

SPS Support to the Division of Malaria Control for the Malaria Information Acquisition System

Annual Report for October 1, 2008, to September 30, 2009

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About SPS

The Strengthening Pharmaceutical Systems (SPS) Program strives to build capacity within developing countries to effectively manage all aspects of pharmaceutical systems and services. SPS focuses on improving governance in the pharmaceutical sector, strengthening pharmaceutical management systems and financing mechanisms, containing antimicrobial resistance, and enhancing access to and appropriate use of medicines.

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ACRONYMS

ACT	artemisinin-based combination therapy
ANC	antenatal clinic
AOP	Annual Operational Plan
DDSR	Division of Disease Surveillance and Response
DHMT	district health management team
DHRIO	District Health Records Information Officer
DOMC	Division of Malaria Control
DPF	district pharmaceutical facilitator
FTP	file transfer protocol
FY	fiscal year
Global Fund	Global Fund to Fight HIV/AIDS, TB and Malaria
HMIS	health management information system
HRIO	Health Records Information Officer
ICT	information and communication technology
IPT	intermittent preventive treatment
IRS	indoor residual spraying
IT	information technology
ITN	insecticide-treated net
KCB	Kenya Commercial Bank
KEMSA	Kenya Medical Supplies Agency
LLIN	long-lasting insecticidal net
LMIS	Logistics Management Information System
LMU	Logistics Monitoring Unit
M&E	monitoring and evaluation
MIAS	Malaria Information Acquisition System
MIP	malaria in pregnancy
MIS	Malaria Indicator Survey
MoH	Ministry of Health
MOPH&S	Ministry of Public Health & Sanitation
MPR	Malaria Program Review
MSH	Management Sciences for Health
MTEF	Medium Term Expenditure Framework
NMS	National Malaria Strategy
OJT	on-the-job training
PMI	President's Malaria Initiative
PMM	Pharmaceutical Management for Malaria
RDT	rapid diagnostic test
RBM	Roll Back Malaria
RPM Plus	Rational Pharmaceutical Management Plus
SPS	Strengthening Pharmaceutical Systems
TOR	terms of reference
TOT	training of trainers
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization

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The authors wish to acknowledge the support received from Dr. Elizabeth Juma, the head of the Division of Malaria Control (DOMC), in undertaking the work detailed in this report. Dr. Juma, who took over the helm at the DOMC in the last quarter of fiscal year (FY) 2007, has created an enabling environment for realization of the key objective of the Malaria Information Acquisition System (MIAS). This objective is to strengthen the monitoring and evaluation (M&E) capacity at the division to produce timely, accurate, and complete information necessary to inform program performance and progress in achievement of the National Malaria Strategy (NMS) targets. In FY 2008, Dr. Juma led the program and its partners in developing the NMS and the accompanying M&E Plan 2009–2017, both of which recognize the MIAS as a crucial tool in undertaking the program's M&E. The authors also acknowledge support from Dr. Willis Akhwale, the former head of DOMC, who continues to advocate for capacity strengthening for the entire M&E function at the DOMC.

All activities undertaken under the health management information system (HMIS)/MIAS workplan for FY 2008 were accomplished in close collaboration with Dr. Ayub Many, the previous head of the M&E unit at the DOMC, and Dr. Agneta Mbithi, the current head. During her short stint at the division, Dr. Mbithi has demonstrated tremendous commitment and determination to making the M&E function at the program a great success. The support, cooperation, and collaboration of the other DOMC unit heads (Dr. Rebecca Kiptui, Dr. Kiambo Njagi, Dr. Dorothy Memusi, Dr. Dorcas Alusala, John Moro, and James Sang) and the other technical staff at the division enabled us to work as a team, forging forward successfully. Andrew Wamari provided much needed technical support in information and communication technology (ICT) and other areas.

DOMC works in close partnership with various other organizations, notably other U.S. Agency for International Development (USAID)/President's Malaria Initiative (PMI) partners, World Health Organization (WHO), United Nation's Children's Fund (UNICEF), Population Services International, Kenya Medical Research Institute–Wellcome Trust Research Programme, Kenya NGO Alliance Against Malaria, other Ministry of Health (MoH) divisions. The Strengthening Pharmaceutical Systems (SPS) team enjoyed working with these partners in various capacities and forums, especially in the Malaria Program Review (MPR) process, to develop the NMS and M&E Plan 2009 and in technical working groups and subgroup committees to achieve the common goal of steering DOMC to greater heights in all its spheres of operation.

We are grateful to Dr. Michael Thuo and Dr. Mary Wangai for their leadership and guidance throughout FY 2008. We recognize the support from our malaria portfolio colleagues at Management Sciences for Health (MSH), Athuman Chiguzo and Dr. Alex Muturi, and support from other MSH staff in various technical, administrative, and financial areas. We acknowledge Dr. Kaendi Munguti and Dr. Gladys Tetteh of USAID/PMI for overall support and guidance in undertaking all activities in the MSH/PMI malaria workplan.

EXECUTIVE SUMMARY

Background

DOMC requested technical support from USAID to design and implement an information system to assist in M&E and to provide the priority information needed for malaria control in Kenya. The overall objective of the technical support was to set up an MIAS that uses information technology (IT) as a vehicle to provide accurate, reliable, and timely information on progress in controlling malaria. This information was in turn used to inform interventions at the district, national, regional, and global levels in line with the WHO recommended Roll Back Malaria (RBM) M&E framework.

Following an assessment of the existing systems, staff capacity, and ICT needs of the division, recommendations were made for the successful implementation of the MIAS. Subsequently, an MIAS workplan was developed, covering the period from August 2006 to September 2007, and an MIAS consultant was hired and stationed at the DOMC to accomplish the outputs and activities contained in the MIAS workplan.

The 2006 MIAS workplan was built on two broad objectives—

1. To build the MIAS
2. To use the MIAS

The key achievements in FY 2006 were—

- The MIAS workplan was endorsed by the DOMC, and the funding and implementation schedule were agreed upon. An interim system, which was capable of carrying out the functionalities of the main MIAS to a limited extent, was put in place at the division.
- Capacity building for the DOMC staff in Microsoft Office applications was completed. The IT infrastructure at the DOMC was enhanced with the purchase of computers and an upgrade of the internet connectivity.
- A MIAS implementation workgroup was formed within the DOMC to spearhead the development of the MIAS and all the other related activities.
- Development support of the malaria business plan for FY2007/2008 was provided.
- A new, more informative and interactive malaria website was developed (www.nmcp.or.ke).
- A database of malaria organizations was developed, and data on the various organizations undertaking malaria related activities in Kenya has been collected.
- New, harmonized health registers were developed in collaboration with HMIS and other stakeholders.

In FY 2007, SPS/Kenya continued to support the development of the MIAS and other aspects of strengthening M&E capacity at the DOMC. The following is a summary of the key achievements in FY 2007—

- A professional ICT firm with skills and experience in systems development was engaged to partner with DOMC and the MSH technical consultant in the development and implementation of the main MIAS.
- The core MIAS was developed and installed at DOMC. This system incorporates the following modules: Planning and Budgeting; Performance and Expenditure Monitoring; Training Data Tracking; Meetings and Mission Data Tracking; and Survey Results Tracking.
- The high-end server and software required to run the core MIAS was acquired. The division received support to acquire other ICT equipment, including an LCD projector and laptops.
- A total of 26 DOMC staff members were trained on the use and administration of the core MIAS.
- Linkages have been established with external malaria data sources (HMIS, Division of Disease Surveillance and Response [DDSR], and Logistics Management Information System [LMIS]) and agreements have been reached on the best formats for sharing routine malaria data with the DOMC.
- The 2007/2008 malaria business plan, which ran from July 2007 to June 2008, was developed and the completed version was loaded into the core MIAS.
- A high-profile launch of the new malaria website (www.nmcp.or.ke) and the site subsequently used to share relevant and current information on the DOMC malaria control activities and achievements with the DOMC partners and the general public was conducted. Key DOMC staff members were trained on website maintenance and content updating for the new malaria website.
- Agreement was reached on the detailed terms of reference (TOR) to be followed in the development and rollout of a district electronic tool. This tool is used to collect relevant malaria-related non-routine data from the districts to feed the core system, and the pilot testing was done in four districts.

The SPS/PMI workplan for FY 2008 incorporated an activity to support HMIS at the DOMC. Under this activity, further progress in support of MIAS development and implementation was made. The following list highlights the key output areas defined under this workplan activity and includes a summary of the achievements obtained during the year.

Output 1: To support the efficient use of the core MIAS at the DOMC

The core MIAS was updated in response to feedback received from the DOMC after training. Routine technical assistance for the DOMC and support for system maintenance issues were provided throughout FY 2008. DOMC users were given a two-day refresher training on the MIAS after implementation of the proposed system updates.

Output 2: To strengthen linkages with external data sources—especially HMIS

Linkages with the key sources of routine malaria data, namely HMIS, DDSR, and Logistics Monitoring Unit (LMU)/LMIS were strengthened during FY 2008. HMIS continued providing updated malaria data on a monthly basis via its file transfer protocol (FTP) website. Discussions are under way for HMIS to include some missing malaria indicators in its summary reports. DDSR continued to provide weekly data on reported malaria cases for comparison with the district-set malaria thresholds. Implementation of LMIS for tracking malaria medicines was completed during the third quarter of FY 2008. The process of defining formats for the summary data to be regularly loaded in MIAS is ongoing.

Output 3: Support analysis and use of malaria data housed in MIAS

The establishment of the MIAS database has provided the DOMC with a central data repository for malaria data acquired from various sources. To reap maximum benefit from this repository, it is important that data analysis is conducted and reports are presented in a format that can enable the program to make evidence-based strategic decisions. Analysis of MIAS data was done during the year to enable reporting to the ministry on proportional reduction in malaria cases on a quarterly basis. Evaluation of HMIS data in MIAS was conducted to report on prenatal care attendance in comparison with intermittent preventive treatment (IPT) updates for targeted districts. The results of this second analysis were used during the national evaluation of the implementation of the malaria in pregnancy (MIP) intervention, which subsequently influenced the MIP strategy to be employed under the new NMS 2009–2017.

Output 4: Rollout the district electronic tool in four pilot districts

The key achievements under this output were—

- The four pilot districts were selected based on some clear criteria explained later in this report
- An assessment visit was made to each of the pilot districts to establish their ICT capacities and identify the office and staff to be involved in the district tool rollout
- The central MIAS server was configured to allow remote access to the MIAS application from the districts
- The ICT equipment required for the four districts was procured and configured
- Development of the tool, including testing, was completed
- The pilot-district targeted staff attended a two-day MIAS training
- The MIAS district tool was set up in the four pilot districts
- Phase II of the MIAS project was completed and all deliverables were received from the ICT development partners

Output 5: Arrange for a MIAS stakeholders' review meeting

Several presentations and demonstrations of the MIAS were made to stakeholders from the DOMC and MSH at different stages of the project development and implementation. The MIAS was presented to the malaria program partners and other stakeholders during the malaria program review process that took place between January and June 2009. The great potential availed by the MIAS to the division was evident to all; nevertheless, the MSH consultant has made recommendations on how the usefulness and effectiveness of MIAS to the malaria program can continue to be enhanced.

