Government of Swaziland

Ministry of Health

Swaziland Malaria Program Performance Review

September 2011

*Aide Memoire*
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 with the aim of improving performance and refining or redefining strategic direction and focus. This aide memoire summarizes the major findings and critical actions emerging from the MPR. The aide memoire 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 Swaziland. A detailed report of the MPR from which this aide memoire have been derived will be distributed to all partners and stakeholders, and copies will be available at the Ministry of Health’s National Malaria Control Program (NMCP).

Background

In August and September 2011, the Government of Swaziland under the auspices of the NMCP and key partners conducted a Malaria Program Review to evaluate the progress and overall performance of Swaziland’s NMCP by identifying key achievements, critical issues and obstacles to future success, and in addition, to propose solutions to improve performance and eventually achieve elimination. The decision to carry out an MPR was made in light of Swaziland’s strategic redirection toward elimination. Since 2009, Swaziland has been implementing the National Malaria Elimination Strategic Plan, which outlines the reorientation of essential programs in case management, vector control, surveillance, and health promotion towards the goal of achieving elimination by 2015. The MPR provides an assessment of the implementation of these malaria elimination interventions to guide or redefine the strategic direction in light of the disease epidemiology and health system structures.

The objective of the review was to assess the current strategies and activities with a view of strengthening the malaria control program and health systems used in delivery of malaria control and elimination services.

The specific objectives of the MPR were to:

- Review the malaria epidemiology in Swaziland;
- Review the structure, organization, and management framework for policy and program development within the health system and the national development agenda in Swaziland;
- Review the current program performance by thematic areas and by service delivery levels;
- Assess progress towards achievement of malaria elimination;
- Identify gaps in the health care system that must be improved to eventually achieve WHO certification of the malaria-free status;
- Define the next steps for improving program performance and/or redefine the strategic direction and focus including revising policies and strategic plan.

The review was organised in 4 phases. Phase 1 involved consultation of partners to agree on the need and scope of the review, development of implementation plan; Phase 2 involved desk reviews leading to the production of the thematic reports across the spectrum of activities in Swaziland’s malaria control and elimination work; Phase 3 involved central level consultations with senior management of Ministries of Health and representatives of partner agencies and stakeholders, and field visits to provinces and districts to validate the findings of the desk reviews culminating in a report and recommendations; and Phase 4 will involve follow up on the recommendations.
Key findings and action points for progress with malaria elimination in Swaziland

Elimination means halting local transmission in Swaziland despite a continued presence of malaria vector mosquitoes and importation of parasites from abroad through travel/migration.

Malaria Epidemiology

Malaria in Swaziland is very responsive to control interventions. In 1969, at the height of the malaria eradication efforts, only 10 locally acquired malaria cases were reported nationwide. Malaria reached a peak again in 1995-96 when 9700 confirmed cases and over 38000 clinical cases were reported nationwide, the highest number since 1947. At present, wide scale use of IRS in the Lowveld has reduced the reported number of laboratory confirmed malaria cases to 478 during the 2010-2011 transmission season, with 3 malaria-related deaths.

Transmission occurs mainly in the rainy season between November and May, and mainly in the semi-arid Lowveld agricultural region of the country where 240,000 Swazi nationals live (i.e., 24% of the total population), as well as the seasonal migrant workforce of the irrigated sugarcane plantations. Imported malaria, resulting from an infection that was acquired abroad, occurs nationwide throughout the year (nearly 50% of reported cases, of which nearly half were Swazi nationals). The majority (92%) of imported malaria is acquired in Mozambique, and 4% originate in South Africa. In the past, malaria epidemics have occurred following excessive rains and floods, large influxes of refugees, and cessation of control interventions when funding ceased. Malaria in Swaziland is almost exclusively due to *P. falciparum*, which can be fatal in people without immunity. *P. malariae*, which is characterized by longstanding low grade subclinical infections, has also been reported. The primary vector is considered to be *An. arabiensis*.

The identification of transmission hotspots (or “foci”: defined localities where malaria transmission takes place and people are exposed to infected mosquito bites) is still in its very early stages, and is hampered by the absence of up to date land register maps and geographical reconnaissance in rural areas. Frequent commuting between Swaziland and Mozambique further complicates the pinpointing of the exact localities where people get infected. A good understanding of malaria epidemiology in the various transmission foci and of their physical characteristics will be critical for targeting the elimination program activities in Swaziland and bordering areas of Mozambique, and for advancing towards zero transmission in a safe, cost-effective and efficient manner.

