
- Carry out operational research in pre-elimination districts to identify the most effective vector control strategies, including the added value of using IRS and LLINs in the same district, use of IRS for outbreak control or the use of one or other of the two interventions. Ensure availability of entomological evidence base for effective implementation of IRS in all target areas and strengthen the evidence base for the use of other vector control interventions particularly in pre-elimination areas.

Case management – Diagnosis and Treatment

Since 2004, Ethiopia has substantially increased public health service coverage to over 90% today through the construction of 12,400 health posts, deployment of over 30,578 HEWs and the expansion of health centres from 635 in 2005 to 1,362 in 2009.

A. Malaria diagnosis: Prior to 2005, access to malaria diagnosis reached only 30%; since then and with the introduction of RDTs, malaria diagnosis has been increased significantly in the last five years. For the first three years, mono- species RDTs were used which can only detect *P. falciparum*, this has evolved to multi-species RDTs that can detect both *P. falciparum* and *P. vivax* in 2009, increasing access to diagnosis. Of note, in national data, when malaria is reported as “clinical + confirmed cases”, it is the number one cause of morbidity and mortality; when it is reported by “confirmed cases only”, malaria is the number six cause of morbidity and mortality. By the end of 2011, we expect to achieve universal access to accurate

diagnosis with RDTs. Related guidelines on diagnosis quality assessment and quality control for both malaria microscopy and RDTs have been developed but have not been rolled out. The Ethiopian Health and Nutrition Research Institute (EHNRI) is one of the three WHO-FIND Malaria RDT lot testing centers in the world. However, it is not currently used for this purpose, either for the RDTs imported for use in Ethiopia or for other countries in the region.

Action steps

- Ensure that all suspected malaria cases are laboratory confirmed prior to treatment at all levels; this requires that there are no stock outs of RDTs and diagnostic supplies, and all health centres and hospitals have fully functional laboratories (see PSM).
- Review and strengthen the quality control and reference lab capacity including staffing, training, supervision and skill maintenance across regions, zones, district and community levels.
- EHNRI should be assessed and assisted to assume the responsibility on the testing of RDTs at least for Ethiopia.

B. Malaria treatment: The first line treatment of *Plasmodium falciparum* was changed from Sulfadoxine-Pyrimethamine (SP) to Artemether Lumefantrine (ACT) in 2004. The roll out of ACT has reached all levels of health facilities including health post close to communities. Access to malaria diagnosis and treatment services has been significantly improved with the expansion of the health extension program. The revised integrated refresher training, including Integrated Community Case Management training, for health extension workers is rolling out now. Field visits identified geographical variability with a lack of refresher training in health facilities in a number of Regions; and in some settings there was inadequate provision of guidelines and job aids, with consequent reduction in the quality of care in the management of patients. Access to prompt and adequate treatment of *P. vivax* malaria, malaria in first trimester of pregnancy, and severe malaria is limited due to fees levied for these services. The emerging predominance of *P.vivax infection* in some areas requires clear guidance for radical cure. There is need to accelerate the roll out and implementation of the new recommendations on management of severe malaria. It is also important to ensure harmonization across different guidelines.

Action steps

- Strengthen and scale up training of health workers in both the public and private sector on case management with ACT; this must include health care staff at all levels from hospitals to communities and pre-service and in-service settings;
- Assess and define the role of private sector in the management of malaria;
- Develop clear guidance for radical cure for *P. vivax* infection. This could start with mapping the prevalence of Glucose-6-Phosphate Dehydrogenase (G6PD), and systematic implementation starting in areas targeted for malaria elimination;
- Ensure free access for recommended antimalarials drugs (e.g., quinine, chloroquine and primaquine based on G6PD mapping) at all appropriate levels;
- Ensure that harmonised guidelines, job aids and other key materials are available in health facilities;
- Accelerate the roll out of rectal artesunate and parenteral artesunates for the management of severe malaria as reflected in the new treatment guidelines;
- Ensure that case management information is linked to supply quantification for better medicine supplies with no stock-outs (see PSM section).

