

Management Sciences for Health
Rational Pharmaceutical Management Plus

Support to Malaria Control in Rwanda
US President's Malaria Initiative

Work Plan FY07

Rwanda MOP07

Final

2007 – 2008

Background

As one of the highest malaria burdened countries in sub-Saharan Africa Rwanda was selected by the United States Government (USG) in May 2005 to benefit from the President's Malaria Initiative (PMI). The overall five-year \$1.2 billion initiative intends to rapidly scale up malaria prevention and treatment interventions with the goal of reducing malaria-related mortality by 50% with 85% coverage of at-risk groups with four key interventions: 1) artemisinin based combination therapy (ACT), 2) intermittent preventive treatment (IPT) for malaria in pregnancy, 3) insecticide-treated mosquito nets (ITNs), and 4) Indoor Residual Spraying with insecticides (IRS) (MOP 07).

Malaria is the leading cause of morbidity and mortality in Rwanda, with over 1.4 million outpatient cases, 127,000 hospitalizations, and 888 deaths reported in 2005 (PNILP Annual Report 2005). Malaria caused nearly half of the cases and half of the deaths among the ten highest causes of morbidity and mortality in 2005. Children under five years of age are especially vulnerable; in 2005, they represented one-third of consultations and 40% of hospital deaths due to malaria; studies have confirmed *Anopheles Gambiae* and *Anopheles funestus* as the primary vectors. Malaria now occurs even at higher elevations (>1700m) and other areas where it was previously not perceived as a serious public health problem. The increased incidence of malaria - from 3.5% in 1982 to over 48% in 2003 - can be explained by factors such as climatic changes, high population density, changes in patterns of land use, and growing resistance of *Plasmodium falciparum* to standard drugs. Incidence and mortality rates vary by region. (PNILP Annual Report 2005)

The 2005 Demographic and Health Survey (DHS) showed weak case management practices for malaria among children less than five years of age. Among those reporting a fever in the two weeks before the survey, only 12.3% had taken an antimalarial drug and only 2.5% had taken it within 24 hours. In addition, only between four and six percent of those children were given the recommended drug (combination Sulfadoxine pyrimethamine—SP/Amodiaquine or Quinine). In three districts studied in 2005, only 21% of persons with simple malaria and 44% of severe cases were managed correctly in health facilities, and only 59% received a recommended drug.

Whilst there has been some progress in treatment and prevention efforts led by the PNILP (the National Malaria Control Program) during 2006, it is envisaged that the implementation of the PMI Five-Year Strategy and Plan will serve to address the major unmet needs in achieving the Abuja targets. It is expected that the activities funded by the President's Malaria

Initiative will support existing National Malaria Control Program strategies and plans and will complement the funding and efforts of other partners.

In May 2005 USAID/PMI team conducted an initial assessment to identify appropriate areas for PMI investment in Rwanda. An important consideration was that Rwanda is the recipient of Rounds 3 and 5 of Global Fund grant to support the National Malaria Control Program (NMCP), including the procurement of ACTs, training of providers, and establishing a viable distribution system among other activities.

RPM Plus Technical Objectives and Rationale

MSH/RPM Plus program has been working in Rwanda since 2003 with funding from the USAID under PEPFAR and, most recently, under the PMI agenda. The MSH –USAID cooperative agreement RPM Plus will come to an end in September 2008. Under MOP07 MSH will receive a portion of its funding under RPM Plus and the remaining funds will be received under the newly awarded USAID Program Strengthening Pharmaceutical Systems (SPS) to continue and enhance the results achieved under RPM Plus. The SPS Malaria overall strategic objective “Strengthened Health Systems for the appropriate management of malaria” supports the USAID/Bureau for Global Health (BGH) SO5 “Increase use of effective interventions to reduce the threat of infectious diseases of major public health importance”, SO3 “Increased use of key child health and nutrition interventions”, as well as SO2 “Increase use of key maternal health and nutrition interventions.” The overall key result areas of SPS are: 1) improve governance in the pharmaceutical sector, 2) strengthen pharmaceutical management systems to support public health services, 3) contain the emergence and spread of antimicrobial resistance, and 4) expand access to essential medicines.

Activities under each of the following technical objectives emphasize both treatment of children less than five years of age and the management and control of malaria in pregnancy (MIP).

