U.S. Agency for International Development

FY 2006 – Report to Committees on Appropriations

USAID Malaria Programming

Report No. 1

February 2006

USAID

FROM THE AMERICAN PEOPLE

Section 598 of the FY 2006 Foreign Operations Appropriations Act:

Of the funds appropriated under the heading"Child Survival and Health Programs Fund", not less than $100,000,00 should be made available for programs and activities to combat malaria: Provided… That no later than 90 days after the date of enactment of this Act, and every 90 days thereafter until September 30, 2006, the Administrator of the United States Agency for International Development shall submit to the Committees on Appropriations a report describing in detail expenditures to combat malaria during fiscal year 2006.

Report No. 1:

Contents:

Acronym List

ACCESS - Access to Clinical and Community Maternal, Neonatal and Women's Health Services
ACTs – Artemisinin-based Combination Therapies
AED – Academy for Educational Development
AFR/SD – Africa Bureau/Office of Sustainable Development
BASICS – Basic Support for Institutionalizing Child Survival
CCM – Country Coordinating Mechanisms
COMPASS – Community Participation for Action in the Social Sectors
DDT - Dichloro-Diphenyl-Trichloroethane
DfID – Department for International Development
DHS – Demographic and Health Survey
DPT3 – The third and final shot in a series against Diptheria, Pertussis and Tetanus
DROC – Democratic Republic Of the Congo
ECSA – Eastern, Central, and Southern Africa
EDAT – Early Diagnosis and Treatment
ENHANSE – Enabling HIV/AIDS and TB and Social Sector Environment Grants
FBO – Faith Based Organizations
GFATM – Global Fund to Fight AIDS, Tuberculosis and Malaria
HBM – Home-Based Management
IDFA – International Disaster and Famine Assistance
IDP – Internally Displaced Persons
IEC – Information, Education, and Communication
IMCI – Integrated Management of Childhood Illness
IPT – Intermittent Preventive Therapy for pregnant women
IRS – Indoor Residual Spraying
ITN – Insecticide Treated Net
JHPIEGO – An international Health organization linked with Johns Hopkins University
JHU/CCP – Johns Hopkins University/Center for Communications Program
LLINs – Long-Lasting Insecticide-treated Nets
MACRO - Macro International Inc.
M&E – Monitoring and Evaluation
MERG – Monitoring and Evaluation Reference Group
MOH – Ministry of Health
MOHFP – Ministry of Health Family Planning
MSH – Management Sciences for Health
NGO – Non-Governmental Organization
NMCC – National Malaria Control Center
NMCP – National Malaria Control Program
NSC – National Security Council
ORC – Opinion Research Company
PFD – Partners for Development
PLWHA – Persons Living with HIV/AIDS
PMI – President's Malaria Initiative
PSI – Population Services International

PVO – Private Voluntary Organization
RACHA – Reproductive and Child Health Alliance
RBM – Roll Back Malaria Partnership
RPM+ - Rational Pharmaceutical Management Plus
RTI – Research Triangle Institute
SP – Sulfadoxine-Pyrimethamine
SWAp – Sector Wide Approach
UNICEF – United Nations Children's Fund
WHO – World Health Organization

Section I: The President's Malaria Initiative
Progress to Date

Background: The Presidential Malaria Initiative (PMI) is a $1.2 billion initiative to reduce malaria-related mortality in 15 African countries by 50 percent through the attainment of 85 percent coverage of vulnerable populations with high-impact interventions. The PMI is an interagency initiative led by USAID and includes participation in implementation or policy by HHS, the State Department, NSC, OMB, and others.

Summary Point: The PMI has gotten off to a fast start. Less than 6 months following the June 30 Presidential announcement, PMI launched lifesaving prevention and treatment activities in all three first-year target countries. A series of high-impact programs are scheduled for launch throughout this fiscal year.

Interagency Teams in the Field: In August, interagency teams in Angola, Tanzania, and Uganda conducted comprehensive needs assessments. In October, detailed planning visits produced first-year country proposals. The first-year plans were reviewed and approved by the PMI Interagency Steering Group in December.

Monitoring and Evaluation: The PMI developed a comprehensive, state-of-the art monitoring and evaluation program to establish baselines and monitor through nationwide sample surveys malaria prevention and treatment coverage rates. Malaria related mortality will be estimated and tracked using demographic surveillance systems and nationwide surveys with verbal autopsies.

Data Management and Transparency: In January 2006, USAID launched a new malaria data management system that is able to report on all USAID malaria inputs, funding allocations, outcomes, and results. On February 10, USAID posted on the PMI Website a detailed report on its FY05 malaria funding. It can be viewed at www.fightingmalaria.gov.

