REVOLUTIONARY GOVERNMENT OF ZANZIBAR

MINISTRY OF HEALTH

Zanzibar Malaria Program Performance Review

Strengthening health systems and community based malaria control and elimination

Towards a Malaria Free Zanzibar

Aide Memoire and Summary

September 2011
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 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 stakeholders and partners, to work together towards the implementation and follow up of recommendations towards the achievement of the vision of a malaria free Zanzibar. A detailed report of the MPR from which this aide memoire has been derived will be distributed to all partners and stakeholders, and copies will be available at the Ministry of Health, Zanzibar Malaria Control Program (ZMCP).

II. Background

In 2011, the Government of Zanzibar under the auspices of the ZMCP and key partners conducted a Malaria Program Performance Review to evaluate the progress and overall performance of ZMCP 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 Zanzibar’s strategic redirection towards a long term vision of malaria elimination. Since 2008, Zanzibar has been implementing the National Malaria Strategic Plan, which outlines the reorientation of essential programs in case management, vector control, surveillance, and health promotion towards the goal of achieving elimination. The MPR provides an assessment of the implementation of these malaria 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 Zanzibar;
- Review the structure, organization, and management framework for policy and program development within the health system and the national development agenda in Zanzibar;
- Review the current program performance by thematic areas and by service delivery levels;
- 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 Zanzibar’s malaria control work; Phase 3 involved central level consultations with senior management of Ministry of Health and representatives of partner agencies and stakeholders, and field visits to 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.
III. Goals objectives and targets of Zanzibar malaria strategic plan 2008-2012

Goal
The long term goal of the ZMCP is malaria elimination in Zanzibar.

The medium term goal of this strategic plan is to reduce morbidity and mortality due to malaria in the population of Zanzibar up to a level that it is no longer a public health threat, especially in the most vulnerable groups such as children under five, pregnant women and the poor.

Overall Objective
The overall objective for the duration of the present strategic plan is to further reduce malaria morbidity by 70% from 2006 levels (250 reported cases/1000 population) until 2012 (to 75/1000), and mortality by maintaining high coverage of effective interventions and by establishing a system of surveillance to early detect malaria resurgence and to respond.

Specific Objectives
To achieve the overall objective, the following specific objectives were identified:

1. To prevent infection with malaria by reaching and maintaining coverage of ITNs/LLINs at above 80% for pregnant women and children under 5 years, complemented by other vector control methods prompt
2. To ensure effective case management by providing prompt access for all to parasitological diagnosis (by microscopy or rapid-diagnostic tests) and artemisinin-based combination therapy (ACT)
3. To prevent and control malaria in pregnancy, by increasing and maintaining coverage with at least two doses of intermittent preventive treatment (IPT) among pregnant women attending public or private sector health services to 80% and by promoting the regular and correct use of LLINs
4. To provide effective epidemic preparedness and response, by ensuring that for > 90% of health facilities, reports are on time, investigation of reported epidemics is initiated within 24 hours and supplies are at hand to mount a response if necessary
5. To assess the potential for sustainable elimination of malaria from Zanzibar, using newly available data from surveillance and operational research, as well as experience from implementation.

These specific objectives will be supported by complementary strategies on communication, management and co-ordination, monitoring and evaluation, operational research and surveillance.

IV. Key findings and action points

The Ministry of Health and Zanzibar Malaria Control Programme have by 2010 achieved the global and Abuja targets for malaria control, including the attainment of near zero deaths due to malaria.