Objective 1: Improve the supply and quality of antimalarials and related supplies

SPS plays a strong role in advocacy for appropriate policies and practices that contribute to the reduction of morbidity and mortality due to malaria. Policies need to be supported by the availability of recommended treatments and mechanisms to access them. A key issue in Rwanda is the procurement and distribution of quality antimalarials in quantities sufficient to meet anticipated demand, in both the public and private sectors. Forecasting of antimalarials and related commodities is required at both the global and country levels: manufacturers of

antimalarials, nets, and rapid diagnostic kits require accurate forecasts to plan their production, and countries need to know how many cases are expected to be treated and how many drugs and commodities to be procured.

Objective 2: Improve the management and use of antimalarials

The appropriate management and use of antimalarials at all levels of the health care system is essential to ensure continuous availability of drugs and to curb malaria morbidity and mortality while reducing the development of resistance. For this, countries should follow standard methodologies and use reliable tools. A particular emphasis needs to be put on follow up of ACT compliance at the facility and community level.

Planned Activities

1. Office Management

This activity includes the field administration and logistics expenditures, including salaries of local staff, rental, transportation costs, office supplies and other related expenses.

2. Technical Activity Coordination and Monitoring

This activity includes technical activity coordination, work plan development, budget monitoring, progress monitoring, reporting, meetings, and communications with partners and collaborators. RPM Plus/Rwanda will receive technical support from RPM Plus Regional Malaria Technical Advisor based in Nairobi as well as from the RPM Plus team based in Arlington, Virginia.

3. Allowances for Expatriate Staff

This activity includes the allowances and benefits of the expatriate staff supporting the RPM Plus/ Rwanda project. The Senior Program Associate functioning as coordinator for malaria activities.

4. Procurement of Artemether and Processing of Payment for WHO Procured Coartem (Objective I)

The PNILP treatment protocol is comprised of three distinct classes of malaria treatment cases, uncomplicated malaria, uncomplicated malaria with digestive troubles, and severe malaria. Uncomplicated malaria with digestive trouble is associated to digestive trouble such as vomiting that impedes a patient's ability to swallow tablets. Left untreated this malaria case most often quickly progresses to a severe case, particularly among children under 5 years old. The National Malaria Country Program as a part of its national strategy to combat the proliferation of malaria included the use of injectable artemether for the treatment of uncomplicated malaria with digestive trouble followed by a normal course of Coartem once the patient is able to swallow. In support of the National Malaria Country Program's treatment strategy, RPM Plus/SPS through PMI is requested to provide assistance to the PNILP with quantifying and forecasting the country's need for injectable artemether, as well as to procure the needed medicine. Quantification assistance provided to the PNILP revealed the need for approximately 60,000 treatments of injectable artemether. Funds allocated in FY06 are used for the procurement of the injectable artemether, while funds from FY07 (MOP07) will cover the management fees of the central medical stores, CAMERWA, for customs clearance, storage and distribution associated with this procurement.

In addition RPM Plus/SPS is requested by USAID to issuing payment of management fees to CAMERWA for customs clearance, storage, and distribution of Coartem procured under PMI through WHO procurement mechanism.

5. Drug Distribution System (Objective 2)

5.1 Strengthening Distribution Mechanisms of antimalarials.

In Rwanda, the WHO is procuring ACTs for the public sector under the PMI agenda. The central medical stores, CAMERWA, is in charge of clearing customs, and managing the storage, repacking and distribution of ACTs from the central level to the district pharmacies, for both PMI and Global Fund sources. RPM Plus will provide TA to CAMERWA to coordinate with implementing partners to distribute ACTs to the health facilities. RPM Plus will assist CAMERWA to provide timely information to health facilities on transport and delivery schedules.

The distribution system relies upon the availability of consumption data and stocks on hand submitted monthly from the health facilities to the districts, and quarterly from the districts to the central level. RPM Plus will support CAMERWA and the PNILP to put in place a data filing system and to conduct regular analysis of the reported data to monitor pipelines (see point 5.2) and elaborate quarterly distribution plans).

In addition, RPM Plus under the PMI agenda and in collaboration with PEPFAR partners will provide technical support to CAMERWA for the implementation of a new active distribution system, that will provide transportation services from central level to the district pharmacies. The operational capacity of CAMERWA will need to be strengthened to handle the expected large quantities of commodities; alternative distribution options such as outsourcing certain supply functions are under consideration by CAMERWA.

5.2 Inventory Management

RPM Plus will assist CAMERWA in conducting regular analysis of the ACTs pipeline, (inventory draw down analysis) to avoid both drug expirations and stock outs. This will include a review of the performance of existing in health facilities drug inventories, logistics, management information system and corresponding tools within the public sector.