Output 6: Undertake other M&E support activities for the malaria program

The key activities accomplished/supported under this output were—

- Development and consolidation of the 2008/2009 malaria business plan and subsequent loading of the plan into the MIAS
- Participation in estimating the cost of activities and tasks in the new NMS 2009–2017; the 2009/2010 annual malaria business plan will be derived from these estimates
- Participation in the divisional meetings, focal persons meetings, and M&E planning and progress review meetings
- Participation in the malaria program review process
- Spearheading development of the national malaria M&E plan 2009–2017
- Support to other malaria M&E related activities, e.g., training-of-trainers training on the case management M&E module

INTRODUCTION

The DOMC of the MoH in Kenya has been responsible for monitoring the success of the NMS 2001–2010 and will continue its responsibilities under the new NMS 2009–2017. Monitoring includes ensuring that the resources invested in malaria prevention and treatment are used in the most cost-efficient, effective, and equitable way. Evaluation includes the assessment of the progress toward achieving the targets of the strategy.

In FY 2005, the DOMC requested technical support from USAID to design and implement an information system that would assist in monitoring and evaluation and provide priority information needed for malaria control in Kenya. USAID-funded technical assistance was initially provided through MSH’s Rational Pharmaceutical Management (RPM) Plus Program and is currently provided through the SPS Program.

The overall objective of the technical support is—

“... to set up a Malaria Information Acquisition System (MIAS) that will use Information Technology (IT) as a vehicle to provide accurate, reliable and timely information on progress in controlling malaria that can inform interventions at the district, national, regional and global levels in line with the WHO recommended RBM M&E framework.”

Under this technical support, a consultant was hired to assess the existing systems and capacity and information needs, and to produce recommendations for the implementation of the MIAS. The key recommendation following the need to put structures in place to enable the development, implementation, and use of MIAS was to provide technical support in developing the system, capacity strengthening for DOMC staff in ICT and M&E, and capacity strengthening of the ICT infrastructure at the division.

An FY 2006 workplan of MIAS activities was subsequently developed, and, with increased funding from the USAID Kenya Mission, the Rational Pharmaceutical Management (RPM) Plus program provided technical support to the DOMC for activity implementation. MIAS activities continued to be supported in FY 2007 and FY 2008. A copy of the FY 2008 workplan is in annex 1.

Key Priority Areas for MIAS in FY 2008

In FY 2008, the SPS Program with funding from the USAID Kenya Mission continued to build on achievements obtained in FY 2006 and FY 2007 to provide technical assistance to the DOMC for MIAS and related activities.

The broad objectives under the MIAS workplan have remained—

- To build the MIAS
- To use the MIAS
- Strengthen capacity for M&E at the DOMC

The key output areas targeted in FY 2008 under the MIAS workplan were—

- Output 1: To support the efficient use of the core MIAS at the DOMC
- Output 2: To strengthen linkages with external data sources, especially HMIS
- Output 3: Support analysis and use of malaria data housed in MIAS
- Output 4: Roll out the district electronic tool in four pilot districts
- Output 5: Arrange for a MIAS stakeholders' review meeting
- Output 6: Undertake other M&E support activities for the malaria program

This report provides an account of the progress made in implementing the DOMC MIAS workplan for FY 2008. It highlights the identified challenges and lessons learned. The SPS Program, with continued funding from USAID Kenya Mission, will continue to provide technical assistance to the DOMC for strengthening M&E for the malaria program under a FY 2009 workplan.

OUTPUT 1: TO SUPPORT THE EFFICIENT USE OF THE CORE MIAS AT THE DOMC

Development and implementation of the MIAS was conducted in two phases. Phase I represents development, implementation, and training on the Core MIAS installed at the DOMC offices. Phase II represents development, implementation, and training on the district electronic tool and pilot testing the tool in four districts. GFL Partners was the ICT development partner firm that was selected to undertake the development of both phase I and phase II.

The core MIAS was developed in FY 2007 and includes the following system modules and functionalities—

- Planning and budgeting module: the annual DOMC business plan, Medium Term Expenditure Framework (MTEF) plan, and Annual Operational Plan (AOP) serve as the basis for this module of the core MIAS
- Performance and expenditure monitoring module
- Tracking survey results and survey gaps module
- Tracking training information module
- Tracking technical meetings and field trips/missions modules
- Hosting various categories of reference data

As stipulated in the TORs for implementation of MIAS phase I, the following tasks were also undertaken—

- Loading data from the existing stand-alone systems and consolidating this data in the main MIAS
- Loading data from Excel format of the 2007/2008 business plan, MTEF plan, and the AOP III report
- Loading the malaria organizations reference data, which was in Excel format, into the core MIAS
- Generating new reporting formats as requested by the DOMC during the implementation phase

The deliverables obtained from the ICT development partners on completion of phase 1 were—

- System installation guide
- Training manual
- User manual
- MIAS Ver. 1.0 CD-ROM
- Use cases file
- Final report on core MIAS

In FY 2008, the following activities were undertaken to ensure efficient use of the core MIAS—

Activity 1–Technical support/on-the-job training (OJT) in liaison with the system developers

- The core MIAS was updated in response to the feedback and comments received from the DOMC during the training sessions held in September 2008 on use and administration of the system. Thereafter, the MIAS consultant coordinated the installations of the updated MIAS by the ICT development partners, which was accomplished in October 2008.
- Various MIAS progress review meetings were held in the first quarter of FY 2008 to review performance of the updates that had been implemented on the core MIAS. These updates included the creation of a malaria partners' database in the system, addition of line items that have to be input for each activity, and an enhanced budgeting module. Because some of the updates caused a major change on the system functionality, the team agreed that the priority way forward was to organize for an update and refresher training for the DOMC staff to enhance efficient system use.
- A meeting was held with the system development partner and DOMC M&E team on November 10, 2008 to chart the way forward in ensuring optimal use of the completed core MIAS and to plan in detail the implementation of phase II of the project. A summary of the specific issues discussed is as follows—
 - Need to do a presentation of the current status of MIAS development to the new head of DOMC, Dr. Juma
 - Way forward in ensuring completion of the 2008/2009 business plan, which needs to be uploaded in the core MIAS
 - How to acquire the final data formats for loading external malaria data into MIAS
 - Need to get updated district codes that include even the newly created districts
 - Procedure for testing the technology to be used in district connectivity

Activity 2–Routine MIAS support and system administration

- A review of the system administration issues that would be required on the completed MIAS was undertaken in October 2008 in a meeting with the DOMC M&E team and the system development partners. Issues discussed included how to ensure that the system is up and running at all times, troubleshooting in case of database or application malfunction, and backing up and restoring data when necessary.
- Though the program M&E team was trained on system administration, there was still need for the MIAS consultant to continue technical support for the system administration and maintenance, and for OJT to continue monitoring correct use of MIAS. Technical support in escalation of any major issues to the development partners was undertaken and facilitation of loading external malaria data.
- During the second quarter of FY 2008, the MIAS server went down with a crashed hard drive, and the MIAS consultant escalated this to the hardware supplier and coordinated the replacement. A new hard drive was installed and technical support was provided in web server configuration, reinstallation of SQL Server database, and recovery of the MIAS database from the backups.

Activity 3—Further capacity building for DOMC in MIAS and M&E

The initial training for the DOMC staff in use of MIAS was conducted in September 2008. The core MIAS was subsequently updated and enhanced to include the trained staff member's comments and suggestions for improvement. At the same time, by the second quarter of FY 2008, the system had been expanded to include the district tool component geared toward easing reporting from the districts. Various categories of malaria data, e.g., from HMIS and DDSR, had also been loaded.

Following these new developments, the implementation team identified the need to organize a two-day hands-on refresher and update training for all DOMC staff. The MIAS consultant coordinated and participated in the facilitation of two sessions of MIAS update and refresher training in April 2009. Twenty-two DOMC staff were trained. The full training report emanating from this activity is in annex 2.

Activity 4—Facilitate annual maintenance of MIAS by the developers

In the FY 2007 annual MIAS report, it was recommended that USAID, through MSH, should support the signing of an annual maintenance contract between the ICT development firm and the DOMC. Putting in place a system maintenance plan will ensure that any bugs and other system support issues are attended to promptly, enabling the now completed core MIAS to be used to its full capacity. The DOMC will then be in a position to reap maximum benefits in improvement of its reporting structures and repository of relevant malaria data.

In FY 2008, GFL Partners continued supporting maintenance of the Core MIAS while undertaking work on phase II of the project. The phase II work is now complete. The need to sign an annual maintenance contract has now become even more urgent.

Challenges and Lessons Learned

The challenge remained for the DOMC staff to find adequate time to make full use of the MIAS in activity reporting and data analysis. This is because of the numerous field activities that the staff were involved in. The MPR process and the subsequent development of the new NMS and M&E plan 2009–2017 also consumed a lot of staff time during the last three quarters of the year. However, now that these strategy documents are complete, they have added the impetus for improved use of the MIAS.

OUTPUT 2: TO STRENGTHEN LINKAGES WITH EXTERNAL DATA SOURCES, ESPECIALLY HMIS

The fact that practically all the routine malaria data is collected by sources that are external to the DOMC makes it very important that linkages with these data sources are maintained and even strengthened. It is important to have a summary of all this data input into the MIAS on a regular basis so that it can be analyzed per DOMC requirements and the required outputs generated without having to frantically source for the data when the need arises.

Activity 1–Linkages and routine malaria data flow from HMIS

- Since FY 2007, data on some of the routine malaria indicators collected by HMIS has been availed to the division via the HMIS FTP website. During the first and second quarters of FY 2008, several meetings were held with HMIS technical personnel to review the routine malaria datasets that are yet to be availed to the DOMC from HMIS despite the fact that they are collected using the HMIS registers at all government-linked health facilities. During these meetings, HMIS highlighted the improved efficiency of FTP systems and improved reporting rates nationwide. The issue of data quality was also discussed, and HMIS informed the meeting’s participants that this issue would be addressed primarily through support supervision.
- The HMIS technical person responsible for the FTP system consented to our request that all the summary malaria outpatient data collected by HMIS be made available to the DOMC consolidated at district level only to enable useful analysis of the data within MIAS. Previously, this data was consolidated at the provincial level.
- The HMIS service delivery summary data collected on the MoH 105 form reports on various key malaria indicators, such as inpatient malaria cases. This data is aggregated at the provincial level, a situation that is not optimal considering the output that MIAS is expected to generate. Discussions are ongoing about the possibility of providing this data aggregated only up to the district level.
- Discussions are ongoing with HMIS about some malaria indicators that are still missing from the HMIS FTP summaries available to the DOMC. This includes data on malaria admissions and deaths segregated into under five years old and over five years old groups, number of pregnant women who received IPT1, number of pregnant women admitted and deaths due to malaria, and attendance at antenatal clinics (ANCs) and Child Welfare Clinics.