**Action points**
1. Continue investment in epidemiological expertise to inform the planning and targeting of the elimination program.
2. Use existing routine and surveillance data to update malaria risk maps and identify transmission foci.
3. Strengthen analysis of existing epidemiological data for program planning and management.

Malaria program management and policy orientation

The government financial commitment has sustained large scale program implementation over the years. The implementation of cross border collaboration through the Lubombo Spatial Development Initiative (LSDI) has been very successful and stands as a best practice in the African Region. The success of the Swaziland malaria program over the last decade has raised expectations for malaria elimination.
Malaria elimination is a top priority in the national development agenda and the national health policy. In 2008, the country adopted a strategic plan to move towards elimination of malaria by 2015. The program is in the process of reorienting its policies, structures and a strategy to achieve this objective. The program was successful in mobilization of additional resources from the Global Fund for AIDS, Tuberculosis and Malaria (GFATM) in order to strengthen the required system for program re-orientation. Elimination program development is ongoing, with dedicated malaria staff in every thematic area and additional expertise in IT and GIS. The NMCP is well managed. Technical guidelines are developed for the priority interventions. The Swaziland Malaria Elimination Advisory Group has been established and meets regularly to review the implementation of the strategic plan. There is a Health Promotion Unit within the Ministry of Health with dedicated staff for malaria activities. The existence of Rural Health Motivators (RHM) at community level is a stepping stone to strengthening community health services.

Program challenges still to be addressed include the need for an implementation plan for operationalizing the elimination strategies. Community health system strengthening is needed to achieve elimination. A nucleus of national expertise (epidemiology, entomology, malariaology) at the central level will be required to support the elimination program. The lack of regulatory legislation for the private health sector is a matter of concern as it results in the circulation of mono-therapies and other non-recommended medicines for malaria. The dependency on external financial support for malaria elimination and the end of the LSDI funding are a threat for the continuity of the elimination program, highlighting the need for efficient program implementation.

**Action points**

1. Revise the program strategy from universal coverage of interventions towards targeted interventions based on malaria surveillance and mapping.
2. Strengthen the epidemiology skills at central level to optimize surveillance activities for malaria elimination.
3. Phase in the process of absorbing GF programs into Ministry of Health including human resources.
4. Strengthen the community health systems to better involve the population in the elimination effort using existing community structures.
5. Expedite the establishment of the national Drug Regulatory Authority.
6. Continue cross-border collaboration with Mozambique and South Africa at the programmatic level.
7. Mobilize the local private sector and external financial resources while increasing the national budget for the elimination program.
8. Establish a national independent Malaria Elimination Monitoring Committee to ensure periodically audit on completeness and accuracy of records.

**Malaria case management**

In February 2010, Swaziland adopted a new malaria diagnostic and treatment policy that stipulates confirmation of all suspected malaria cases with a rapid diagnostic test (RDT) and/or microscopy prior to appropriate treatment. Artemisinin-based combination therapy (ACT) and RDT have been made available to health facilities nationwide, providing access at < 8km throughout the country. The policy is that RDT and microscopic examination of suspected malaria cases and treatment for confirmed cases are provided free of charge to the user in government health facilities.

More than 50% of health workers in the public and private health facilities treating fever cases have already been trained on the guidelines for malaria case management. To date, there has been no
report of stock outs of ACTs. A diagnosis quality assurance (QA) system has been implemented in the public sector in the Lubombo region to validate parasitological examination; the QA system is not yet functioning efficiently. There is a nationwide referral network for management of severe malaria cases.

As progress towards elimination continues, the importance of identifying every last malaria case and reducing the risk of onward transmission takes on prominence. There is a need for a drug regulatory and quality assurance mechanism for antimalarial medicines. Antimalarial drugs that are no longer recommended, including chloroquine and SP (Fansidar), are available in private pharmacies for treatment of fever cases on a presumptive basis. These presumptively treated malaria cases are not detected by the public health facilities resulting in an under-estimate of the real malaria burden, and missed opportunities for case investigation. Occasional stock-outs of RDT in the public sector also occur, compromising patient care. The current treatment policy does not yet recommend the use of radical cure with primaquine for malaria infection, with a missed opportunity to reduce onward transmission in receptive areas. A standardized protocol for audit of deaths due to malaria is needed to help to investigate avoidable contributory factors.

**Action points**
1. Accredite the central malaria reference laboratory for quality assurance of malaria microscopy and strengthen the microscopy quality control and quality assurance system for all health facilities (including private laboratories).
2. Restrict the role of PCR to operational research, including drug resistance monitoring.
3. Establish national regulatory authority to regulate antimalarial medicines coming onto the country, ensure their quality, and monitor their use.
4. Initiate an accreditation program for the private practitioners and ban treatment of malaria by non-accredited practitioners.
5. Introduce radical cure with ACT+ primaquine to reduce onward transmission.