5.3 Capacity Building at District and Facility Levels for the Management of Malaria Medicines

RPM Plus will support PNILP to improve existing reporting system, by reinforcing the correct filling of the data management tools and reports at health facility, hospitals and district pharmacy levels. The current reporting/requisition forms will be revised by RPM Plus in collaboration with PNILP. RPM Plus will support PNILP/PTF to train staff involved in reporting at district pharmacies, hospitals and health facilities. RPM Plus will then support PNILP to conduct targeted supervision of district pharmacies and selected health facilities during the reporting period to assure accurate utilization of revised tools. At the same time, RPM Plus will support CAMERWA to improve the distribution data filing for malaria medicines. This will be confirmed by copies of reports/requisitions of all district pharmacies which will be shared with RPM Plus on a weekly basis. RPM Plus will then build the capacity of CAMERWA to analyze data reported by districts.

Sub activities will include:

1. Develop/adapt data collection and reporting tools.
2. Train/recycle the heads of health facilities, pharmacy managers, and data managers in the drug management information system.
3. Support PNILP to supervise the good functioning of the reporting system, and the reliability of the data reported.

6. Laboratory TA (Objective I)

In 2003, RPM Plus was invited by the USAID Mission to examine the capacity of the pharmaceutical and laboratory systems to support the ART national program. In April 2004, RPM Plus shared its assessment findings with the national and international institutions involved in scaling up ART in Rwanda. With respect to laboratory systems, the assessment examined key components of the public laboratory system in Rwanda. These components included policies and standards, infrastructure, human resources, supply of equipment, reagents and laboratory consumables, quality assurance/quality control, referral systems, management information systems and financing.

Key findings included the following: 1) policies and standards were not fully disseminated to health facilities, 2) standard operating procedures (SOPs) existed but had not been tailored to individual laboratories, 3) minimum packages of tests did not include some of the tests required for ART monitoring according to the World Health Organization (WHO) guidelines, 4) most labs had not received training in other areas relevant to ART monitoring within the last two years, including hematology, biochemistry, and quality assurance, 5) the national list of essential lab supplies did not include ART-related lab commodities, and 6) inventory management seemed inadequate as expired reagents were found in 42% of the labs assessed (*Assessment of the Health Commodity Supply Sector in Rwanda, 2003*)

In July 2005, RPM Plus in collaboration with the National Reference Laboratory conducted a situation analysis assessment in an effort to gather qualitative and quantitative data on which to base laboratory policies and as a prerequisite to prioritize strategies and define basic inputs for the implementation of minimum and complementary packages of tests. Results revealed that majority of the health center and hospital laboratories failed to meet the basic inputs; human resource, infrastructure, equipment and supplies necessary for a laboratory to function. The assessment concluded that laboratory support for the new emerging diseases is critical for early diagnosis, appropriate and efficacious use of drugs. It was further determined that laboratory services were neglected at both health centers and hospital laboratories (*Situation Analysis of Rwanda Medical Laboratories, 2005*). As a result of the assessment, in July 2005 RPM Plus provided needed technical assistance to the NRL for the development of the National Medical Laboratory Policy and Laboratory Standard Operating Procedures for Antiretroviral Treatment Program in Rwanda.

Whilst current information on the pharmaceutical sector in Rwanda is generally known and accessible, the current situation with respect to laboratories is largely unknown. In the context of changing malaria epidemiological patterns, the laboratory component requires more attention in both diagnose and case management, particularly in remote areas of the

country. The development and implementation of new malaria treatment protocols necessitate the need for a thorough assessment of the laboratory systems to appropriately support the implementation of the ACT treatment protocols. While RPM Plus assisted with the development of SOPs for ARVs, SOPs specific to antimalarials were not developed. It is absolutely critical that concerted effort is provided to assist the government of Rwanda to re-examine all aspects of the laboratory system in Rwanda including policies and standards, infrastructure, human resources, supply of equipment, reagents and laboratory consumables, quality assurance/quality control, referral systems, management information systems and financing. An analysis of the current situation is particularly necessary in light of the government's implementation of the decentralization policy. The vision of the Ministry of Health is to decentralize responsibilities to the district level, and to progressively integrate the management of the labs and other vertical programs through the district authorities.

The PNILP and NRL would like to focus on revising their quality assurance/quality control (QA/QC) program for malaria. In order to do so, the following steps will be necessary:

1. Convene a small meeting/workshop with NRL, PNILP, CDC, PMI to revise the SOPs for the malaria QA/QC protocol
2. In collaboration with the NRL conduct trainings on SOPs at central and district levels prior to implementation of SOPs
3. In collaboration with the NRL conduct supervision visits to oversee the implementation of SOPs at central and district levels
4. Procure materials needed for implementation of QA/QC program

PNILP and the National Reference Laboratory (NRL) in collaboration with RPM Plus will develop a common action plan detailing specific activities related to laboratory practices. RPM Plus network of experts in the area of laboratory commodities management will be called upon for the development of the action plan and implementation of activities.