Activity 2—Work with LMU/LMIS to finalize reporting formats for artemisinin-based combination therapy (ACT) data

The purpose of the malaria component of the LMIS housed at LMU/Kenya Medical Supplies Agency (KEMSA) is to track consumption-related information for antimalarials. Implementation and training on the LMIS for malaria was completed in June 2009, and only since then has the system been collecting antimalarial medicine availability and consumption information. The MIAS is intended to capture only key summary LMIS data to ensure the division has the strategic information it requires when it has to make decisions on antimalarial consumption, stock-outs, and reporting rates.

Initial data formats for loading LMIS data into MIAS were designed in the first quarter of FY 2008; however, these will need to be updated once summary LMIS data required by the division is determined and the reporting formats prepared—a process that is currently ongoing.

The following activities were undertaken by the MIAS consultant as part of support to the implementation of activity 5 of the FY 2008 SPS/PMI malaria workplan (i.e., provide technical assistance for supply chain management), but also in anticipation of obtaining summary LMIS data for loading into the MIAS. All were done in liaison with the MSH LMIS system manager stationed at LMU in KEMSA and the MSH lead for Activity 5.

- In the first quarter of FY 2008, the team supported finalization of the first version of the completed and pretested ACT aggregation and summary tools in preparation for their printing.
- Reviewed and updated the LMIS electronic tool (both the Excel aggregation workbook and the summary report) for data collection and reporting on antimalarial medicines. This was in preparation for the training-of-trainers (TOT) training of district pharmaceutical facilitators (DPFs) on use of these tools.
- Subsequent to the training and in response to feedback received from the field, the team updated the LMIS electronic aggregation tool to address some of the errors reported. The updated version will be distributed in time for LMIS district reports that will be done in January 2010.
- Participated in various medicine management subcommittee meetings to discuss, among other issues, performance to date of the LMIS for reporting on malaria medicines and how to improve the LMIS reporting rates for malaria medicines.
- Trained the newly recruited malaria data clerks on all the LMIS manual and electronic tools for reporting on antimalarial medicines

Activity 3—Review the outputs generated by MIAS from the DDSR data

The key role of the malaria surveillance data obtained from DDSR is to provide, on a weekly basis, a report on the number of malaria cases recorded in all epidemic-prone districts. These districts have already charted some malaria threshold graphs covering the 12 calendar months. The weekly data collected by DDSR is compared with the threshold data, and an

alert is raised in cases where the number of reported cases exceeds the alert levels indicated on the district threshold graphs.

DDSR has been providing this disease surveillance data on a regular basis in the form of a weekly bulletin. The data is extracted from these bulletins and loaded into the MIAS for comparison with existing threshold values.

In FY 2008, the following activities were conducted in an effort to improve usability of the DDSR data that is loaded in the MIAS.

- Analysis of the DDSR data previously provided to us in an Access database to determine what malaria indicators data can be derived from it. At the same time the data contained in the weekly epidemiological bulletin that is published by DDSR was reviewed. It was concluded that the data in the bulletin will be more suitable for loading into MIAS to generate DOMC's required output because the data in the Access database was presented in a flat file format (only one data table) and was extremely difficult to interpret.
- Sourced for the new list of epidemic-prone districts to be used during input of DDSR data into the MIAS. After discussions with the DOMC focal person for epidemic preparedness and response, it was agreed upon that the output of this data will be a plot of the actual number of malaria cases per month versus the epidemic threshold values that are already determined for each of the districts.
- Sourcing for additional historical data from DDSR for loading into the MIAS. This data is being extracted from the DDSR weekly reports ranging from July 2008 to January 2009.
- Participated at an epidemic preparedness meeting held at the DOMC on July 28, 2009. During this meeting, a critical review of the DDSR data from districts reporting a sharp increase in malaria cases was made and recommendations on the way forward in first confirming the accuracy of the data presented were derived. The conclusion was that this situation will keep arising as long as there is no laboratory data to compare against the number of clinical cases reported.

Challenges and Lessons Learned

No major challenge was encountered in implementing activities under this output area. There is, however, still a need to continue working closely with all sources of routine malaria data to address issues on the nonoptimal reporting rates and how the overall data quality can be improved.

OUTPUT 3: SUPPORT ANALYSIS AND USE OF MALARIA DATA HOUSED IN MIAS

The establishment of the MIAS database has provided the DOMC with a central data repository for malaria-data acquired from various sources. To reap maximum benefit from this repository, it is important that data analysis be done and reports presented in a format that can enable the program to make evidence-based strategic decisions. The following activities were supported during the year in an effort to increase strategic use of the MIAS data.

Activity 1–Support creation of ad-hoc reports and analysis for use by various stakeholders

- The Ministry of Public Health & Sanitation’s (MOPH&S) annual performance contract includes targets for achievements of the malaria program and the other divisions of the ministry. Specifically, the indicator being reported by the malaria program during FY 2008 was the reduction of outpatient confirmed malaria cases in health facilities.
- During the evaluation of the MIP intervention implementation undertaken countrywide by the malaria program in quarter four of FY 2008, the MIAS consultant supported the data analysis for IPTp and ANC attendance data for selected districts. These were the districts that were visited and interviewed on issues relating to their implementation of the MIP intervention. The results of this evaluation have been documented in a report and are being used to inform the future implementation of MIP within the NMS 2009–2017.
- Other ad-hoc data analysis was undertaken as and when requested.

Activity 2–Support update of malaria website with relevant outputs from MIAS

SPS/Kenya supported the development and launch of the new malaria website (www.nmcp.or.ke). The site was launched in the first quarter of FY 2007. Since then, the site has been very useful in sharing relevant and current information on the DOMC malaria control activities and achievements with the DOMC partners and the general public. The MIAS consultant has also been supporting update and maintenance of the site and facilitated access of DOMC e-mails via the internet. However, during FY 2008 the MIAS consultant shifted most of the responsibility for update and maintenance of the site to the DOMC staff appointed to undertake this task. This is in line with capacity building and technical knowledge transfer to the DOMC.

Hosting of the malaria website continued to be supported by SPS/Kenya.

Challenges and Lessons Learned

A key challenge in this area is the limited ICT skills in data management and analysis among the DOMC M&E staff and the fact that no one has been designated as the data manager responsible for undertaking this task. Unless this issue is addressed, the division may not make optimal use of the data housed in the MIAS.

OUTPUT 4: ROLLOUT OF THE DISTRICT ELECTRONIC TOOL TO FOUR PILOT DISTRICTS

Phase II of the MIAS project implementation involved the development of a district electronic tool to be used in collecting relevant malaria-related nonroutine data from the districts to feed the core MIAS. The district electronic tool will facilitate collection of the nonroutine data required by DOMC—

- Data on the district malaria activities implementation (for all activities funded under the DOMC business plan)
- Mass distribution of insecticide-treated nets (ITNs)
- Data on mass net retreatment
- Indoor residual spraying (IRS) campaigns

In addition, it was during this phase that the system design was to be expanded to incorporate routine malaria data collected by external sources—

- Routine data from HMIS, include IPT and ITN use data
- Tracking of ACT consumption
- Malaria epidemic tracking and detection

Activity 1—Planning for implementation of the district electronic tool—pilot districts assessment

Selecting the pilot districts

In the first quarter of FY 2008, a meeting was held with the ICT development partners and M&E unit of the DOMC to review the MIAS development schedule, progress in implementation of the system, and the pending issues before project completion was undertaken. A plan for the activities that still have to be undertaken to enable completion of the project's second phase as soon as possible was developed.

The selection criteria considered in selecting the four pilot districts were—

- It was preferable to select two endemic and two epidemic-prone districts
- It was also preferable to select a district with good infrastructure, where ICT in general is already well-received and where the target office has an internet connection
- At least one or two of the districts should be easily accessible from Nairobi
- At least one or two districts should have a high level of malaria-related activities, so it can capture adequate data for loading and testing the usability of the district electronic tool

Based on this criteria, the four districts selected for pilot testing the district tool were Kirinyaga (Central, endemic), Lugari (Western, epidemic); Kwale (Coast, endemic), and Kisumu (Nyanza, endemic).

Pilot district assessment visits

The need to carry out a needs assessment in the four pilot districts was identified. This was to assess the readiness of the districts for the implementation of a district tool and to specifically address two key agenda items that would provide a roadmap for implementing this tool—

- To establish the ICT capacity of the districts, including availability of computers at the districts and whether there was a reliable internet connection in place.
- To identify the office and staff in each district most suitable for taking responsibility of reporting on malaria data through the MIAS.

The pilot visits were undertaken on the dates listed below, and the key conclusion from the assessment was that all four districts had computer savvy staff and were enthusiastic to start reporting using the MIAS. The office of the Health Records Information Officer HRIO was identified as the most ideal to take responsibility for MIAS in the districts.

Actual assessment visit dates—

- Kirinyaga district (October 7, 2008)
- Kwale district (October 8, 2008)
- Kisumu district (October 16, 2008)
- Lugari district (October 17, 2008)

The full assessment report is contained in annex 3.

Activity 2—ICT hardware, software, and infrastructural upgrade in readiness for the rollout

The following subactivities were undertaken to ensure the correct ICT infrastructure, hardware, and software were in place to facilitate the smooth pilot testing of the district tool.

- Centrally, the MIAS server was configured to enable access to the system over the wide area network. This then made it possible for the pilot districts to access the MIAS district tool, which is a peripheral component of the core MIAS, via internet connections. This configuration made it possible for DOMC users to access MIAS through the internet even while on field visits.
- Rollout of the district tool also required that hardware, software, and consumables be purchased and installed at the four pilot districts. The table below summarizes the ICT equipment that was acquired for each of the districts.

Item	Qty. Per District
Desktop computer	1
UPS	1
Flash disk	1
Backup CDRW	2
Internet modem	1

Activity 3—Coordinating the development and implementation activities, including tool development, system testing, training, and tool rollout

Tool development

Development of the MIAS district electronic tool was done taking into account the fact that various districts in Kenya are at different levels of computerization and internet connectivity. The development solution then looked into options of enabling those with unreliable connectivity to work offline and require only connection to upload the captured data at an appropriate time. The fact that all the district users from the remote locations can log onto the same set of central applications using the internet browser interface has the potential to reduce the maintenance cost drastically when rollout to the rest of the districts is done.

The district tool was developed as a web-based solution where users use the internet browsers as client application to access information that runs on the central MIAS server at DOMC. Any updates to the application are done centrally on the MIAS server at DOMC, and all users immediately have access to the updates, i.e., there is no need to make changes on the user computers, saving maintenance costs and increasing the speed of updates.