Jump Starts and Early Programs:

- ***Spraying in Angola***: Southern Angola is prone to periodic epidemics of malaria. Using reprogrammed FY05 funds, the PMI purchased insecticide and engaged a subcontractor to help manage all aspects of the spraying campaign in the three southern provinces and in the environs of Luanda. Spraying began on December 12. By early March, a total about 500,000 persons will benefit.

- ***ITN Distribution in Zanzibar***: In Zanzibar, beginning December 19, the PMI distributed 130,000 free LLINs through local public clinics, ensuring full coverage of pregnant women and children under five on the islands. This distribution was accompanied by a communication campaign to educate the population on the proper use of ITNs.

- ***Free Distribution of LLINs and ACTs in Uganda:*** To address the alarming rates of malaria mortality in the internally-displaced person (IDP) camps in northern Uganda, the PMI, in January, began the distribution of more than 270,000 LLINs free of charge to the children and pregnant women. In mid-2006, the PMI will also supply 130,000 doses of ACTs to health facilities in the IDP camps.

- On February 16, 2006, the ***ExxonMobil Foundation provided a gift of $1 million*** to USAID to directly support PMI activities in Angola.

Upcoming PMI Activities:

Re-treatment of nets in 19 districts in Uganda: Beginning in April, the PMI will support the re-treatment of 715,000 existing nets in 19 districts in Uganda. This campaign is expected to benefit 2.2 million households and cover approximately 6 million people.

Health Worker Training on ACTs in Tanzania: In May, the PMI will support the training of Tanzanian health workers on how to use the GFATM-purchased ACTs which are due to arrive in Tanzania in early 2006. This coordinated effort will help introduce ACTs to about one-third of the districts of the country.

Indoor residual spraying in Uganda: Beginning in June, the PMI will support indoor residual spraying in Kabale district in Uganda that will benefit about 500,000 persons.

National ITN Distribution in Angola**:** Beginning in July, the PMI will support the distribution of LLINs to children under five and pregnant women as part of a combined nationwide measles vaccination- ITN distribution campaign. This campaign is expected to provide one ITN to each of about 150,000 pregnant women and 700,000 additional households (850,000 total ITNs), which translates to nationwide coverage of approximately 30% of pregnant women and children under five with a treated net.

Multi-award indoor spraying contract: USAID will issue in early March a Request for Proposals for a multi-award contract with a ceiling of $100 million or more. Contractors will bid on individual task orders for spraying and spraying-related activities.

Section II: Restructuring of USAID Malaria Programs

USAID is the lead agency for implementation of the $1.2 billion, five-year President's Malaria Initiative (PMI). The goal of the PMI is to reduce malaria-related deaths by 50 percent in 15 African countries. It aims to achieve 85 percent coverage with proven preventive and curative interventions, covering 175 million people by the end of five years. The PMI will be results-based, focused, and will exhibit a high level of financial and programmatic accountability. A minimum of 50 percent of this funding will be devoted to life-saving commodities and it will support significant amounts of indoor residual spraying (IRS).

The significant amount malaria programming that does not (or does not yet) fall under the PMI must also conform to reasonable standards of effectiveness and accountability. Beginning immediately, USAID will institute significant changes to its malaria programs that fall outside the PMI. The intention is to combine all malaria activities into a single, strategic, global malaria program. These changes will concentrate funding in fewer countries in order to implement programs on a scale that can achieve demonstrable results, and will significantly increase the proportion of malaria funding that supports IRS and the purchase of life-saving commodities. Additionally, USAID's internal structure will change to ensure that responsibility for performance corresponds directly with decision-making authority over those same programs.

- Beginning in FY 06, at least $24 million (or 40 percent) of USAID's non-directed non-PMI malaria sub-account is designated for the sole, express purpose of providing to country programs life-saving commodities: insecticides and equipment for spraying and insecticide-treated nets; artemisinin-combination therapies and diagnostics; drugs for intermittent preventive treatment of pregnant women; and drugs for severe malaria. This number constitutes a five-fold increase over FY04 in the percentage of funding for commodities. In FY 07, the intention is for this fund to achieve at least 50 percent of non-directed malaria sub-account funds.

- For FY 06, $15 million (or 25 percent) of non-directed non-PMI malaria funds are designated to support exclusively indoor residual spraying activities in malaria-affected countries. This number represents a fifteen-fold increase in actual spending over FY04. (Note: the IRS commodity costs are also accounted for in the $24 million commodities figure described above.)

- Beginning in FY 06, no country malaria program or regionally-managed country program will be funded at less than $1.5 million. In FY 07, the minimum funding for country programs will rise to at least $2.5 million. Exceptions may be made on a case-by-case basis.

- All non-PMI programs will report according to the new malaria data management system established in November 2005, and will be posted on the Web. This data will include program budgets, inputs, outputs, and outcomes.