RPM Plus PMI Rwanda Workplan. MOP07 Performance Monitoring Matrix

Activities	Products	Outputs	Outcomes	Primary HPSS IRs*	Secondary HPSS IRs*	BGH IRs*	Mission Results	PAWs*
1. Office Management	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2. Technical Activity Coordination and Monitoring	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3. Allowances for Expatriate Staff	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Technical objective 1: To improve the supply and quality of antimalarials and related supplies.								
4. Procurement of Artemether and Processing of Payment of WHO procured Coartem	Technical reports including the procurement orders and contracts	Artemether and Coartem available for use in Rwanda at all levels.	The National Malaria Country Program is implemented without disruptions because Artemether and other Coartem are continuously available	IR1	IR2	BGH IR4	1.2 1.3 2.1 2.4 4.2	PAWC
5. Laboratory TA (central, district, health facility/hospital levels)	To be determined in collaboration with the USAID, CDC, PNILP, and NRL	To be determined in collaboration with the USAID, CDC, PNILP, and NRL	To be determined in collaboration with the USAID, CDC, PNILP, and NRL	TBD	TBD	TBD	TBD	TBD

* Refer to the M&E Reference Binder for a list of Health Policy and System Strengthening (HPSS) Intermediate Results (IRs), Bureau of Global Health (BGH) IRs, and Principle Areas of Work (PAWs)

RPM Plus PMI Rwanda Workplan. MOP07 Performance Monitoring Matrix

Activities	Products	Outputs	Outcomes	Primary HPSS IRs*	Secondary HPSS IRs*	BGH IRs*	Mission Results	PAWs*
Technical objective 2: To improve the management and use of antimalarials.								
6. Drug Distribution System	Revised malaria reporting tools distributed at all facilities (100% countrywide); SOPs for drug distribution from central warehouse to district pharmacies and from district pharmacies to health facilities; inventory processed monthly (reports available); inventory draw down template developed	Report of training at all levels with revised reporting tools; quarterly inventory draw down analysis developed	Quarterly distribution plan developed by PNILP and assigned warehouse managers and are utilized resulting in no stock outs; distribution process established with timeline for all districts (countrywide); 100% of drug orders from health facilities and hospitals honored by district pharmacies; draw down analysis used to monitor and track distribution of drugs	IR2	IR1 IR4	BGH IR4	1.1 1.2 1.4 2.1 2.3 4.1 4.2 4.3	PAWC

* Refer to the M&E Reference Binder for a list of Health Policy and System Strengthening (HPSS) Intermediate Results (IRs), Bureau of Global Health (BGH) IRs, and Principle Areas of Work (PAWs)

RPM Plus PMI Rwanda Workplan. MOP07 Program Activity Matrix

Act. #	Activity	Partners and Collaborators	Staff	Travel (Per Diem Days)	Significant Expenses	Total Cost
1	Office Management	N/A	N/A	N/A	Office maintenance, transportation, equipment, supplies, & admin salaries	\$14,253
2	Technical Activity Coordination	N/A	N/A	Kenya – Kigali Kigali – DC DC – Kigali	Staffing Field Trips	\$87,110
3	Allowances for Expatriate Staff	N/A	N/A	N/A	Expatriate Allowances	\$18,230
4	Procurement of Artemether and Processing of Payment of WHO procured Coartem	PNILP WHO CAMERWA	W. Kabuya M. Muhimpundu A. Rogosch B. Tarrafeta M. Morris	TBD – Kigali	Consultant/ workshop/field trips	\$54,678
5	Laboratory TA (central, district, health facility/hospital levels)	MOH PNILP NRL CDC	W. Kabuya M. Morris B. Tarrafeta SPS technical experts in lab	TBD – Kigali	Staffing/ printing of tools/ consultants	\$28,407

Act. #	Activity	Partners and Collaborators	Staff	Travel (Per Diem Days)	Significant Expenses	Total Cost
6	Drug Distribution System	MOH/PTF PNILP CAMERWA District Pharmacies PSI CONCERN	W. Kabuya G. Ntumba M. Morris B. Tarrafeta M. Muhimpundu D. Muraketete	N/A	Staffing/ consultants for TA	\$97,322
Grand Total Cost						\$300,000