To improve connectivity speeds, a lightweight interface was developed for the district/province users. Apart from entering activity performance and expenditure reports, the rest of district/province tools involve working with Excel worksheets and reports, and, when users are ready, they can upload the files online. Activity reporting requires online entries of period expenses and performance reporting that can be done once the activity is over or once a month per activity.

The following diagram gives a graphical illustration of the architecture scenario described above.

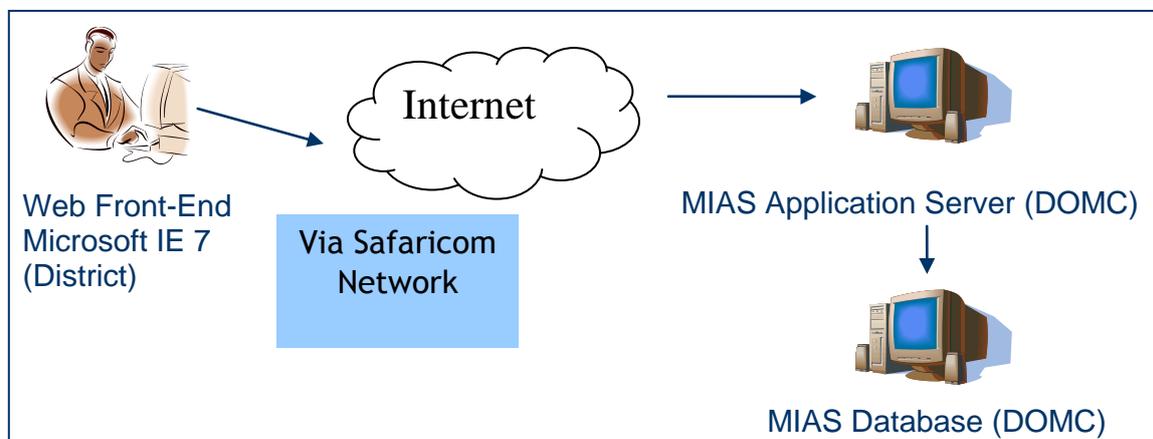


Figure 1. Current District Electronic Tool Solution Architecture

Training

A key conclusion from the needs-assessment visits to the four pilot districts was that the District Health Records Information Officers (DHRIOs) were the most appropriate focal persons for pilot testing the MIAS district tool. These officers are familiar with comprehensive use of computers for reporting purposes and do not require intensive initial orientation. In the draft NMS 2009–2017, the malaria program proposes to deploy specific malaria focal persons in all districts to facilitate implementation and reporting on malaria activities undertaken at the district level. Since in FY 2008 it was not yet known who these focal persons would be, it was deemed beneficial to include in the training at least two other members of the district health management team (DHMT). DOMC recommended that the District Surveillance Officers and the District Public Health Officers should be included in this training.

Considering that HMIS is the sole source of routine malaria information that originates from health facilities countrywide and that DHRIOs are part of the HMIS organogram, it was also proposed that some national HMIS officers should be included in the training. DOMC M&E officers participated in the training with a view of equipping them as the national TOT who will be greatly involved in the rollout of the MIAS district tool, initially to the pilot districts and eventually to all other districts in the country.

The two-day training was held on June 17–18, 2009. The following is a summary of the topics covered—

- Background information on MIAS
- An overview of the core MIAS
- MIAS components and their relationships
- MIAS roles
- Reporting on district net retreatment data
- Reporting on district mass net distribution data
- Reporting on IRS campaign data
- Other nonroutine malaria activity reporting
- Performance reports
- Template downloads

A network was set for the improvised classroom with two people sharing one computer for the practical sessions.

A summary of the training participants is below—

Cadre	Number of Persons
District Health Records Information Officers	4
District Public Health Officers	4
District Disease Surveillance Officers	4
National HMIS Officers	2
National DOMC Officers	8
GFL Programmers – Facilitators	2
MSH Officer – Facilitator	1
Total Trainees	22 (16 males and 6 females]

Pilot Rollout

After the training, the procured equipment was configured and the MIAS tool was installed in the computers that were ready for setup at each pilot district. A team of three people drawn from GFL Programmers, MSH, and the M&E team of the DOMC traveled to each of the four districts to support setup of this equipment and facilitate the districts in starting to use the MIAS tool for reporting to the DOMC as envisaged.

A summary of the activities undertaken during the pilot testing processes includes—

- Configuring the computers and installing the MIAS tool
- Installing a computer in district HRIO office and configuring wireless network access via Safaricom modem
- Helping the district user in posting at least one activity that included download of reporting template from core MIAS server at the DOMC and upload of a report from the district

Project Completion

Two MIAS progress review meetings were held in August 2009 to critically look at the completion status of each aspect of MIAS phase II development. These meetings were in preparation for the formal closure of the development and implementation of phase II and the entire MIAS project. A wrap-up presentation, including discussions on the post-implementation way forward, was made for DOMC and MSH participants. Overall, it was agreed that the project had been implemented according to the TORs and that the development partners needed to continue attending to arising maintenance issues as indicated in the implementation contract agreement.

The DOMC prepared a summary assessment of the MIAS project evaluating the status of phase II deliverables and the division's recommendations for payment to GFL Partners (annex 4).

GFL Partners have already submitted the deliverables under this phase of the project—

- Final report on MIAS phase II
- Training manual
- User guide
- System database design for phase II
- Updated MIAS installation CD

Challenges and Lessons Learned

One of the key challenges was the delay in the phase II project completion because the DOMC was not available during crucial stages of the project that required its participation and feedback, especially during the last two quarters of FY 2008 when the MPR process and related activities were ongoing. Another challenge, which is currently being addressed by the program, was the lack of a designated malaria focal person in the districts to take ownership and responsibility in ensuring that reporting on malaria activities was done as expected.

OUTPUT 5: ARRANGE FOR MIAS STAKEHOLDERS' REVIEW MEETINGS

Activity 1–Presentation/demonstration of MIAS to key stakeholders in DOMC/MSH

- Presentation/demonstration of the core MIAS to the new head of DOMC, Dr. Juma, was done in January 2009; during the demonstration, a detailed discussion on the current status of the MIAS, what the DOMC staff needed to do to ensure efficient use of the system and the way forward in development, implementation and rollout of the district electronic tool to the pilot districts was conducted
- A presentation/demonstration of the updated MIAS district electronic tool was made for the M&E team in June 2009 at the DOMC for final feedback to be incorporated prior to the rollout in the pilot districts; the update had been made taking into consideration comments and feedback received from DOMC participants at the MIAS update and refresher training that was held in April 2009
- Final presentation/demonstration of the entire MIAS (phases I and II) was made for DOMC and for the MSH/Kenya malaria team in October 2009 in preparation of completing the project; subsequent to the presentation, discussions were held on the way forward to ensure maximum benefit was derived from the completed system

Activity 2–Presentation/demonstration of MIAS to other stakeholders

The MPR process, which was undertaken from January to June 2009, presented the best opportunity for presenting the MIAS to other malaria partners and stakeholders. One of the keys products that came out of the MPR process was a new NMS 2009–2017, which is currently in a final draft format undergoing final editing and layout. This document will be printed and disseminated.

The M&E thematic report of the MPR process recognized MIAS as one of the major achievements of the malaria program. This was presented to the malaria stakeholders attending the MPR retreat in March 2009. Rollout of the MIAS to the remaining districts has been identified as one of the strategies in the NMS 2009–2017.

Activity 3–Review MIAS effectiveness and possible improvement areas

MIAS has been recognized by many stakeholders as having the potential to impact positively on malaria reporting, data analysis, and use. Like all systems, there is need for continuous refinement and further development to meet new and additional needs that the DOMC may have over the coming years. This is going to be dependent on feedback on the use and experiences obtained from DOMC and the district users.

The various demonstrations/presentations of the MIAS held for the DOMC have highlighted the key areas that need to be addressed to improve the system's effectiveness. The following are the key areas that need to be addressed—

- There is need to improve the use of the system by DOMC staff to ensure that it accomplishes the intended purpose
- Renewable maintenance contract to be developed for an initial period of 12 months
- Review of the system after 12 months to review new/additional needs

Challenges and Lessons Learned

The challenges in this area will be tackled once the key areas highlighted are addressed to ensure that all DOMC staff use MIAS to promptly report on their activities; an annual maintenance contract is put in place; and an annual review of the system is done to identify areas of improvement. The M&E team will need to play a more focused supervision role to ensure that the system is used optimally.

OUTPUT 6: UNDERTAKE OTHER M&E SUPPORT ACTIVITIES FOR THE MALARIA PROGRAM

Activity 1—Support development and consolidation of 2008/2009 malaria business plan

As discussed in the previous reports done on the MIAS, the annual malaria business plan forms the basis of the MIAS performance and evaluation module. It contains details of the activities to be undertaken in the year, the proposed and available budgets, fund sources, success indicators, etc. Some of the other reports derived from the business plan include the AOP, workplans for the various funding sources, and district reporting tools. This plan must be completed on time if activity performance reporting is to be done within MIAS as expected. During the year, the MIAS consultant supported the following related sub-activities—

- Reviewed the consolidated 2008/2009 malaria business plan to determine its readiness for loading into the MIAS during the first quarter of FY 2008. A test upload of this business plan was conducted and a meeting held with GFL Partners to discuss the cause of a few errors/issues that were experienced during the loading process. The conclusion was that these errors were mostly due to incomplete information on the business plan. The errors were eliminated in consultation with the DOMC focal unit heads.
- Uploading of the latest version of the 2008/2009 malaria business plan into the MIAS was done in the second quarter of FY 2008. The DOMC unit heads were then requested to fill in any missing details in the business plan within the system (e.g., budgets and allocations), assign tasks to unit members, and commence reporting within the system. Completing this preliminary information is a prerequisite to undertaking performance reporting in the MIAS.

Activity 2—Support development and consolidation of 2009/2010 malaria business plan

Developing an annual malaria business plan for FY 2009/2010 will be derived directly from the new NMS-costed framework. This NMS is costed up to activity and task levels and even has details on the cost of line items. Final reviews of this new NMS are ongoing prior to the printing and launch of the strategy.

Activity 3—Participate in relevant DOMC M&E meetings and workshops

Divisional Meetings

Since June 2009, the DOMC has been holding regular internal meetings for its focal point persons during which review is given by each person on the progress in his or her unit's activities implementation, challenges, and way forward. The DOMC head uses this forum to update the team on any emerging issues that may have an impact on the operations of the malaria program. DOMC holds occasional divisional meetings involving all staff at the program. The MIAS consultant is invited to participate and contribute during the meetings.

The table below summarizes the key divisional meetings attended during FY 2008.