Advocacy, Communication and Community Mobilization

Ethiopia has rolled out its advocacy, community mobilization, and communication activities for behavior change in all populations to household level, creating demand for interventions and utilization of services. This review identified a shortage of information, education, communication/behavioural change communication (IEC/BCC) materials across regions. Effective outreach through HEWs is particularly noteworthy and has contributed to increased community engagement for awareness creation and changed attitudes and practice that have enhanced impact of the interventions through strong interpersonal communication. However, HEWs need to be adequately resourced with teaching

aids/learning job aids on interventions and to receive refresher courses to be updated on new information.

Recent research findings demonstrate increased knowledge and appropriate practice with LLIN use and treatment seeking behavior (Malaria Indicator Survey 2007). However, at local levels the advocacy, communication and mobilization programs are not fully realized, particularly for malaria, and there remains a need to advance the appropriate behavior change for impact. A major challenge has been the lack of a cohesive malaria communication strategy, and inadequacy in technical assistance and lack of appropriate teaching and learning job aids.

Action steps

- Develop an evidence-based and harmonized national malaria communication strategy to provide nation-wide guidance at all levels in advocacy, communication, and community mobilization.

This work should include:

- Assemble existing evidence and generate additional priority evidence to inform the on-going malaria communication strategy development
- Strengthen and sustain the community conversation approach through HEWs and Model Households.
- Develop and/or extend the use of existing materials (e.g., including the message guide and the malaria advocacy tool kit) and implement these through proven community channels ensuring a focus on effective (evidence-based) communication.
- Produce adequate advocacy, mobilization, IEC/BCC materials and disseminate them to all regions to create awareness and positive behaviour change by communities to implement interventions sustainably.

Surveillance as an intervention (case identification & transmission containment; includes outbreak/epidemic containment)

As malaria transmission is reduced through preventive interventions and cases and deaths are markedly reduced, there is a growing opportunity to further reduce transmission toward zero – where each infection (symptomatic or asymptomatic) becomes a potential source of transmission. It is through a variety of local methods of surveillance that these infections/cases can be identified and actively investigated en route to transmission elimination and creating malaria free areas. The Kebeles and Woredas designated to develop malaria free areas must have a surveillance system that is sufficiently far reaching (in both public and private sectors) and capable of prompt identification of infection, appropriate treatment and containment of the transmission. The basis of this surveillance has its origins in epidemic detection and containment, but increasingly the focus and inciting event is the individual infection. Early epidemic detection should be included as an essential component of the enhanced surveillance system.

Action Steps:

- Develop standards for a robust local surveillance system capable of infection/case detection and response for transmission containment; this must include both public and private sector where cases present in pre-elimination areas;
- Update the outbreak detection thresholds in the context of declining malaria burden;
- Introduce training and supervision for an active surveillance system as part of the intervention strategy for establishing malaria free areas.

Systems Support

Malaria commodities Procurement and supply

Since 2005 Ethiopia has scaled up one of the largest malaria control programs in Africa, which has required the procurement and distribution of millions of LLINs, ACTs, RDTs, chloroquine, quinine and IRS insecticides. Initially, procurements were outsourced to partners, but recently the Pharmaceuticals Fund and Supply Agency (PFSA) has increasingly taken on the majority of procurement and distribution of

malaria supplies, including over 15 million replacement LLINs, RDTs and ACTs. PFSA is in the process of consolidating and strengthening its infrastructure and systems, with expansion of hubs throughout the country. However, inadequate quantification, stock outs, irrational use, and product expiry remain a problem in many malarious areas. The Logistics Management Information System (LMIS) is in the process of being reinforced and utilization of data from the new Health Management Information System (HMIS) will be used for national forecasting and quantification. To further support the logistics and supply system, district level micro-plans have been developed for some regions, with comprehensive plans developed for the Oromia Regional State. These plans provide “bottom up” malaria commodity requirements and clear distribution plans enabling the PFSA to improve accuracy and efficiency of malaria supply deliveries at all levels. Micro-plans should consider epidemic preparedness and response.