- All malaria programs will be directed by the Assistant Administrator for Global Health (AA/GH), including all budgeting and policy decisions.

Section III: FY 2006 Malaria Funding allocations

USAID FY 2006 CSH Malaria Budgets

($ THOUSANDS)

revision #2 , 9 February 2006

	FY 2006 Indoor Residential Spraying (IRS)			FY 2006 Commodities, etc			FY 2006 with rescission			
PMI	**Commodities**	**Program**	**Total IRS**	**Commodities**	**Program**	**Total**	**TOTAL**	**%IRS**	**% Comm.**	**Comm $**
Angola	400	1,230	1,630	4,268	1,602	5,870	7,500	22%	62%	4,668
Tanzania	1,200	850	2,050	5,581	3,869	9,450	11,500	18%	59%	6,781
Uganda	500	1,450	1,950	3,965	3,585	7,550	9,500	21%	47%	4,465
AFR/SD	-	-	-	-	170	170	170	0%	0%	-
Global Health*	-	-	-	-	1,330	1,330	1,330	0%	0%	-
Total	**2,100**	**3,530**	**5,630**	**13,814**	**10,556**	**24,370**	**30,000**	**19%**	**53%**	**15,914**
Closeout										
Burundi	-	-	-	-	-	-	-	0%	0%	-
Eritrea	-	-	-	-	-	-	-	0%	0%	-
Guinea	-	-	-	-	-	-	-	0%	0%	-
Liberia	-	-	-	-	-	-	-	0%	0%	-
WARP	-	-	-	-	-	-	-	0%	0%	-
Afghanistan	-	-	-	-	-	-	-	0%	0%	-
India	-	-	-	-	-	-	-	0%	0%	-
Indonesia	-	-	-	-	-	-	-	0%	0%	-
Nepal	-	-	-	-	-	-	-	0%	0%	-
Honduras	-	-	-	-	-	-	-	0%	0%	-
Peru	-	-	-	-	-	-	-	0%	0%	-
LAC Regional	-	-	-	-	-	-	-	0%	0%	-
Non-PMI										
Benin	-	-	-	946	828	1,774	1,774	0%	53%	946
DROC	-	-	-	1,257	1,108	2,365	2,365	0%	53%	1,257
Ethiopia	209	777	986	836	741	1,577	2,563	38%	41%	1,045
Ghana	-	-	-	809	669	1,478	1,478	0%	55%	809
Kenya	2,094	2,292	4,386	538	546	1,084	5,470	80%	48%	2,632
Madagascar	148	49	197	1,045	927	1,972	2,169	9%	55%	1,193
Malawi	-	-	-	1,086	959	2,045	2,045	0%	53%	1,086
Mali	-	-	-	1,386	1,104	2,490	2,490	0%	56%	1,386
Mozambique	2,094	2,292	4,386	1,183	690	1,873	6,259	70%	52%	3,277
Nigeria	-	-	-	1,413	1,248	2,661	2,661	0%	53%	1,413
Rwanda	-	-	-	784	695	1,479	1,479	0%	53%	784
Senegal	-	-	-	1,158	1,010	2,168	2,168	0%	53%	1,158
Sudan	-	-	-	1,055	917	1,972	1,972	0%	53%	1,055
Zambia	2,205	2,427	4,633	1,636	1,390	3,026	7,659	60%	50%	3,841
Cambodia	-	-	-	99	1,380	1,479	1,479	0%	7%	99
Total	**6,750**	**7,837**	**14,587**	**15,231**	**14,212**	**29,443**	**44,031**	**33%**	**50%**	**21,981**
PMI + bilats.	8,850	11,367	20,217	29,045	24,768	53,813	74,031	52%	103%	37,895
Regional & Central										
REDSO	-	-	-	-	197	197	197	0%	0%	-
AFR/SD	-	-	-	-	1,015	1,015	1,015	0%	0%	-
RDM/Asia	-	-	-	296	1,671	1,967	1,967	0%	15%	296
Amazon Init.	-	-	-	641	1,479	2,120	2,120	0%	30%	641
Global Health	-	296	296	739	18,191	18,930	19,226	2%	4%	739
Admin Expenses	-	-	-	-	444	444	444	0%	0%	-
Total	**-**	**296**	**296**	**1,676**	**22,997**	**24,673**	**24,969**	**0**	**0**	**1,676**
Total Non-PMI	**6,750**	**8,133**	**14,883**	**16,907**	**37,209**	**54,116**	**69,000**	**0**	**1**	**23,657**
TOTAL	**8,850**	**11,663**	**20,513**	**30,721**	**47,765**	**78,486**	**99,000**	**21%**	**40%**	**39,571**

Bureau Totals										
AFR	8,850	11,367	20,217	28,946	23,270	52,216	72,434	3	8	35,593
ANE	-	-	-	395	3,051	3,446	3,446	0%	11%	395
LAC	-	-	-	641	1,479	2,120	2,120	0%	30%	641
GH	-	296	296	739	19,521	20,260	20,556	1%	4%	739
Admin Expenses	-	-	-	-	444	444	444	0%	0%	-
Total	8,850	11,663	20,513	30,721	47,765	78,486	99,000	3	8	37,368

***For M&E and staff approved by the Steering Group**
FY06 Approved by Kent Hill, AA/GH (Acting Malaria Coordinator)12/21/05.
Approval from the Malaria Coordinator is required before any revision to this budget.