Date	Meeting Title	Summary Key Objective(s)
January 12	DOMC divisional staff meeting	To discuss the following key topics— <ul style="list-style-type: none"> • The ongoing MPR • Rollout of MIAS district tool/update of malaria business plan • Implementation of activities funded under Department for International Development workplan
April 6	DOMC divisional staff meeting	To discuss the following key topics— <ul style="list-style-type: none"> • Progress in implementation on the business plan activities • Draft NMS and M&E framework • Development of Global Fund Round 9 proposal and Affordable Medicines Facility - malaria proposal • Activity reporting using the MIAS • M&E supervision visits
June 30 July 14, 21, and 27 Aug 6 and 11 Sept 1 and 18	DOMC focal persons meeting	Review progress in implementation of the planned malaria activities and plan the way forward

Malaria M&E Meetings

In addition to supporting the MIAS-related activities, the MIAS consultant participated in and provided technical support to other activities undertaken by the M&E unit of DOMC.

Following is a summary of such activities undertaken during FY 2008.

Date	Meeting/Workshop Title	Summary Key Objective(s)
November 26, 2008	M&E activities progress review meeting	Issues Discussed— <ul style="list-style-type: none"> • M&E activities required under the Global Fund Round 4 Phase 2 • Rollout of the MIAS district electronic tool
February 4, 2009	M&E activities progress review meeting	Issues Discussed— <ul style="list-style-type: none"> • M&E workplan and activities • Technical reports for the latest M&E activities • Design of a reporting template for malaria field trips (template designed by MIAS consultant)
June 30, 2009	Launch of MIS report	Launch of the report from the Malaria Indicator Survey (MIS) undertaken in 2007; MSH had provided technical support in planning for the survey and in report writing
August 6, 2009	M&E activities progress review meeting	Overall planning and review meeting for M&E activities
July/Aug 2009	Support to malaria operational research workshop	Provided technical and financial support in planning two-day workshop for the operational research technical working group members from August 16 to 18, 2009; The primary aim of the meeting was to provide a forum for refocusing malaria research needs in line with the new NMS 2009–2017
August 24, 2009	Meeting on RDT consumption data	Coordination and participation in a meeting held on August 24 to discuss way forward and tools required to get rapid diagnostic tests (RDTs) consumption and testing data

Malaria Program Review Process

Between January and June 2009, the DOMC organized a review of the national malaria program in Kenya. MPR is a periodic joint program management process for reviewing progress and performance of the country program against the minimum standards for effective malaria control and elimination with the aim of improving performance and/or redefining the strategic direction and focus. Participation areas by the MIAS technical consultant were specifically in the areas of M&E and program management.

In addition to the thematic review reports, some of the key outputs of the MPR process were the inputs required to develop the new NMS 2009–2017 and a national M&E plan.

The table below summarizes the key meetings and workshops in which the MIAS consultant participated during the entire MPR process—

Date	Meeting/Workshop Title	Summary Objective(s)
February 6, 2009	MPR stakeholders meeting	DOMC to sensitive stakeholders on the ongoing MPR process and get participants for each thematic area
February 10, 17, and 23, 2009	Meetings for the MPRs program management thematic review team	Literature review and a comprehensive write up on the malaria program performance in this thematic area
March 13–18, 2009	MPR retreat in Machakos, Kenya	<ul style="list-style-type: none"> • Summary presentations by each MPR thematic group, followed by discussions and feedback • Group meetings to incorporate the feedback into the thematic reports • Wrote a two-page executive summary based on each group's report • Defining the indicators of the proposed new malaria strategy's activities
April 29 and 30, 2009	MPR stakeholders workshop	<ul style="list-style-type: none"> • Orientation of the malaria control stakeholders on the ongoing malaria program review processes, the current Kenya malaria control profile (map), and the draft malaria control strategic plan (2009–2017) • Forum for malaria control stakeholders to develop and adopt a roles matrix for all implementing partners and to define the next steps for the finalization and implementation of the national malaria control strategy, 2009–2017
June 1–4, 2009	Malaria program review workshop at Kenya Commercial Bank (KCB) Centre in Karen, Kenya	<ul style="list-style-type: none"> • Completion of the zero draft M&E plan in line with the new NMS • Update of the World Malaria Report for Kenya • Data Analysis for the draft M&E thematic report
June 5, 2009	MPR stakeholders meeting at Laico Regency	<ul style="list-style-type: none"> • Presentation of the process and outcome of the MPR process • Signing of an aide memoire by key partners to signify commitment to implement the recommendations that were derived from the MPR process

Development of M&E Plan 2009–2017

One of the key products that came out of the MPR process was a costed NMS 2009–2017 that is currently in an advanced draft awaiting design, printing, and dissemination. As a result, there was an urgent need to develop an M&E plan and framework to measure performance and progress in implementation of the new NMS 2009–2017. The MIAS consultant has provided technical support and spearheaded the development of this M&E plan 2009–2017.

The M&E plan development process has included a review of the goal, objectives, and key strategies outlined in the new NMS and selection of the indicators that will be required to measure their achievements. At the same time data sources for these indicators have been identified and the process of data acquisition and responsibilities clearly defined. Targets for the key indicators over the life of the NMS have been set. Finally, a critical review and analysis of the current methods used by the malaria program to undertake M&E activities has been done, and, based on this review, improved methodologies for measuring performance have been defined and documented.

The draft M&E plan was distributed to the malaria M&E technical working group members for their comments and inputs, which will then be incorporated into the final draft of the plan. A small core group was then constituted to review the indicators and finalize the draft. MSH has spearheaded the finalization of the M&E plan and incorporation of comments received from all stakeholders. The draft NMS and M&E plan were presented to malaria stakeholders during a workshop held on October 1, 2009, for review and final inputs into these two documents. The M&E plan is now ready for layout design, printing, and dissemination.

The table below summarizes the key meetings and workshops that the MIAS consultant supported/participated in during the entire M&E plan development process—

Date	Meeting/Workshop Title	Summary Key Objective (s)
June 1–4, 2009	Malaria program review workshop at KCB in Karen, Kenya	Worked on the zero draft of the M&E plan 2009–2017 in line with the new NMS 2009–2017
July 28, 2009	M&E technical working group meeting	Presented the draft malaria M&E plan 2009–2017, which was a key agenda item for discussion at the meeting
August 26–27, 2009	M&E plan finalization workshop	Meeting of a core team of partners and experts in M&E issues to refine and update the draft M&E plan
Sept 7–8, 2009	Costing of the new NMS 2009–2017	Two-day workshop to cost the tasks and subtasks for all activities contained in the new NMS 2009–2017 from which the M&E budget component was derived

Activity 4—Participate in other relevant malaria program meetings/activities

During FY 2008, the MIAS consultant facilitated several malaria program M&E trainings for health workers and participated in high-level meetings/workshops relevant to the malaria program strategy and M&E.

Following is a summary of other such trainings, meetings, and workshops undertaken during the year.

Date	Activity/Meeting/Workshop Title	Summary Key Objective (s) / Activities Done
March 17, 2009	Workshop on improving ICT capacity in health programs and research	Workshop organized by the University of Nairobi, College of Health Sciences during which a presentation was made by the DOMC on "Malaria: Trends, Management, and Capacities". One of the subtopics covered was the role of MIAS in malaria management.
April–May 2009	Facilitator in TOT training for DPFs on effective management of malaria medicines	Participated as a facilitator in TOT training for DPFs on effective management of malaria medicines and use of the revised malaria medicine consumption tracking tools. The training sessions were held on April 6–7, 2009; April 20–21, 2009; May 6–7, 2009, and May 12–13, 2009.
May 18–19, 2009	Update the malaria country database for Kenya	Worked with DOMC M&E team and a WHO consultant to update the malaria country database for Kenya, which in turns feeds the annual country malaria profile.
June 2009	Review of M&E module for case management training	Review M&E module of the case management TOT training curriculum in preparation for MSH-supported training at the coast.
July 22, 2009	TOT training for case management consultants	Facilitated TOT training of the M&E module for the case management trainings to be held countrywide by DOMC outsourced consultants.
August 13	2009 health planning summit for Ministry of Medical Services and MOPH&S	Summit organized by the health sector strengthening department during which strategic plans for both ministries and key HMIS strategy and planning documents were presented.
July–Sept 2009	PMM survey preparation meeting	Participated in the Pharmaceutical Management for Malaria (PMM) survey planning meeting on July 6 to discuss sampling method to be used, classification of the Kenyan districts according to the epidemiology, and other issues. Subsequently participated in meetings to discuss and disseminate survey results.

Activity 5–Support acquisition of ICT equipment, services, and consumables to strengthen M&E and ICT capacities at the division

ICT is playing a more and more critical role in running the business of the malaria control program. This is because practically all communication, both within the division and with external partners and stakeholders, is done using the e-mail system. At the same time each officer at the division is expected to prepare his or her own reports using office applications, and information sharing is done via the program’s website. As detailed in this report, malaria activity reporting and data uploads and analysis are done via the MIAS. Acquisition of the necessary ICT equipment, services, and consumables should be supported for the overall smooth running of the malaria program.

MIAS consultant provided technical support to the division in defining its needs for ICT equipment in FY 2008, part of which was funded using USAID support via SPS/Kenya. The support from MSH was budgeted under Activity 3 of the FY 2008 SPS/PMI malaria workplan (i.e., provide administrative/management support to the DOMC).

Challenges and Lessons Learned

The MIAS consultant provided a lot of support to the other malaria programs and M&E-related activities outlined under this output area. The lesson learned is that there is need to relook at the TORs of the MIAS consultant to cover all M&E-related activities at the malaria program, especially now that the development and implementation phase of the MIAS is complete.

SUMMARY OF ACHIEVEMENTS, CHALLENGES, AND LESSONS LEARNED

Achievements

- The core MIAS was updated in response to feedback received from the DOMC after training. Routine technical assistance for the DOMC system and support of the system's maintenance issues were provided throughout FY 2008.
- The DOMC users were given a two-day refresher training on MIAS after its implementation of the proposed system updates.
- Linkages with the key sources of routine malaria data, namely HMIS, DDSR, and LMU/LMIS, were strengthened during FY 2008. HMIS continued providing malaria data updated on a monthly basis via its FTP website. DDSR continued to provide weekly data on reported malaria cases for comparison with the district set malaria thresholds.
- Analysis of MIAS data was done during the year to enable reporting to the ministry on proportional reduction in malaria cases on a quarterly basis. Evaluation of HMIS data in MIAS was done to report on ANC attendance in comparison with IPT update for targeted districts. The results of this second analysis were used during the national evaluation of the implementation of MIP intervention, which has subsequently influenced the MIP strategy to be employed under the new NMS 2009–2017.
- These were the key achievements in rolling out the MIAS district electronic tool in four pilot districts—
 - The four pilot districts were selected based on some clear criteria explained later in this report.
 - An assessment visit was made to each of the pilot districts to establish their ICT capacities and identify the office and staff to be involved in the district tool rollout.
 - The central MIAS server was configured to allow remote access to the MIAS application from the districts.
 - The ICT equipment required for the four districts was procured and configured.
 - Development of the tool, including testing, was completed.
 - The pilot district targeted staff attended a two-day MIAS training.
 - The MIAS district tool was set up in the four pilot districts.
 - Phase II of the MIAS project was completed and all deliverables received from the ICT development partners.