Action Steps:

- Strengthen PFSA and FMOH/RHBs collaboration to ensure harmonized planning for procurement and supply distribution; initial opportunities for this collaboration include:
 - Establish joint PFSA and FMOH collaboration to develop a fundable Health Systems Strengthening component of GFATM application for Round 11 in August 2011.
 - Strengthen the quantification of supplies using consumption data generated from Woreda level micro-planning to support malaria information flow through the newly established LMIS.
 - Improve inventory management at all levels, including such aspects as exchange of products between health facilities to optimize stock availability.

Information systems (Regular HMIS, Integrated Disease Surveillance and Response (IDSR), surveys, special studies, Operational Research, mapping, others)

Ethiopia has a variety of sources of malaria information from communities, health facilities, and population-based surveys or special studies including research. Some of the data collection processes are parallel, overlap, or leave gaps in available information. The new HMIS has been rolled out in approximately 30% of the country (as of November 2010). IDSR provides more frequent reporting, but does not extend to all malaria- endemic areas. Some Regions develop their own separate mechanism for information collection and reporting. There is a need to fully expand harmonized systems (e.g., new HMIS and its link to LMIS and local decision making) including consistency of case definitions and standard recording, communicating of the data in a timely manner, and support across the spectrum from community/Kebele to Woreda to Region. The role of all information sources, analysis and reporting capacity should be examined to ensure their complimentary contribution to information for action.

Action steps:

- Fully expand the HMIS system in the country including addressing clear case definitions, reporting on diagnosis-confirmed cases, establishing standard procedures for timely and complete reporting and timely communication;
- Assemble organizations involved in various aspects of malaria information collection, analysis and reporting to develop a clear plan for human and financial needs for the upcoming Global Fund application;
- Strengthen information feedback and supervision to local levels and provide ongoing support to use the information locally, particularly for the work in Woredas and Kebeles for malaria elimination;
- Establish direct linkage between information and actions including procurement and supply systems through LMIS (as noted in the PSM section above).
- Scientific investigation and the development of research capacity within Ethiopian universities and science institutions should be examined and priority issues identified for further support

Question 3. “Is the Program anticipating the future needs and opportunities?” Overall, the answer is “partially”. We identify here several areas to enhance this anticipation of future needs and opportunities.

Elimination

Goal #1 in the 2011-2015 National Strategic Plan highlights the intent to eliminate malaria in select geographic areas in chosen Woredas and Kebeles. Criteria for selection of initial areas have been identified, however the actual selection and the detail of the work for these areas has not advanced. In the full MPR report, the selection criteria and the activities are discussed; the MRP review suggests that this work advance soon.

Action steps:

- Prioritize the selection of Woredas and Kebeles to establish areas for malaria elimination;
- Develop a detailed scope of work and standard operating procedures for the work in these elimination areas with appropriate Regional/Zonal/Woreda/Kebele staff;
- Identify the needs and secure funding, human resources, systems for supplies and for information to ensure successful implementation of elimination in selected areas;
- Establish a regular (annual) review of progress in elimination areas; include examining potential expansion of malaria free Kebeles

Financing (sustainability)

Based on a preliminary expenditure analysis on malaria control in Ethiopia, expenditures have been increasing significantly since 2005 and the vast majority of spending is on malaria control commodities (i.e. ACTs, LLINs, and RDTs). The primary funding partners for malaria control in Ethiopia are the Global Fund, PMI and UNICEF. Future responsible funding requests require a clear justification of needs and credible budgeting to address those needs. In addition, demonstration of progress is a critical aspect and to date, Ethiopia has shown substantial impact and must continue to communicate this progress. To sustain current gains, funding is required across the spectrum of intervention commodities, social mobilization for local access and use of interventions, and support for the human resources to serve the people. It is essential that Ethiopia secures significant resources in the next six months to sustain universal coverage, otherwise, LLIN coverage, IRS, diagnosis and treatment will not be sustained beyond 2012.