Section IV: USAID's FY06 Early Obligations for Malaria

(as of February 2006)

Partner	***Amount***	***Country***	***Purpose***
Research Triangle Institute, the Integrated Vector Management Project	$2,400,000	Angola and Tanzania	Indoor residual spraying to protect 500,000 persons in southern Angola (began December 2005).
A toZ Textiles Tanzania	$580,000	Tanzania	Purchase of long-lasting insecticide treated nets for Zanzibar campaign (Dec)
Johns Hopkins University, AFFORD Project	$680,000	Uganda	Net retreatment campaign for 19 districts in Uganda (April 2006)
UNICEF	$2,908,632	Angola	Purchase of insecticide-treated nets for nationwide campaign (July 2006)
WHO	$860,000	Angola	Purchase of Coartem (artemisinin-based combination therapy)
WHO	$700,000	Tanzania	Purchase of Coartem
WHO	$335,000	Uganda	Purchase of Coartem

Section V:

SUMMARIES OF FY 2006 MALARIA PROGRAMMING PLANS FOR NON-PRESIDENT'S MALARIA INITIATIVE MISSIONS AND OPERATING UNITS

BENIN

	FY04	FY05	**FY06**
Total Malaria Funding	$2,000,000	$2,000,000	**$1,774,000**
Commodities	$200,563	$80,000	**$946,000**
Percent Commodities	10%	4%	**53%**

FY06 Partners: To be determined (under procurement)

FY06 Intervention areas:
Treatment: Benin was among the first countries in Africa to implement a comprehensive strategy for malaria, including early recognition and treatment of malaria. Treatment of malaria has been built into Benin's essential child health service delivery program. For several years, USAID/Benin has supported a comprehensive malaria program in Ouémé Plateau on the Nigerian border, where malaria rates are the highest in Benin. In FY 2006, USAID/Benin will focus treatment intervention on expanding diagnosis and treatment of malaria as part of national roll-out of Integrated Management of Childhood Illness (IMCI) protocols.

Prevention: Expanding ITN coverage has been an important element of USAID's strategy in Benin for several years. ITN coverage has increased substantially. According to a set of RBM surveys, in 2000, only 5.4% of households in three health zones had an ITN; by 2004 in six health zones, the percentage of households with an ITN had increased to 41.9%. In FY 2006, USAID will continue to support the social marketing of ITNs to children under 5 and pregnant women, as part of the Government of Benin's overall ITN strategy.

Malaria in Pregnancy: In addition to social marketing of ITNs, USAID also supports the distribution of ITNs to pregnant women as part of prenatal counseling.

Relationship to National Malaria Control Program: USAID's malaria program is closely aligned with Benin's national malaria policy which includes the implementation of the IMCI norms nationwide. The community-based promotion of ITNs developed by USAID/Benin is now included in the national malaria control program.

GFATM: Benin has a grant for malaria under Round 3. USAID is represented on the CCM and helped the government draft proposals for Round 5.

FY06 Commodities: In FY 2006, commodity funds will be used to purchase long-lasting ITNs and ACTs (Coartem®)

DEMOCRATIC REPUBLIC OF THE CONGO

	FY04	FY05	**FY06**
Total Malaria Funding	$2,900,000	$2,050,000	**$2,365,000**
Commodities	$1,393,038	$561,112	**$1,257,000**
Percent Commodities	48%	27%	**53%**

FY06 Partners: Catholic Relief Services, World Health Organization, Malaria Action Coalition, ORC/MACRO (for DHS), a new partner to be determined (under procurement)

FY06 Intervention areas:
Treatment: USAID will assist DROC government to: develop appropriate drug policies and implement plan for ACT therapy; improve drug distribution system; improve malaria case management through community-based primary health care; train clinicians in USAID assisted health zones; and conduct drug efficacy studies.

Prevention: In prevention, USAID will focus on purchasing and distributing LLINs. In addition, USAID will train supervisors and community volunteers for the distribution of nets.

Malaria in pregnancy: USAID will expand use of intermittent preventive therapy (IPT) and ensure availability of IPT drugs; distribute bednets to pregnant women; and conduct information, education, communication (IEC) on use of preventive materials.