- Several presentations/demonstrations of the MIAS were made to stakeholders from the DOMC and MSH at different stages of the project development and implementation. The MIAS was presented to the malaria program partners and other stakeholders during the malaria program review process that took place between January and June 2009.
- The following program M&E and related activities were accomplished/supported—
 - Development and consolidation of 2008/2009 malaria business plan and subsequent loading of the plan into the MIAS
 - Participation in the costing of activities and tasks in the new NMS 2009–2017 from which the 2009/2010 annual malaria business plan will be derived
 - Participation in the divisional meetings, focal persons meetings, and M&E planning and progress review meetings
 - Participation in the malaria program review process
 - Spearheading development of the national malaria M&E plan 2009–2017
 - Support to other malaria M&E related activities, e.g., TOT training on the case management M&E module

Challenges and Lessons Learned

- DOMC staff will need to deliberately seek the time to make full use of the MIAS in activity reporting and data analysis if maximum benefit of having this system in place is to be reaped. The newly completed strategy documents (NMS and M&E Plan 2009–2017) have fortunately added an even greater impetus for improved usage of the MIAS. The M&E team will need to play a more focused supervision role to ensure that the MIAS is used optimally.
- There is still need to continue strengthening linkages and working closely with all sources of routine malaria data to address issues on the nonoptimal reporting rates and how the overall data quality can be improved.
- Limited ICT skills in data management and analysis among the DOMC M&E staff and the fact that no one has been designated as the data manager responsible for undertaking this task remains a major challenge. Unless this issue is addressed, the division may not make optimal use of the data housed in the MIAS.
- A major challenge in implementation of MIAS phase II project completion was delays in implementation occasioned mostly by the nonavailability of the DOMC during crucial stages of the project that required its participation and feedback. This was especially so during the last two quarters of FY 2008 when the MPR process and related activities were ongoing. Another challenge, which is currently being addressed by the program, is the lack of designated malaria focal people in the districts to take ownership and responsibility in ensuring that reporting on malaria activities is done as expected.

- In line with the requirements of any other ICT system, there is need to put in place a detailed maintenance contract with the system developers to ensure that any system bugs encountered are corrected in a timely manner, and that adhoc requests for modification or improvements to the system can be accommodated. An annual review of the system will need to be done to identify areas of improvement.
- Another lesson learned is that there is need to relook at the TORs of the MIAS consultant to ensure that they cover all M&E-related areas that she supports at the malaria program. This is even more necessary now that the development and implementation phase of the MIAS is complete.

Planned Activities for FY 2009

- Continue providing technical support in undertaking routine user support and OJT on use of the MIAS. At the same time continue providing technical assistance in system administration issues and data loading and analysis.
- Build capacity in at least two DOMC M&E staff to be able to undertake the MIAS support activities currently done by the MIAS consultant.
- Support and evaluate reporting from the four pilot districts involved in rollout of the MIAS district tool.
- Support the drafting of an annual maintenance contract for the MIAS to ensure the system bugs and updates are addressed in a prompt manner.
- Continue to support M&E technical working group meetings and the process of updating and disseminating the annual malaria business plan.
- Provide further capacity building for targeted DOMC staff on M&E and ICT-related areas, such as database management systems, website update, data analysis, and network support.
- Continue providing support in other malaria program M&E-related areas as requested by the division and in-line implementation of M&E activities contained in the annual malaria business plan.

Conclusions and Recommendations

Development and implementation of the core MIAS and the MIAS district electronic tool is now complete. The DOMC and other stakeholders who have interacted with this system recognize the great potential optimal use this system will present to the malaria program. The MPR process identified MIAS as a key achievement of the M&E unit of the malaria program. To realize this potential, however, there is need to ensure that the system continues to be used to its maximum capability.

The key recommendations for future support of MIAS and M&E activities at the malaria program include—

- That with the completion of the development and implementation phase of the MIAS, the TORs for the MSH-supported MIAS consultant should be reviewed to include support to all malaria M&E-related activities, a role that she is already playing.
- That USAID, through MSH, continues to support capacity building for the DOMC M&E staff in ICT data management and analysis and other M&E-related topics.
- That the DOMC continues working in close collaboration with other divisions that are its source for routine malaria data to address the perennial problems of low reporting rates, poor data quality, and provision of support supervision to the primary sites providing this data.
- That USAID, through MSH, supports the signing of an annual maintenance contract between the ICT development firm and the DOMC. This will ensure that any bugs and other system support issues are attended to promptly, enabling the now completed core MIAS to be used to its full capacity. The DOMC will then be in a position to reap maximum benefit in improvement of its reporting structures and repository of relevant malaria data.

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ANNEX 1. HMIS/MIAS WORKPLAN FOR FY2008

FY 2008 HMIS/MIAS WORKPLAN FOR ACTIVITIES IN SUPPORT OF DIVISION OF MALARIA CONTROL												
Activity/Sub-Activities	SPS IR Areas	Products/Outputs	Lead	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09
Health Management Information System (HMIS) Support												
<i>Support the Efficient Use of MIAS at the DOMC</i>												
Initial hand-holding and technical support to ensure all DOMC users are using the system efficiently	IR 1, IR 2	MIAS usage reports	J. Karuri									
Provide support in administration, backup, and routine maintenance of the completed MIAS	IR 1, IR 2	Minimal downtime for MIAS	J. Karuri									
Further capacity building for staff at DOMC through relevant systems and M&E-related trainings	IR 1, IR 2	Training reports	J. Karuri									
Arrange for agreement on annual maintenance of the system by its developers	IR 1, IR 2	Signed maintenance contract	J. Karuri									
<i>Strengthen Linkages with the External Data Sources, Especially HMIS</i>												
Continue to strengthen linkages with the external data sources/MoH depts (DDSR, PPB, LMU, and HMIS) to facilitate getting monthly malaria data in agreed-upon formats	IR 1, IR 2	Monthly loading of external malaria data into MIAS done	J. Karuri									
Work with HMIS to improve the way the malaria data is uploaded on the FTP site to ease the loading of the data in MIAS for further analysis	IR 1, IR 2	Updated source data files from HMIS	J. Karuri									
Work with LMU/LMIS to finalize on the way ACT data will be availed for loading into MIAS database	IR 1, IR 2	ACT source data files from LMU agreed upon	J. Karuri									
Review output generated by MIAS using the DDSR data to enhance its usefulness	IR 1, IR 2	Updated analysis of malaria epidemics data in MIAS	J. Karuri									
<i>Support Analysis and Use of the Malaria Data in MIAS as per Stakeholders Requirement</i>												
Support development of ad-hoc reports and analysis from the MIAS database	IR 1, IR 2	Malaria reports generated	J. Karuri									
Support update of malaria website with relevant outputs generated from MIAS	IR 1, IR 2	Reports available on website	J. Karuri									
Disseminate some MIAS reports to the relevant stakeholders	IR 1, IR 2	Reports disseminated	J. Karuri									

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Activity/Sub-Activities	SPS IR Areas	Products/Outputs	Lead	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09
Rollout the District Electronic Tool to Four Pilot Districts	IR 1, IR 2											
In preparation for development and rollout of the district tool, meet with HMIS for update on MIAS implementation and discussion on data flow	IR 1, IR 2	Meeting report; consensus to use DHRIOs in pilot districts	J. Karuri									
Purchase necessary ICT hardware, software, and consumables for the 4 pilot districts	IR 1, IR 2	Procurement reports; hardware and software installed	J. Karuri									
Coordinate the development and implementation of the district tool that consists of the following sub-activities: i) Regular Project Management Meetings ii) Tool Development iii) Testing, Rollout, and Training in the 4 pilot districts	IR 1, IR 2	i) Progress review reports ii) Tool developed and documented iii) Testing, training, and rollout reports	J. Karuri									
Arrange for a MIAS Stakeholders Review Meetings	IR 1, IR 2											
Arrange for a presentation/demonstration of the completed system to key stakeholders from DOMC and MSH	IR 1, IR 2	Presentation/DEMO held; report	J. Karuri									
Demonstrate MIAS to the key stakeholders, and show how the external data is being used to generate important review reports for the DOMC	IR 1, IR 2	Presentation report	J. Karuri									
Review MIAS effectiveness and consider possible improvement areas	IR 1, IR 2	Review report	J. Karuri									
Other M&E Support Activities	IR 1, IR 2											
Support the development and consolidation of the 2008/09 malaria business plan at DOMC and input, this plan into the core MIAS	IR 1, IR 2	2008/09 business plan consolidated and loaded in MIAS	J. Karuri									
Support the development and consolidation of the 2009/10 malaria business plan at DOMC												
Participate in the various M&E meetings and workshops arranged by the DOMC	IR 1, IR 2	Meeting minutes; workshop reports	J. Karuri									
Participate in the DOMC divisional and other meetings as necessary	IR 1, IR 2	Meeting minutes	J. Karuri									
Support DOMC in obtaining ICT equipment, services, and consumables from MSH for use in enhancing the ICT	IR 1, IR 2	Equipment installed;	J. Karuri									

ANNEX 2. SUMMARY OF MIAS UPDATE AND REFRESHER TRAINING HELD IN APRIL 2009

Background

MSH/Kenya has supported the M&E function of the DOMC in development and implementation of a MIAS, an information system that will—

- Assist in M&E of the malaria program activities being implemented at national and district levels
- Provide an easy-to-access repository of other malaria specific routine data sets—Health Management Information System, integrated disease surveillance and response data, ACTs, etc.

The initial training for the DOMC staff in use of MIAS was conducted in September 2008. The core MIAS was subsequently updated and enhanced to include the trained staff's comments and suggestions for improvement. At the same time, the system has been expanded to include the district tool that is geared toward easing reporting from the districts. Various categories of malaria data, e.g., from HMIS and DDSR, have also been loaded.

Following these new developments, the implementation team identified the need to organize a two-day hands-on refresher and update training to be held for all the DOMC staff. The training was held in two sessions—with group 1 attending training on April 1–2 and group 2 attending training on April 7–8, 2009.