1. Malaria Epidemiology

In Zanzibar, malaria continues to be a priority communicable disease of public health importance. The continuing circulation of parasites in the population and presence of malaria vectors in a favorable tropical environment, both of which support a high malaria transmission potential. The total population of 1.3 million people in all ten districts is considered at risk of malaria caused primarily by *P. falciparum* and some *P. malariae*. The primary malaria vector now is *An. arabiensis*. The occurrence of *An. gambiae* s.s. and *An. funestus* is now very rare. An effective malaria control program has reduced malaria burden to the current low case load with limited annual seasonal increases. Health facility outpatient attendances and admissions due to malaria have declined sharply with near zero reported deaths.
The malaria infection level in the population has declined from greater than 10% in 2005 to less than 2% in 2010. Incidence of new malaria episodes has reduced from 16/per 1000 to 2/1000 in under five children and from 4/1000 to 2/1000 in age groups above five years. Malaria is no longer a major problem of children and pregnant women but a minor problem in all age groups and both genders. This current low malaria burden is associated with scaling up the delivery of malaria interventions since 2005 with greater than 75% coverage with Long-Lasting Insecticidal Nets (LLINs), more than 94% with IRS and screening of all fever cases for malaria with malaria RDTs and treatment with ACTs. As malaria infection and cases continue to decline, they tend to be focalized. There is therefore need to stratify malaria by the lowest administrative areas (Shehia) within districts to identify foci of transmission for targeted combination of interventions to achieve maximum impact. Malaria still remains highly unstable in nature with an annual risk of “abnormal increase” and potential for outbreaks at the end of the annual rainy season during the months of May to July and possible resurgence back to year round high transmission.

**Action points**
1. ZMCP to generate and update regularly malaria stratification maps by Shehia for targeted application of a combination of interventions for maximum impact.
2. DHMTs to conduct weekly mapping of all confirmed cases by health facility to identify malaria foci or hot spots for pro-active household screening to eliminate asymptomatic infections.
3. All confirmed malaria cases in districts with an annual incidence of less than 1 per 1000 should be notified within 24 hours and investigated and responded within 48 hours.
4. All severe cases and deaths admitted to hospitals should immediately be notified to ZMCP for investigation to prevent future deaths and sustain near zero deaths due to malaria.

2. Malaria policy and program management

The ZMCP falls under the Directorate of Preventive Services and Health Education. The Programme Manager is supported by officers who head the units responsible for the various thematic areas. The programme provides leadership, policy guidance, resource mobilization, and overall program oversight for all malaria control interventions. There is strong leadership in the programme with well-defined reporting lines across all levels. There is integration of service delivery with reproductive and child health services. There is a well prepared strategic plan and implementation guidelines for malaria activities in the country.

The ZMCP has coordinated the implementation of malaria interventions well. As more partners join the efforts to control and eliminate malaria there is need to have a formal coordination mechanism incorporating Ministry of Health, other Government sectors, stakeholders and partners with regular meetings to oversee planning, implementation and performance monitoring.

The successful mobilization of resources for malaria control by the Government of Zanzibar has been central to the success currently experienced. The annual expenditure has risen from 0.3m annually in 2000 to US $ 3.5m today with funding from Global Fund, USAID/PMI, Italian cooperation, UNICEF, WHO and other partners. However, the reliance on external funding is unsustainable if the programme shift to elimination and prevention of re-introduction. Governments direct funding for malaria representing only around 1%. There is need for the integration of malaria services and commitment from local resources to the vision of a malaria free Zanzibar to ensure sustainability.
The quantification and procurement and supply chain management for malaria commodities needs strengthening. There is good collaboration between the CMS and ZMCP in ensuring timely delivery of commodities. The logistics management information system needs to be expanded to cover the whole country and supportive supervision for commodity management at district level implemented. There is need for the official documentation of technical specifications for all malaria commodities for Zanzibar.

**Action points**

1. With the successful control of malaria, the Zanzibar Malaria Control Programme can reorient to eliminate malaria. In line with this vision, new policies and strategies will need to be developed and implemented including surveillance for all populations including travelers and mobile populations and strengthening of community based activities.

2. There is need to increase human resource capacity at district and community level to coordinate comprehensive malaria elimination activities.

3. Increased Government of Zanzibar financing for malaria control is currently feasible and desirable to ensure sustainability of a malaria free Zanzibar. Development partners funding is fraught with unpredictability and sustainability issues.

4. Strengthening ZMCP and Central Medical Stores human resource and technical capacities for quantification, documentation of technical specifications and procurement of malaria commodities.