Other: USAID also provides technical support to the National Malaria Control Program, including technical advice, implementation of monitoring and evaluation, and operations research to improve program performance.

Relationship to National Malaria Control Program: USAID is the leading donor for malaria in DROC and has been very involved in the development of the national malaria treatment policy and strategic plan. In addition to support for the NMCP, USAID provides implementation support for health services in many health zones, including malaria.

GFATM: USAID is providing technical assistance to the CCM and is the 2nd Vice President of the CCM.

FY06 Commodities: In FY 2006, in DROC, USAID will purchase LLINs, ACTs, SP for IPT, microscopes and kits for the diagnosis of malaria.

ETHIOPIA

	FY04	FY05	**FY06**
Total Malaria Funding	$2,000,000	$2,000,000	**$2,563,000**
Commodities	$213,662	$648,512	**$1,045,000**
Percent Commodities	11%	32%	**41%**

FY06 Partners: World Health Organization, Academy for Educational Development (AED)/NetMark, Regional provinces

FY06 Intervention areas:
Treatment: USAID will purchase and distribute of ACTs and quinine, as well as rapid diagnostic test kits.

Prevention/ITNs: For ITNs, USAID will support targeted subsidies of the purchase of LLINs through the commercial sector to pregnant women attending antenatal clinics in Oromiya and Amhara; provide technical assistance for the local production of ITNs and LLINs; and undertake demand creation of ITN usage activities including communications through mass media and road shows in major urban and peri-urban areas. In addition, USAID will support a targeted subsidy voucher program for LLINs for pregnant women.

Prevention/IRS: USAID will procure IRS equipment and support IRS program costs and training in collaboration with several regional health bureaus.

Relationship to National Malaria Control Program: There is close alignment between USAID's program and the NMCP, including the objectives to prevent malaria through use of ITNs and the development of a sustainable commercial market for ITNs; improving access to treatment through development of peripheral health institutions and procurement of Coartem®; protection of pregnant women through subsidized ITN program; provision of ITNs to populations under humanitarian emergencies, and support for indoor residual spraying (IRS).

GFATM: USAID is an active member of the CCM and supports the CCM Secretariat costs through a multi-donor effort. Ethiopia has malaria grants through Rounds 2 and 5.

FY06 Commodities: In FY 2006, in Ethiopia, USAID will purchase equipment and insecticides (including possibly DDT depending on national program supply needs) for IRS, rapid diagnostic test kits, ACTs, quinine and alternative drug regimens according to national protocols.

GHANA

	FY04	FY05	**FY06**
Total Malaria Funding	$1,000,000	$1,300,000	**$1,478,000**
Commodities	$0	$0	**$809,000**
Percent Commodities	0%	0%	**55%**

FY06 Partners: Academy for Educational Development; EngenderHealth; NetMark; Malaria Action Coalition

FY06 Intervention areas

Treatment: In Ghana, USAID is engaged in the dissemination of the new ACT treatment guidelines and protocols. In addition, USAID is providing support to the Government of Ghana in mass media campaigns to educate the public about the new ACT treatment policy, and the differences from previous medicines. USAID is developing training materials for ACT distribution, and conducting training of health care providers. In addition, USAID is improving quality assurance of malaria treatment at the health facility level.

Prevention: USAID is promoting use of ITNs through the commercial sector. Under this effort, USAID is working closely with ExxonMobil and DfID, which are also contributing funding for ITNs. USAID also supports mass media campaigns for generic ITN use. Between 2003 and 2004, the percentage of households nationwide that owned an ITN (treated within the last 12 months) increased from 3% to 19%.

Malaria in pregnancy: USAID is involved in the development and implementation of malaria in pregnancy pilots in 20 districts. In 2006, USAID will provide support to the nationwide roll-out of IPT, funded by the Global Fund. Specifically, USAID will focus on ensuring a high-level of public awareness about the importance of IPT and to help generate strong demand for effective malaria in pregnancy services.

Relationship to National Malaria Control Program: USAID works closely with the National Malaria Control Program and ensures that USAID-funded activities fall within the parameters of the national strategy and complement work funded by the Global Fund.

GFATM: Ghana received malaria grants from the Global fund in Rounds 2 and 4. USAID is a very active partner in the CCM and along with DfID, represents the donor community on the General Body Committee and the Executive Committee. USAID's program complements Global Fund activities and provides best practices for scale-up.

FY06 Commodities: In FY 2006, USAID/Ghana will purchase ITNs.