**Vector control**

The current policy is to provide universal coverage of IRS and LLIN in at risk areas, in combination with selective larviciding. The country has a successful vector control program in place, supported by effective management systems. In 2010-11, the coverage of IRS was 93% of targeted structures, and LLIN were distributed to 74% of the households in the same area. In a KAP survey after the distribution campaign, reported use of LLIN was 34%. Seven sentinel sites for vector monitoring are established and there is insecticide resistance monitoring in collaboration with the Medical Research Council in South Africa.

As progress towards elimination continues, the identification of receptive areas and monitoring of the vector mosquito population becomes more important. There is no documented data on vector density to define the receptivity potential of the different zones of Swaziland. Vector monitoring linked to malaria case investigation to determine transmission foci is needed. Capacity to do ELISA or PCR to determine transmission intensity needs to be assessed and appropriately strengthened. The environmental risk mitigation plan for development projects such as irrigation schemes is rarely implemented. The larviciding component of the elimination strategic plan is not yet implemented. The current approach of full coverage IRS+LLIN in the Lubombo region becomes less and less cost-effective as the country moves forward with elimination and malaria risk areas become more defined. There is a need to reduce reliance on universal coverage IRS+LLIN, and instead target full coverage IRS at transmission foci and receptive areas only, keeping LLIN and larviciding as complementary measures in specific situations.
**Action points**

1. Characterize the receptivity of the different malaria risk regions using vector and temperature data, and add a vector assessment component to the malaria case investigation to determine transmission foci.
2. Build in-country capacity to do vector ELISA or PCR to periodically verify the transmission risk in different parts of the country.
3. Conduct space-time trend analysis of malaria linked to the timing of IRS in areas with high coverage and use of LLIN; conduct rigorous analysis of malaria trends.
4. Develop guidelines for a phased transition from universal IRS+LLIN to targeted IRS in foci only; phase out the current approach of full coverage IRS+LLIN in the malaria at risk areas; target IRS at transmission foci only and keep LLIN and larviciding as complementary measures in specific situations.
5. Develop standard operating procedures for independent verification of quality of IRS.
6. Engage in the development and implementation of environmental risk mitigation plans that have a bearing on malaria transmission, including the irrigation schemes.

**Advocacy, Communication and Social Mobilization**

The health promotion activities are a key component of a malaria elimination program. A Malaria Elimination Communication and Advocacy Plan have been developed and are used to guide program activities. At national level, malaria-related health promotion activities are spearheaded by NMCP health promotion coordinators. As we move towards elimination, there is a need to strengthen the existing Health Promotion Unit within the MOH and to mainstream malaria activities within the work plan of the unit. At community level, a network of Rural Health Motivators (RHM) is engaged in community mobilization and conducting health education by means of community meetings and house visits. However, it is critical to assess their role in order to maximize the use of this cadre at community level. Health education talks on malaria alongside other health issues are conducted at the health facility level. The malaria program annually conducts KAP studies to measure the effect of health promotion activities.

Health promotion messages have been delivered to the whole population. However, high risk groups and behaviors for importation and local transmission of parasites require special attention. Appropriate messages and means of delivering, guided by the relevant qualitative research, are lacking. As the burden of malaria goes down, the challenge is to sustain people’s perception of the risks of malaria and the importance of their involvement in the elimination program activities.

**Action points**

1. Reinforce the functionality and managerial system of the existing Health Promotion Unit (MOH), also in terms of staff capacity and competence, to support the country’s progress towards elimination.
2. Update and implement the comprehensive advocacy plan for the elimination phase targeting leadership structures at all levels.
3. Develop and implement a joint (Swaziland/Mozambique/South Africa) health promotion implementation framework and package in line with the malaria elimination agenda, targeting travellers, migrants and communities living across the border.
4. Strengthen partnership with community based organizations, including faith-based organizations, to embrace the malaria elimination approach and to support NMCP’s efforts towards elimination.
5. Develop innovative ways to sustain people’s perception of the risks of malaria and the importance of their involvement in the elimination programme activities.
Surveillance, monitoring and evaluation

As the country transitioned from a control to an elimination approach, the NMCP has adopted an innovative surveillance strategy and system. A surveillance manual is in place to guide the implementation of activities. The NMCP retrieves its disease reports from two sources, Health Management Information System (HMIS) and the Immediate Disease Notification System (IDNS). The web-based Malaria Surveillance Database System (MSDS), linked to GIS mapping, supports field operations. Malaria surveys have been regularly conducted in the past to measure the malaria infection rate in the population. There is a Monitoring and Evaluation Plan 2009–2014 which is aligned to the Swaziland Elimination Strategic Framework. The case investigation strategy is to conduct in-depth interviews with all confirmed cases to determine case origin and identify transmission factors. In addition, active case detection using mass RDT screening of all residents living within 1km radius of an index case is to be carried out within 7 days, to verify the malaria burden in the locality. All cases are geo-referenced which allows time-space trend analysis of cases.