3. Advocacy, Information, Education, Communication and Community Mobilization

Advocacy, Information, Education, Communication and Community Mobilization is an important supportive strategy in the implementation of specific malaria control interventions, e.g., malaria case management, prevention of malaria in pregnancy, and malaria prevention through vector control methods. The implementation of this strategy has realized some achievements including greater awareness, development of a malaria communication strategy, commemoration of malaria days, enhanced community participation and higher uptake of other malaria control interventions. Consequently, the use of ITNs/LLINs among pregnant women has increased from 73% in 2007 to 80% in 2010, and the percentage of under five children promptly accessing appropriate treatment for febrile illness within 24 hours has risen from 40.4% in 2007 to 70% in 2010. With a decreasing malaria burden in Zanzibar, the sustainability of this strategy is also challenged by underfunding leading to occasional activities and focus on intervention-specific communication activities.

**Action points:**

1. To update the malaria communication strategy.

2. Advocacy, communication and Social Mobilization component should be upgraded to a primary strategy within ZMCP with an increased funding base to sustain activities

3. The Ministry of Health should strengthen the implementation of Zanzibar Malaria Coordinating Committee at National level in order to support development and implementation of future malaria interventions in Zanzibar.

4. To support the progress towards malaria elimination in Zanzibar, ZMCP should focus communication activities at the community level, using the Community Health Strategy.
4. Malaria Diagnosis and Case Management

*Plasmodium falciparum* is the primary malaria parasite constituting about 74% and the remainder of 23% by *P. malariae*. The policy on malaria diagnosis recommends parasitological confirmation of malaria on all fever cases either through microscopy or Rapid Diagnostic Test Kits (RDTs). RDT implementation commenced in 2006 and by 2007 it had been scaled up nationally up to 80% of health facilities. In 2003 uncomplicated malaria treatment policy was changed from monotherapy using Chloroquine to Artemisinin based Combination Therapy (ACTs). Artesunate + Amodiquine is the first line treatment. Subsequently, the national antimalarial treatment guidelines were developed and health workers trained nationally on the new policy in all public and some private health facilities. Central Medical Stores procures and distributes ACTs to all health facilities. ACTs are provided free of charge in all public health facilities and at a subsidized cost at the private health facilities.

As malaria cases reduced, the quantities of ACTs requirements also reduced and due to seasonal upsurges and weak procurement and supplies chain management system, quantification of required ACTs stocks has not been optimal, leading to stock outs in some health facilities. There is lack of a malaria reference laboratory facility that can conduct polymerase chain reaction (PCR) which is a requirement as malaria incidence approaches near zero. The ZMCP Diagnosis Unit does not currently participate in external quality assurance scheme. There is no functioning national malaria case management technical working group or committee to advice the program on changing malaria case management issues. Despite WHO recommendation to countries to ban artemisinin monotherapies to preserve efficacy of ACTs, its importation continues. Some private health facilities do not adhere to laboratory results and dispense artemisinin monotherapies.

**Action points**

1. ZMCP to strengthen malaria case based surveillance system, institute notification and investigation to ensure that all malaria cases are parasitologically confirmed and notified within 24 hours for mapping and investigation for outbreak containment.
2. ZMCP to ensure high quality diagnosis through parasitological confirmation of all passive cases reporting to health facilities and active community and household case detection through parasitological or serological screening of all malaria foci and hot spots.
3. ZMCP to establish external quality assurance program for malaria diagnosis including setting up of a national reference laboratory for polymerase chain reaction (PCR).
4. ZMCP and Central Medical Stores to strengthen procurement and supplies chain management for malaria commodities and supplies to avoid stock-outs of ACTs.
5. MOH to ban importation of artemisinin monotherapy.
6. ZMCP should introduce and implement malaria radical treatment with primaquine; and follow up all confirmed malaria cases, to ensure that all sub clinical infections and cases are fully cured.
7. ZMCP to strengthen supportive supervision to ensure adherence of health workers to national malaria diagnosis and treatment policy and guidelines especially on malaria diagnosis.
5. Vector control

The Zanzibar Malaria Control Program implements a combination of indoor residual spraying (IRS) and long-lasting insecticide-treated nets (LLINs) for malaria vector control. The program has a strong national vector control team of highly qualified entomological professionals and network of community-based organizations that support delivery of IRS and LLINs. There is a strong vector surveillance system that is supported by a modern entomology laboratory, insectary and a network of seven sentinel sites. Zanzibar achieved the RBM targets of protecting pregnant women and children with LLINs. The country also achieved universal coverage of IRS in all 10 districts. In 2011, the IRS operational coverage was 95% protecting 96% of the country population. The 2010 MIS reported LLINs coverage of 65% for the general population and 87% for the vulnerable groups. This good coverage of IRS and LLINs resulted in the reduction of sporozoite rates from 4.3% in 2005 to 0% in 2009 and reduction of two most efficient malaria vectors to undetectable levels.