KENYA

	FY04	FY05	**FY06**
Total Malaria Funding	$1,200,000	$1,200,000	**$5,470,000**
Commodities	$0	$0	**$2,632,000**
Percent Commodities	0%	0%	**48%**

FY06 Partners: Management Sciences for Health/RPM+, Population Services International, Division of Malaria Control, and a new partner to be determined (USAID/Washington IRS Contract under procurement)

FY06 Intervention areas:
Treatment: USAID supports the Government of Kenya's transition to ACTs as first line malaria treatment, including technical assistance for procurement, quantification, distribution, inventory control, quality assurance, rational pharmaceutical use and monitoring and evaluation. This assistance is a critical complement to Global Fund, which has purchased $10.8 million worth of ACTs expected in country shortly.

Prevention/ITNs: In collaboration with DfID, USAID supports social marketing of LLINs. As a result of this partnership, annual sales of ITNs grew from 635,000 in 2004 to 3.2 million in 2005.

Prevention/IRS: USAID will begin supporting the NMCP's IRS interventions in FY 2006. Specific areas of support are being discussed with the NMCP and will be provided by the new IRS contract currently under procurement.

Relationship to National Malaria Control Program: USAID works in close collaboration with the Kenya National Malaria Program. The National Malaria Control Strategy has four elements: access to prompt and effective treatment; management and prevention of malaria in pregnancy; use of ITNs and other vector control methods; epidemic preparedness and response in 16 epidemic-prone districts. USAID works with the NMCP and other donors to target and coordinate USAID investments under the rubric of this plan.

GFATM: In Kenya, there is a very close association between programs supported by the Global Fund and USAID, and USAID is also a member of the CCM. USAID is supporting the training and roll-out of the new first-line treatment policy, in advance of the shipment of Global Fund purchased ACTs, and USAID's technical support has helped distribute ITNs purchased by the Global Fund and DfID.

FY06 Commodities: In FY 2006, USAID/Kenya will purchase insecticides, equipment and supplies for IRS. Other commodities will be purchased once an agreement with the MOH is reached consisting of a list of their needs.

MADAGASCAR

	FY04	FY05	**FY06**
Total Malaria Funding	$2,000,000	$2,300,000	**$2,169,000**
Commodities	$63,541	$25,409	**$1,193,000**
Percent Commodities	3%	1%	**55%**

FY06 Partners: JHPIEGO/ACCESS; Management Sciences for Health/RPM+; WHO; Population Services International; Chemonics/SanteNet; U.S. Pharmacopoeia

FY06 Intervention areas:
Treatment: USAID provides technical assistance and commodities to the Ministry of Health and Family Planning (MOHFP) in implementing the national malaria policy and supports: social marketing operations to address malaria treatment; home-based care of uncomplicated malaria; and improved access to effective malaria treatment. USAID is providing and promoting effective home-based treatment of children under 5 with appropriate dosages. USAID is also providing technical assistance to the MOHFP to transition from chloroquine to ACT. Activities include training of trainers, pre-service curricula development, and training of health providers.
Prevention/ITNs: USAID is promoting and providing ITN in the private and public sector, especially for pregnant women and children under five. USAID is implementing an extensive behavior change communication campaign to promote the importance of using ITNs to protect against the mosquitoes that cause malaria. The campaign includes mass media, mobile video unit presentations, and product demonstrations and promotions by community-based sales agents. USAID has developed IEC and promotional materials, including radio spots, featuring pregnant women and mothers with children under five. USAID is also working closely with the MOHFP to provide starter stock and training in management of a revolving fund and procurement procedures for future net purchases.
Prevention/IRS: USAID will provide technical support and commodities to assist the MOHFP in the highland IRS initiative.
Malaria in pregnancy: USAID provides training, supervision, and curricula improvement in IPT with SP. USAID is also conducting a supervisory course for health service managers working with providers trained in IPT with SP.
Other: USAID is working with the MOHFP to establish a national Pharmacovigilance Network to detect and evaluate side effects of malarial medication, including ACTs and SP.

Relationship to National Malaria Control Program: USAID's malaria program was developed as an integral component of the national malaria control plan. Common priorities are vector control, malaria in pregnancy, case management, improving community-based management of malaria cases, and transitioning from chloroquine to ACT. USAID, with the Roll Back Malaria (RBM) partners, support the MOHFP in updating malaria control strategies, home case management, vector control, and malaria prevention in pregnant women.

GFATM: GFATM grants support the procurement of ITNs, Rapid Diagnostic Tests, and ACTs in the private and public sector. The grants are complementary to the USAID-supported malaria program. USAID's program supports a vast network of community-based agents who provide education to caretakers and commodities that are procured through GFATM.

FY06 Commodities: In Madagascar, USAID will purchase insecticides, sprayers and spare parts, and safety equipment for IRS; and ITNs.