Training Attendance

Session One

	Name	Designation
1	Dorothy Memusi	Program Officer
2	Andrew Nyandigisi	Program Officer
3	Regina Karonji	Secretary
4	Jacinta Opondo	Program Officer
5	Julius Mututho	Program Officer
6	Paul Kiptoo	Technical Officer
7	Evan Mathenge	Senior Research Officer
8	John Nyamuni	Program Officer
9	Andrew Chisaka	Accountant
10	Andrew Wamari	ICT Officer/Training Coordinator
11	Josephine Karuri	Training Coordinator (MSH)
12	David Mulwale	GFL Training Facilitator
13	Livingston Musumba	GFL Training Facilitator

Session Two

	Name	Designation
1	Boniface Isindu	Health Records Information Officer
2	James Sekento	Public Health Officer
3	Eunice Njeri	Human Resource Management Officer
4	Julius Kimiti	Clinical Officer
5	Dorcas Alusala	Program Officer
6	Francis Kimani	Human Resource Management Officer
7	Ayub Many	Medical Officer
8	Christine Mbuli	Health Records Information Officer
9	James Akudian	Clinical Officer
10	Jacob Kimani	Program Officer
11	James Sang	Public Health Officer
12	Andrew Wamari	ICT Officer/Training Coordinator
13	Josephine Karuri	Training Coordinator (MSH)
14	David Mulwale	GFL Training Facilitator
15	Livingston Musumba	GFL Training Facilitator

Training Proceedings

A summary of the topics covered during this training follows—

- MIAS executive summary
- MIAS components and their relationship
- MIAS roles
- Business planning
 - Approach, objectives, outputs, and activity review
 - Line items discussion
- Performance and expenditure monitoring
 - Assigning activities to staff and levels
 - Changing activity assignments
 - Disbursing funds to recipients
 - Activity reporting
- Training on information system
 - Adding training events
 - Uploading trainee data
 - Linking training activity to training event
- Mission and meeting management
 - Adding new mission information and uploading mission reports
 - Adding new meeting data and uploading minutes

- Survey management
 - Adding NMS targets and survey indicators
 - Adding surveys
 - Adding survey results
 - Survey reports
- What is new in MIAS

The method of instruction included—

- Review components' functionalities
- Exercises
- Repeated for each covered functionality

Exercises Covered—

1. Each participant to identify three different activities in his or her respective units at the DOMC
2. Participants to update the activity details, including allocating funds and funders for the three activities
3. To add at least three line items to each of the three activities
4. To assign each activity to at least three districts
5. Disburse funds to the activities assigned to the districts
6. Report against each activity and view the performance report.

Feedback and Areas of Improvement

During the course of this training, further feedback was received from the training participants. After deliberations with the system developers, the following suggestions for improvement were agreed upon—

- Activity assignment to level should be restricted based on the business plan activity level, i.e., system should not allow assignment of a national level activity to a district recipient
- When including activities in the business plan, each discrete activity should only belong to one level, so, if, for example, MIP training-of-trainers training is done at the national, provincial, and district levels, there is need to have three activities to accommodate the three levels
- Line items should be selectable from a predetermined list (to be prepared by Josephine and Wamari in consultation with all the DOMC unit heads and with the Global Fund to Fight AIDS, Tuberculosis and Malaria accountant)
- It was noted that the number of units in the Add Line Items screen is redundant and should probably be removed
- It was suggested that a thousands separator (0,000,000) be used to make it easier to read monetary amounts in the system

- When assigning activities to levels, the system should allow for input of two variables because most line items require two variables (e.g., per person, per day); the default value for each variable should be one
- All reporting within the system should be based on actual calendar years and months e.g., January to December 2008 [not period X to period Y, and not on the fiscal year]
- Because the expenditure reports will report only grand (overall) expenditure on activity per funder and will not give the same details for each line item, when deciding on activities to be included in the business plan, the DOMC staff should break down the activity based on the required reporting details
- The general performance report (non GF) option was reporting erroneous figures; GFL was to work on rectifying this error
- Each performance report should at minimum indicate the funder, funds recipient, and reporting period
- When disbursing funds, the system was requiring that at least one shilling be allocated for each activity ready for disbursement; this had the potential to cause complications in future—GFL was to work on rectifying this error
- For the training module, there was need to update the layout, so that some of the required other fields could be completed right from the training event screen, e.g., venue details, course details, etc; also, the link for a training event to the actual activity should be more apparent
- For the meetings/missions module, comments similar to the above applied
- It was agreed that training units should be equivalent to the DOMC approaches; training sub-unit is not necessary; training facilitators minimum should be one (not seven); trainees selection screen should include both name and ID; and the training funders should be same as the business plan activity funders already registered in the system
- It was agreed that Activity Assignment →Assign Training Activity option be moved to the training information management module for ease of system use
- It was agreed that to ease the reporting, a trainees list should be provided in Excel format with the trainee details that can then be uploaded into MIAS; Wamari to provide the template for this trainees list
- The training reports available should give more details and should include the facilitators, venue, comments from the actual activity report, etc, i.e., the linkages of the training event to the related activity should be more obvious
- The above comment applies for the meetings/missions events

- Various available reporting templates, e.g., for mission/field trips, training registration, etc. should be uploaded to MIAS
- The list of all downloadable files should be viewable by all and should be grouped by DOMC approach for ease of reference
- For the district tool, there was need to find a way to describe or link the uploaded district files to the related activity on which the district was reporting

Way Forward

1. GFL to work quickly to implement the feedback received at the two training sessions
2. The DOMC units to complete updating their business plan activities within MIAS to add the missing elements, e.g., budgets, funders, allocated amounts, etc.
3. GFL to load the list of line items to be availed from DOMC and prechecked by the GF accountant (Chisaka), and to link them to the corresponding line item codes
4. DOMC staff to add line items for each of the business plan activities and follow through until the disbursement and reporting for the completed activities
5. M&E unit of DOMC, as custodians of the MIAS, to show the way forward and spearhead the efficient and prompt use of MIAS for reporting
6. Details of the survey module to be discussed between the system implementers and the M&E team, and any required improvements agreed upon, for example, in reporting
7. MIAS can be used to convey the important DOMC notices, e.g., call for technical or divisional messages, etc.
8. GFL to provide a technical person to continue with direct support to the DOMC in efficient use of the updated MIAS for a period of two weeks and when necessary thereafter
9. The DOMC head (Dr. Juma) be requested to require that all officers report through the system, including reporting for the frequent meetings, field trips, and training activities held

ANNEX 3. NEEDS ASSESSMENT REPORT

For visits done on October 6, 8, 16, and 17.

Background

Following previous meetings in regard to phase II of MIAS, it had been agreed that there is need to perform a needs-assessment visit to four pilot districts to assess the readiness of the districts for the implementation of a district tool that is part of MIAS. The visits were intended to tackle two key agenda items that will provide a roadmap for implementing this module, namely—

1. To establish the ICT capacity of the districts, we needed to find out if computers are available at the districts, whether they are networked, whether there is reliable internet connectivity, and how the internet is financed.
2. To identify a one person in each district through which all malaria data will be channeled.

For each visit, an overview of MIAS was given to the district staff in attendance to present a background of the part a district has to play.

The Findings

Kirinyaga District

A team composed of Andrew Wamari, Christine Mbuli, Andrew Mwaura, and Francis Ouma (GFL) visited the MoH's office of Kirinyaga districts on October 7, 2008, and interviewed the DHRIO. During the visit, a net retreatment exercise was in progress; and, therefore, the team could only sit with the DHRIO for a detailed interview.

Connectivity

Kirinyaga has internet via Wananchi online. The link is via Telkom wireless, and the total cost comes to KShs 25,000 per month. It is an always-on connection. They had tested connectivity with Safaricom Bambanet, but the cost appeared to be too expensive. Internet connectivity is financed using Government of Kenya funds as part of the monies used to run the Medical Officer of Health's office.

Regarding the HMIS, the DHRIO mentioned that the FTP system works wonderfully and that it has made reporting very easy. In addition to being fast, one needs only to send it once for it to be available at both the province and national level. The DHRIO added that initially FTP had been problematic for the two previous months but at present works perfectly. To access the FTP system, they use either Filezilla or a browser such as Internet Explorer or Mozilla.

Computers and Training

There is a dedicated server computer where the internet is connected at all times. A small UPS is connected to the server for cases when there is no power. The DHRIO's computer is connected via LAN to the server. The DHMT had six computers that were donated by the European Union. HMIS provided machines and these were noted to be of high specifications.

IT capacity of staff was seen to be high. Training on uploading/using FTP had been done; however, it was expressed that there is need for more training, for example, in using advanced features of Excel.

Challenges Faced by District

The main challenge expressed by the DHRIO was in obtaining records from outstations. There is a lot of incompleteness, even in the submitted reports from facilities. Another challenge was that few records people work at the headquarters. At present, there are only six, and there is need to preferably have one at each health center. Virus attacks on the computers were also reported to be a menace; therefore, there is need to provide assistance/training on backup techniques.

General Comments by District

- The DHRIO commented that the DOMC tool could adopt the HMIS FTP structure specifically because FTP allows single submission of a report and it is made available at all levels—national, provincial, etc.
- The DPHO's computer should be linked to the DHRIO's to facilitate faster correspondence on reports and validation.
- DOMC should give feedback on reports submitted by the district and not just receive and go silent.

Focal Person

The DHRIO said she did not mind being the focal person.

Kwale District

The team to this district was composed of Andrew Wamari, Christine Mbuli, and Andrew Mwaura. The team met with the DHMT of Kwale on October 8, 2008.

Connectivity

The internet and link is via a dish that was funded by UNICEF/DHL for one year and two years respectively. Subscription cost of the internet was reported as KShs 12,000 per year. All computers in the hospital, including the MOH's office, are interconnected and have internet that is always on. HMIS FTP system is used for reporting. Internet is reliable in the morning or late evening and takes about five minutes to upload a report via FTP.

Training

FTP training was carried out here for one day, and those trained are able to submit reports and can use Filezilla or a browser interface.

The Kwale Model

The DHRIO gave us an overview of the Kwale Model that was started in 2000 with assistance from Agha Khan Health Services. The DHRIO also demonstrated to us the locally hosted HMIS intranet system running on SQL server. It was mentioned that once data has been input in this system, there is a central system to which updates from the remote centers (Kwale for example) upload data periodically. However, NASCOP nonroutine data is not fed to it, but done in Excel.

Challenges

The hospital has two reports persons, and, with the DHRIO, three reports persons. The DHRIO is overwhelmed and would become more overwhelmed if he took leave. Sometimes when physical reports are submitted to province, they do not get delivered to the central level, and it appears as if Kwale is not reporting. When funds have been allocated for activities at the central level and there is need adjust or altered depending on the situation on the ground, approval usually takes too long.

Another challenge is that here records officers are mostly not involved during district activities, and this makes it difficult for them to later report on such activities or even respond on matters regarding the same activities.

General Comments by District

- Currently, reporting rate is a 92 percent. This is attributed to feedback and quarterly review meetings. The only challenge is for the private facilities that have lower reporting rates than the rest.
- It was mentioned that it would be a good idea to conduct training for the DHMT as a whole, and additional computers were required.