The success of the ZMCP has changed the epidemiology of malaria in the country. Malaria in the country is no longer homogeneous but focal. In this regard, implementation of blanket IRS is no longer cost-effective. The ZMCP is moving the program toward malaria elimination but the capacity in districts is weak and integrated vector control guidelines are outdated and not consistent with elimination approach. Implementation of IRS and LLINs is donor supported with little contribution from RGoZ raising the issue of sustainability of the gains in the future. Malaria in the country is stratified to district level and not to focal level. In addition, there are no updated maps on the distribution of malaria vectors and their breeding sites to guide targeted interventions including larval source management. Another key issue the ZMCP is facing is the continuation of selling and using of conventional mosquito nets in the country.

Action points
1. ZMCP should train and equip district health teams to implement targeted vector control malaria elimination activities.
2. ZMPC in collaboration with partners should develop guidelines for a phased transition from universal IRS+LLINs to focalized IRS and keep LLINs and larval source management as complementary measures in specific situations.
3. ZMCP should motivate for RGoZ resources to allow for the sustained and timely financing and delivery of IRS and LLINs to sustain gains and to move towards elimination.
4. The ZMCP should stratify malaria in districts to malaria foci using epidemiology and entomology information to guide focal IRS application.
5. The ZMCP should produce maps on the distribution of vector breeding sites to allow targeted larval source management where appropriate.
6. The ZMCP should discourage the importation, sell and use of conventional nets.

5. Epidemic-Emergency Preparedness and Response

There have not been reports of major malaria outbreaks following the declining disease burden in the last five years. However there are sharp annual seasonal increases in transmission following the rainy season during the months of May to July. Plans are in place to establish district rapid response teams. There is a weekly MEEDS surveillance system in place with coverage of 65% of health facilities. Malaria transmission hot spots are being identified followed up with targeted interventions in some districts. The Surveillance cell within ZMCP also has the responsibility for EPR but there is no EPR focal point, no epidemic preparedness plans and emergency resources and commodities. There are no well
defined case definition of epidemics and thresholds. However, abnormal increases of malaria cases are currently investigated with rapid response including community screening for fever and treatment and repeated IRS and local LLIN distribution. Due to programmatic and technical reasons, in the current epidemiological transition it was difficult to establish meaningful epidemic thresholds. The following recommendations should be considered to improve the ZMCP Epidemic-Emergency Preparedness and Response.

**Action points**
1. Malaria surveillance and response guidelines should be operationalized.
2. MEEDS should be extended rapidly to cover more than 90% of public health facilities
3. EPR focal point should be assigned within the ZMCP, supported with an EPR plan and emergency stocks.
4. Abnormal malaria increases should be defined and eventually, thresholds established for investigation and response, with cut off points (number of malaria cases) established according to malaria case loads in the respective health facilities.
5. Appropriate control strategies should be established to prevent malaria transmission in the identified seasonal hot spots.
6. Mechanisms/interventions should be established to prevent malaria resurgence (Resurgence is defined as malaria positivity rate back to greater than 5% and annual incidence of more than 10 per 1000 population with high year round transmission).

6. **Surveillance, Monitoring and Evaluation**

Zanzibar Health Management Information System (HMIS) collects data monthly on outpatients; malaria clinical and positive cases are aggregated by age groups and stratified by zone, district and health facilities. IDSf, within the Epidemiology and Disease Surveillance Program, is providing a framework for weekly reporting of notifiable disease but not yet including malaria. Malaria early epidemic detection system, (MEEDS) is supporting early detection and rapid response for malaria epidemics and is capable of monitoring changes in disease trends. This is an innovative weekly surveillance system based on mobile phone technology, that is reporting on all-cause attendance, fever cases or clinical malaria cases, those tested and positive malaria cases seen in outpatients of all primary health care facilities from the public sector and a few private health care units. There are health facility malaria case registers but this data is not used to review risk factors and follow up investigation of individual cases.