MALAWI

	FY04	FY05	**FY06**
Total Malaria Funding	$1,500,000	$2,125,000	**$2,045,000**
Commodities	$15,000	$44,044	**$1,086,000**
Percent Commodities	1%	2%	**53%**

FY06 Partners: Centers for Disease Control and Prevention, Management Sciences for Health, Population Services International

FY06 Intervention areas:
Treatment: USAID will provide leadership in malaria research, as per needs indicated by the National Malaria Control Program (NMCP). This includes: conducting analyses of drug quality for SP; continuation of the study of the efficacy and safety of SP for pregnant HIV positive women; analysis of the efficacy of intermittent preventive treatment of malaria in infants and children during routine immunizations; as well as technical leadership in transferring research findings into policies and programs.

Prevention: USAID supports the nationwide ITN distribution program including commercial sector, health facility and community-based distribution.

Malaria in pregnancy: USAID will promote IPT at national and local levels; in research, evaluate the monthly dosing of SP during pregnancy.

Relationship to National Malaria Control Program: USAID/Malawi has been a key partner in the malaria program in Malawi and provides the NMCP with technical assistance including promotion of effective strategies to manage and prevent malaria, ITN distribution, IPT, IEC, malaria research and policy development. In 1993, Malawi became the first country in Africa to change its first-line treatment from chloroquine to SP, with support from USAID. To evaluate drug resistance levels, USAID supported the initial efficacy trials that are now providing baseline information as to whether there is a need to transition to a new first-line drug.

GFATM: USAID is a member of the Malaria Interagency Coordinating Committee and complements GFATM grant activities.

FY06 Commodities: In FY 2006, USAID/Malawi will purchase ITNs (LLINs and bundled nets), and insecticides for net re-treatment.

MALI

	FY04	FY05	**FY06**
Total Malaria Funding	$1,800,000	$2,425,000	**$2,490,000**
Commodities	$548,000	$938,085	**$1,386,000**
Percent Commodities	30%	39%	**56%**

FY06 Partners: CARE as the lead in an NGO consortium; Abt Associates, Ministry of Health, and a new partner currently in procurement

FY06 Intervention areas:
Treatment: USAID will promote prompt recognition and effective treatment of malaria among children under 5 through IEC and training. Because most treatment is offered through health facilities, USAID will also support training and supervision of community health workers to counsel and refer patients to the nearest health facility. USAID also provides support to the Ministry of Health to correctly dispense ACTs at the district and local levels.

Prevention: In line with national guidelines on ITNs for free or highly subsidized distribution, USAID supports ITN distribution through antenatal care centers and immunization programs. ITNs are given to a child upon receipt of DPT3. USAID also supports distribution of retreatment kits. USAID has also supported the development of a viable, sustainable commercial market for ITNs. In 2006, monitoring of activities of commercial distributors will continue.

Malaria in pregnancy: USAID will support the scale-up of directly observed IPT among pregnant women during antenatal visits and ITN distribution to pregnant women.

Relationship to National Malaria Control Program: USAID works in close collaboration with the NMCP, and focuses on two major components of the national plan: prevention and case management.

GFATM: USAID is an active member of the national CCM and recently spearheaded an institutional assessment and review to strengthen the capacity of the CCM to monitor GFATM funded activities. USAID also provides technical assistance to the CCM and to GFATM recipients as needed.

FY06 Commodities: In FY 2006, USAID/Mali will purchase ITNs, net re-treatment kits, and SP for IPT.

MOZAMBIQUE

	FY04	FY05	**FY06**
Total Malaria Funding	$1,500,000	$2,100,000	**$6,259,000**
Commodities	$211,825	$1,480,000	**$3,277,000**
Percent Commodities	14%	70%	**52%**

FY06 Partners: UNICEF, Chemonics, Population Services International, WHO, World Vision, Save the Children, Project Hope, Pathfinder, a new partner to be determined (USAID/Washington new IRS contract under procurement).

FY06 Intervention areas:
Treatment: USAID will update malaria treatment protocols, train health care providers in the new guidelines, and expand Integrated Management of Childhood Illness (IMCI) training to reach national coverage. In Mozambique, IMCI is the key mechanism for detection and treatment of malaria in infants and children
Prevention/ITNs: USAID supports the promotion and distribution of ITNs in four target provinces through a PVO social marketing program working under the Ministry of Health (MOH) and in conjunction with community health councils, local NGOs and other partners. Through this program, subsidized ITNs are sold, and ITNs are provided to the MOH for sale at highly subsidized prices to pregnant women attending ante-natal clinics.
Prevention/IRS: In FY 2006, USAID will support IRS in priority districts under the overall MOH strategy and operational plan. Districts will be selected based on population densities, malaria epidemiology, cost-effectiveness of spraying, geographic priorities of the MOH and USAID and in collaboration with RBM partners and other donors.
Malaria in pregnancy: USAID supports the Provincial Health Departments in Maputo and Gaza Provinces to provide training, supervision and logistical support to include IPT in ante-natal services. In 2006, this will be expanded to Zambezi and Nampula.
Other: USAID also supports improving laboratory capacity by providing basic laboratory equipment including microscopes and training and supervision of laboratory technicians.