As progress towards elimination continues, the precise identification of transmission areas becomes more important. There is a need for in-depth systematic analysis of time and space clustering of reported malaria cases to determine potential transmission foci. There is need for a guideline on the geographic zones and seasons in which a foci investigation following detection of an index case is mandatory. Microscopy results do not yet include information on species and gametocytes to determine the onward transmission potential of index cases. To detect secondary cases, which can appear up to several weeks after the index case (23 – 39 days), health education needs to be carried out in exposed populations, promoting early treatment seeking behavior. Depending on the situation, this can be complemented by weekly fever screening. There is inadequate feedback from the surveillance unit provided to all health facilities. Malaria cases are treated in private sector facilities that are not reporting to the HMIS and IDNS.

Action points
1. Review the surveillance manual to align with WHO elimination guidelines, and establish an active fever case detection system at community level in identified transmission foci, building as much as possible on established outreach systems, to facilitate early identification and confirmation of malaria infections.
2. Revise the surveillance indicators and the methodology of surveys in line with elimination goals, and maximize the use of information from the improved passive and active case detection to monitor progress and map transmission hotspots.
3. Establish a mechanism to capture all cases seen and treated in the private sector, to allow due case investigation for every malaria infection occurring in Swaziland.
4. Maintain a safety margin by assuming that cases occurring in the country are locally acquired, unless strong evidence points to the contrary.

Epidemic and Preparedness Response

Integrated Epidemic Preparedness and Response Guidelines were developed in September 2009, and are due to be reviewed and revised. Integrated epidemic response teams are available at national and regional level. These teams meet annually for re-training before the start of the malaria transmission season. The Integrated Disease Notification System also assists in alerting the program of an increase or presence of cases in an area or health facility. There is a Malaria Early Warning System under development to assist the NMCP in detecting epidemics early. The NMCP has a strong collaboration
with the Meteorological services that offers the possibility for eventual use of weather data for planning purposes. There is an annual budget for buffer stock in the form of diagnostics and treatment under the Global Fund Round 8 Grant.

However, the challenge is that for malaria elimination, increasingly every single case is of importance, and should be immediately notified through 977 and duly investigated. In addition, environmental conditions that promote mosquito breeding and malaria transmission should be monitored to respond with adequate vector control measures to reduce receptivity in the affected areas.

**Action points**

1. Strengthen intersectoral collaboration and coordination on data sharing between the Ministry of Health and the Ministries of Agriculture, meteorological services, Statistical Institutes, the uniformed forces and other Organizations, to allow accurate malaria risk mapping, case detection, and early prevention/control of epidemics.
2. Finalize and implement the Malaria Early Warning System.
3. Expedite the process of establishing port-of-entry health facilities to facilitate malaria prevention, early detection and treatment.

**Conclusion**

Malaria elimination is recognized as a top priority in the national development agenda by the policy makers and partners. The NMCP has made significant progress in reorienting the program towards elimination with substantial political, financial and technical support from the national and international partners. The coverage of vector control measures is excellent in the risk areas, and the implementation of case management, surveillance, epidemic preparedness and health promotion strategies is exceptional.

The MPR team makes the following strategic recommendations to achieve the objective of elimination in an effective and efficient way:

1. Mobilize the local private sector and external financial resources while increasing the national budget for the elimination program to ensure that the gains are not lost.
2. Strengthen cross-border collaboration with Mozambique and South Africa in the area of health.
3. Expedite the establishment of the National Drug Regulatory Authority
4. Strengthen the epidemiology and entomology skills at central level to optimize activities for malaria elimination.
5. Strengthen the surveillance and foci investigation system.
6. Revisethe program strategy of universal coverage of interventions towards targeted interventions based on malaria surveillance and mapping.
7. Strengthen the engagement of community based structures in the malaria elimination activities.
Commitment

We, the Government of Swaziland, Ministry of Health, and partners, commit ourselves to the implementation of the program review actions with the ultimate goal to eliminate malaria in the country.

Signed on behalf of the Government of Swaziland and Partners:

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In Mbabane, Swaziland on Monday 19th September 2011