Focal Person

The DHRIO said he did not mind being the focal person

Kisumu East District

This team composed of Boniface Isindu, Eric Were, and Andrew Mwaura visited Kisumu on October 16, 2008. Those interviewed included the DHRIO, DPHO, and MoH.

Connectivity

The district has installed Telkom wireless for internet access (this was installed before the HMIS/FTP system) in the DHRIO's computer. In addition, there is a personal Safaricom device belonging to one of the staff that is sometimes used when Telkom scratch cards are not available. Internet connectivity was reported to be good, and reports take a short time to submit via the FTP system. HMIS supports connectivity by occasionally providing scratch

cards. However, the DHRIO remarked that there is intermittent break down of the submission system.

The FTP system has been in use for two months now, and this district has sent one report so far and is compiling the next one. The Filezilla interface is used to connect to HMIS system, and the DHRIO with assistance from a data clerk is responsible for all data entry including reports from the DPHO.

Computers and Training

Several computers are available but are not connected to the internet, and whenever someone needs to use the internet, he or she has to borrow the DHRIO's computer. It was observed that these computers are relatively old and do not even have drivers for networking. Only the DHRIO and MoH have modern computers. It was the general expression of the DHMT that it would be very happy to be provided with more modern computers that are equipped with internet connectivity. It was also reported that currently there is no support provided for computer maintenance.

Training on FTP was carried out for three days to the DHRIO and one data clerk. However, a good number of the DHMT requires basic computer skills, such as using Excel.

Challenges

Some of the DHMT offices are temporary structures and would not house computers securely. It is usually difficult to obtain scratch cards for the Telkom wireless. Those provided by HMIS run out very quickly.

General Comments by District

- The DHRIO commented that it would be very helpful if the proposed data entry screens could have a feature to analyze data prior to submitting it; reason being that the records person is not always trained on the semantics of the data and therefore might not note errors in the data.

Lugari District

This team composed of Boniface Isindu, Eric Were, and Andrew Mwaura visited Lugari on October 17, 2008. Those interviewed include the DHRIO, DPHO, DPHN, and acting District Medical Officer of Health. During the meeting, the acting District Medical Officer of Health chaired the meeting, gave a brief description of the district, and mentioned that it has three divisions with a total of 46 reporting facilities. He said that Lugari district has locations that are both endemic and epidemic.

Connectivity

The installed connectivity is Telkom wireless and was provided by HMIS. Internet access is quite problematic and works well at night. It keeps disconnecting and the DHRIO sometimes is not certain if a report has successfully been submitted or not. The acting MOH pointed out that the district had purchased Safaricom wireless devices. We noted that the DHRIO was not aware of this and his computer was not connected to this device. At present the Telkom device does not work due to the USB cable being damaged. To send a report the DHRIO

borrow a cable from a friend or goes to the nearby town to connect there. He has improvised the Telkom device by extending its aerial via a uhf TV aerial to get better reception. It was observed that Safaricom reception was very poor at the premises.

HMIS provides either KShs 2,000 or 4,000 worth of Telkom cards per quarter to support connectivity. DHRIO pointed out that DOMC funded connectivity with KShs 52,000 for the year.

HMIS/FTP reporting has been done for the last two months. Filezilla was said to be better than the normal browser. There are two records persons—one at the district office and the other at the hospital. They sit in the same office.

Computers and Training

There are a total of five computers available. The DHRIO has one that was donated by NASCOP. Of the five computers, one was provided by HMIS. Two others were given by DOMC to strengthen communication between DHMT, PHMT, and national level. These computers are not networked at all.

HMIS training was offered to the DHRIO only and was done in one day. It was said that the DHMT needs training in basic computer skills and especially in Excel and other useful tools.

Challenges

The DHRIO is overwhelmed. He is the only records person at the district, and there is a lot of activity including field visits. Connectivity to the internet is problematic, and a report is sent several times to ensure successful submission.

General Comments by District

- The DHMT expressed a need for this project to collaborate with the Disease Outbreak Monitoring Unit to make it easy to report on weekly surveillance data. At present, they use SMS-based reporting. It is cumbersome to compile a report in an SMS message.
- It was also mentioned that the district really needs more facilitation through provision of fuel for motorbikes and recruitment of an extra DHRIO person to assist in recording data and performing facility visits.
- Lugari being a malaria-prone area needs support for more microscopes (four more), stains, and microscope slides.
- Bad weather also contributes to poor reporting rates because of insufficient funds for mobile phone communication.
- The DHRIO recommended that he can be trained on the semantics of reports the he is supposed to fill so that it is possible for him to detect errors in the data.
- There are very few malaria nurses, and hiring of extra can probably be facilitated by DOMC.

Conclusion

There was connectivity in all districts. Kirinyaga and Kwale were especially endowed with fast and always-on connectivity. Kisumu and Lugari used pay-as-you-go connectivity. The internet service providers were different in all the districts, and, in Lugari, Safaricom had very poor network reception. Apart from Kisumu East, the other three had sufficient computers. However, each district expressed an interest in having its computers networked to make it easy to communicate and share data.

All visited districts are using HMIS/FTP tools to submit reports, and the records persons were well trained on using it. The DHMT of the four districts expressed a need to be trained on introduction to computers, and the records people were interested in advanced training in Excel.

Each district was very enthusiastic of the idea of using an electronic tool to report on malaria data as opposed to the manual method because, once a report has been submitted, there is a guarantee that it has been delivered to DOMC and other intended recipients. The DHRIO, in all the areas, was suggested as the most appropriate focal person for the piloting process.

Opportunities for DOMC as motivation for the piloting process include—

- Training of DHMT on computer skills
- Networking of computers
- Provision of computers for Kisumu East
- Financial support for Kisumu East and Lugari for internet connectivity

ANNEX 4. ASSESSMENT ON THE MIAS PHASE II DEVELOPMENT

Background of the System

The Division of Malaria control identified the need to put into place an efficient system that will acquire, process and store data for ease of access and dissemination. Malaria Information Acquisition System will in addition provide outputs regarding progress towards reaching implementation targets as articulated in the national malaria strategy. MIAS is designed to be an IT based system that will support the overall monitoring and evaluation at the DOMC and support decision-making process.

The development of the system is support by USAID through MSH-SPS. The support includes funding for the development of the system and technical support to the Division to ensure that the development and roll out process is technical sound and meets the expectations of the DOMC.

The systems development process was outsourced to GFL Partners following the assessment of bids for the contract. The contract award to GFL was done on 26th February 2008 with actual systems development beginning thereafter. The development of the system was divided into two phases.

Phase I was composed several modules including, budgeting, planning and activity scheduling, activity monitoring including expenditures, tracking of training, field supervisory activities and meetings, hosting of various kinds of reference data that are key to the planning, budgeting and scheduling processes. Development, commissioning of Phase I was completed in November 2008 and an assessment of the undertaking was done. At the same time some components of phase II had already began.

Phase II was composed of rolling out the external user tool/platform (District Tools), incorporating information from external sources including, HMIS, LMIS and DDSR data. This was to support the M&E unit of the DOMC to be able to further analyse the data for epidemic preparedness and response, provide information to case management on the status of anti-malarial drugs at district and provincial levels. In addition to this the information from periodic activities such as IRS exercise and LLIN distribution and retreatment campaigns was to be included. The report is based on the assessment of the undertaking of Phase II.

The GFL partners have completed the development, training and commissioning of Phase II of the project. The following table outlines the deliverables of phase II and the status.

Deliverable	Description	Level of Completion	Comments
Tracking of Anti-malarials	To provide a component through which DOMC will be able to upload, and use information generated on consumption of anti-malarial drugs.	The system provides an opportunity to upload information based on an agreed template; it provides options for adding anti-malarial drugs; system provides a view of reports at different levels; Component as developed addresses the need described.	The LMIS system has recently started collecting anti-malarial drug availability and consumption information. This information is dependent on good liaison with LMIS to ensure timely and continuous of datasets.
IRS planning and Monitoring	Information on progress towards targets on a weekly basis is required by DOMC. This is based on templates for dataset required at district, Divisional and lower levels.	The system provides options for weekly upload of IRS progress; Districts, provinces and national level have the option of viewing the uploaded information in the form of a report. Component meets the requirements outlined	The component is flexible as the district may not connected to the MIAS may send the same information on an e-mail for uploading at central level.
Uploading Information from DDSR	DOMC needs to review the information collected weekly by DDSR from the epidemic preparedness districts.	The system has provision for uploading DDSR information based on week and year; this can then be viewed as an output on the performance section including a graph on trends; There an option to extract the data for further analysis using other tools. Component meets requirements	This covers the need adequately, other outputs will have to be based on frequency of use.
ITN and IPT Utilization data	DOMC needs to track LLINs and IPT information as it collected by the HMIS as part of routine data.	The component on HMIS data uploads covers the information on LLINs and IPT as documented. Additional option on data extraction for further analysis was added Component is sufficient	This was essentially achieved in Phase I. Further developments on data extraction and uploading were modified in this phase.
External User Tool (District Tool)	Provide an interface for district /other users to access MIAS over the internet.	The district user interface has been developed that allows districts to login and view information that is relevant; Provides options for districts to Report on activities; Upload files on non-routine data (IRS; LLIN distributions); Download templates provided by DOMC. Component meets Requirements	This was essentially the key component of the phase II. Can be used by other external users.
Piloting Of MIAS at District Level	To provide districts with the tools and skills to access MIAS.	Four districts assessed in Phase I were supported with computers and Modems by the DOMC; GFL conducted two day training for the four district teams and this was followed with testing at the district level involving DOMC/MSH-SPS/GFL; The process was successful.	Challenges of connectivity will remain in some areas until there is adequate network coverage by providers. This is beyond the scope of the project.

Recommendation

- There is need to improve the usage of the system by DOMC staff to ensure that it accomplishes the intended purpose.
- Maintenance contract to be developed for an initial period of 12-months renewable.
- Review of the system after 12-months to review new/additional needs.

Conclusion

The GFL Partners have accomplished the task as described in the request for proposal and the award letter. Like all systems there is need for continuous refinement and further development to meet new and additional needs that the DOMC may have over the coming years. This is going to be dependent feedback on the usage and experiences obtained from DOMC and the district users.

Comments by the MSH MIAS Consultant

The above assessment of MIAS Phase II work by the DOMC is comprehensive and accurate. The MIAS project has been completed as per the Terms of Reference set out in awarding the development and implementation contract to GFL Partners. Project completion timelines were extended, mostly because of the inconsistent availability of the critical DOMC staff that had to be involved in the development phase, but also because of DOMC requirements for some changes in the scope of work as the project progressed. GFL Partners were very accommodative of the situation. In line with the requirements of any other ICT system, there will be need put in place a detailed maintenance contract with the system developers to ensure that any system bugs encountered are corrected in a timely manner, and that adhoc requests for modification or improvements to the system can be accommodated.