Action steps:

- Develop a comprehensive gap analysis to assemble a consolidated GFATM malaria and HSS Round 11 proposal to help close funding gaps for 2013-2017. It is essential that planning for this proposal development process and collaboration with the Country Coordinating Mechanism should commence immediately to ensure that a proposal of the highest quality is developed;
- Work with key donor partners including DFID, PMI and the World Bank to fill outstanding gaps to ensure sustained malaria prevention and control in 2011 and 2012;
- Develop a sustained financing plan to secure sufficient resources for the mid- to long-term, including enhanced federal and regional funding for malaria control.

Anticipating the future interventions and delivery strategies

During the last decade, there have been substantial changes in the interventions and the delivery strategies for essentially all of malaria control. The LLINs, RDTs, antimalarial drugs, IRS, treatment approaches for severe disease, and many other approaches to malaria control are all different in 2010 compared to 2000. We can expect that a similar or even faster degree of change will occur in the coming years. In the coming decade, we can anticipate the arrival of a malaria vaccine, new diagnostics, new drugs and insecticides, and new strategies, including enhanced surveillance, to interrupt transmission. Additionally, we can expect that with improved malaria prevention and control, the malaria burden will shift to having *P. vivax* as the predominant problem as *P. falciparum* burden diminishes. To take optimal advantage of evolving and innovative interventions and strategies, Ethiopian leadership must maintain

wide and global contact with the larger malaria community, and have technical competence and mechanisms in place to review opportunities as they arise.

Action steps:

Ensure technical expertise at Federal MOH level and in science institutions to ensure that the technical advisory committee for malaria control and elimination, and the point person or team in the FMOH can promptly examine and determine appropriate roles to address evolving malaria control opportunities and challenges.

Conclusion

The Ethiopia malaria programme has achieved remarkable progress in the past five years. This is particularly true for the delivery of preventive, promotive and care services that now extend to communities and homes through a markedly expanded Health Extension Programme. This progress is evident in the high overall priority and commitment to malaria control, the evidence-based plans and strategies, the substantial increases in funding for malaria, the marked improvement in intervention coverage and use, and the substantial reductions in illness and mortality due to malaria.

Given all of the progress, the MPR still identified areas for improvement that could help the nation achieve its 2011-2015 Malaria Strategic Plan goals and objectives. The recommendations noted above include priorities and suggestions for improvement of:

- 1) Management issues of overall coordination and leadership (e.g., to assure authority, responsibility, and accountability for certain national requirements such as application for Global Fund resources);
- 2) Certain intervention Implementation aspects (e.g., addressing insecticide efficacy for vector control and assuring universal use of diagnostics to appropriately direct treatment);
- 3) Certain systems strengthening (e.g., enhanced work in procurement and supply systems and in information systems); and attention to the opportunity of establishing and growing malaria free areas in an initial set of Woredas and Kebeles.

Finally, the MPR recognizes the very strong and committed set of partners in malaria control in Ethiopia and strongly encourages them to join in addressing and resolving the issues and needs identified in this report. And, the MPR participants thank the Government of Ethiopia and partners for their support and active participation in this review.

Commitment

We, the Federal Ministry of Health and partners in Ethiopia, re-commit ourselves to the implementation of the programme review actions points and the acceleration and scaling up of malaria control interventions for universal access and sustainable impact with the ultimate goal to eliminate the disease in the country.

Signed on behalf of the Government of Ethiopia and Partners:

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In Addis Ababa, Ethiopia this day, Tuesday 31st May, 2011