Malaria surveillance and response manual is in place. Malaria hospital sentinel surveillance provides monthly information from hospital admissions and laboratory. There is a malaria prevalence tracking sentinel system in two districts. There are 2 drug sentinel sites and 7 insecticide susceptibility testing and entomological surveillance sites. Malaria community based surveys are conducted bi-annually and malaria indicators are included in national demographic health surveys. There is an M/E plan with well-defined indicators to support the malaria strategic plan 2008-2012. Malaria confirmed cases are not used to map malaria transmission hotspots. Routine operational access and coverage data are not compiled systematically in health facility, districts and within the ZMCP.
Action Points
1. Shifting to individual malaria case based surveillance using (passive and active)(smart phones) and mobile phone system/point of sale.
2. Weekly surveillance reports should focus on review of positive cases and transmission hot spots.
3. There is need to establish a malaria profile at health facilities, districts and within ZMCP for tracking monthly and annual trends in access and coverage of interventions, disease trends and outbreaks.
4. The MoH to consider assigning a district malaria surveillance officer/focal point within the DHMT to support malaria elimination.
5. Surveillance, monitoring and evaluation (SME) working group of partners and stake holder and a functional SME unit should be established in Pemba ZMCP Office
6. The SM&E findings from routine surveillance and periodical surveys should be streamlined for improving planning and implementation at program level.
7. The routine operational monitoring and evaluation of access and coverage should be strengthened to support strategic and programmatic decisions to be based on SM&E observations.
8. A community based active malaria surveillance system should be established to conduct household pro-active case screening (febrile and non febrile) in selected Shehia (by using community surveillance workers/shehia malaria focal persons within the established shehia health custodian committees).

7. Operational Research
ZMCP has a well-established partnership with Karolinska Institute for drug efficacy monitoring and case management, and with Ifakara Health Research Institute for insecticide susceptibility testing and entomological monitoring. There are a number of other research collaboration in place such as LSTM, WHO/TDR, University of San Francisco, Ifakara Health Institute, Tanzania National Institute for Medical Research etc. ZMCP staffs have co-authored a number of publications from the research completed. Although there is good international collaboration, the ZMCP is still challenged to set its own research priorities and agenda because of its dependence on outside financial support.

Action Points
1. Establish a data base of ongoing and completed research studies.
2. Establish ZMCP research agenda with financing to drive the elimination program priorities.
3. Operational research findings should continue to be used to orient policy makers and the program on informed and evidence based activities.

V. Conclusion
Malaria elimination is recognized as a priority in the national development and health agenda by the policy makers and development partners. The technical and infrastructural capacities of the Zanzibar health system at all levels and ZMCP at national level are excellent. The ZMCP has made significant progress towards universal coverage and MDGs targets with equitable delivery of a package of interventions. This includes public information and education and community mobilization, combination of vector control interventions, rapid testing and treatment of all fever cases and malaria early epidemic detection surveillance system. This has reduced malaria towards historical low levels. This success was possible due to substantial political, financial and technical support from the national and
international partners. This investment has to be sustained to achieve elimination of all local indigenous cases and prevent re-introduction. The MPR team makes the following strategic recommendations to achieve the objective of elimination in an effective and efficient way:

1. To continue to test all fever cases and treat to cure and rapidly report for timely surveillance.
2. To shift to individual malaria case based surveillance with 24 hour notification and 48 hour rapid response and containment with line listing weekly of all malaria cases.
3. To regularly update malaria stratification maps at lowest administrative level and identify malaria foci within districts and in health facility catchment areas.
4. To revise the program strategy of universal coverage of combined vector control interventions towards targeted interventions based on malaria surveillance and mapping.
5. To develop specific strategies for malaria control in travelers and seasonal labor and other mobile populations.
6. To establish capacity in districts and at community level to conduct surveillance and target activities to identify and eliminate malaria foci.

VI. Commitment

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

Signed on behalf of the Government of Zanzibar and Partners:

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In Zanzibar, Thursday 22 September 2011