Relationship to National Malaria Control Program: USAID works in close collaboration with the National Malaria Control Program and actively participates in the process of elaborating the Annual Operations Plan. USAID supported activities are reflected in the Plan. Mozambique has adopted the Roll Back Malaria Initiative, and follows an integrated vector control approach, including use of ITNs, IRS and environmental control measures to reduce breeding sites. A joint MOH-donor working group for malaria that includes all RBM partners meets regularly to support the revision of the national malaria strategy and coordinate the input of donors and partners.

GFATM: All Global Fund grants (2 on-going for malaria and a new Round 5 grant) to the MOH are channeled through the SWAp Common Fund mechanism – a basket of donor funds – that finances activities approved in the Annual Operations Plan. USAID actively participates in the malaria technical working group to ensure that activities are well coordinated, implemented and monitored.

FY06 Commodities: In FY 2006, USAID/Mozambique will purchase insecticides for IRS, including DDT, sprayers, ITNs, antimalarial drugs and rapid test kits for malaria.

NIGERIA

	FY04	FY05	**FY06**
Total Malaria Funding	$2,400,000	$2,900,000	**$2,661,000**
Commodities	$453,427	$547,000	**$1,413,000**
Percent Commodities	19%	19%	**53%**

FY06 Partners: Society for Family Health, AED/NetMark, COMPASS, ENHANSE

FY06 Intervention areas:
Treatment: Building on USAID's successful work in increasing access to treatment through social marketing and distribution of pre-packaged drugs, USAID supported the drug efficacy and testing survey which led to the development of a new case management policy in Nigeria, and paved the way for the use of ACTs. In 2006, USAID will launch social marketing of artesunate-amodiaquine in Lagos state, which will then be expanded to other states.
Prevention/ITNs: USAID will create demand for and improve access to ITNs through social marketing and building the capacity of local net manufacturers to improve the production, quality and sale of ITNs in Nigeria. (Sales of ITNs increased from 150,000 in 2004 to 1,341,725 in 2005.) USAID is also distributing LLINs to pregnant women through antenatal clinics in collaboration with ExxonMobil through a Global Development Alliance program. On the policy level, USAID continues to advocate for removal of taxes and tariffs on ITNs and has succeeded in reducing taxes substantially.
Prevention/IRS: USAID has been involved in the development of the Integrated Vector Management and Control component of national policy and guidelines, and will identify areas to support once the National plan and guidelines are approved.
Malaria in pregnancy: USAID helped develop the national policy and guidelines on malaria in pregnancy and is currently assisting with the implementation. This includes support for training of trainers at the National and state level, as well as local level training. In addition, USAID distributes LLINs and SP for IPT in health facilities on antenatal days. This approach will be expanded nationwide with Global Fund grant monies.
Other: USAID provides support to the National Malaria Control Program in implementing advocacy activities, disseminating technical documents, and participating in program evaluations and surveys.

Relationship to National Malaria Control Program: USAID/Nigeria is a key member of the National Malaria Control Committee, the local Roll Back Malaria Partnership, and the Insecticide Treated Net and Case Management subcommittees. These committees are responsible for the design and implementation of many aspects of the national malaria program, for advocacy and for providing input into new malaria programs, policies and any other activity that requires national coordination. As a result, USAID-supported programs are very closely aligned with national priorities.

GFATM: USAID/Nigeria was an integral part of the proposal drafting committee for the successful Round 2 and Round 4 proposal, as well as the Round 5 proposal. USAID ensures coordination with other donor activities, and is providing support for malaria activities in five states where there are no Global Fund grant monies.

FY06 Commodities: In FY 2006, USAID/Nigeria will purchase ACTs, through acceleration of the supply of pre-packaged ACTs; SP for malaria in pregnancy; and ITNs.

RWANDA

	FY04	FY05	**FY06**
Total Malaria Funding	$1,000,000	$1,000,000	**$1,479,000**
Commodities	$0	$0	**$784,000**
Percent Commodities	0%	0%	**53%**

FY06 Partners: Malaria Action Coalition, Research Triangle Institute, IntraHealth International, Tulane University, Partnership for Child Health/BASICS

FY06 Intervention areas:
Treatment: USAID is expanding implementation of the home-based management (HBM) of malaria strategy in Rwanda, including strengthening of practice of referral for treatment. As part of the expansion of this strategy, USAID will procure rapid test kits for use in the scale up of HBM in medium and low transmission areas of the country. In high transmission areas, USAID is supporting the Ministry of Health's program to presumptively treat suspected malaria cases using the IMCI algorithm.
Prevention/ITNs: Purchased as part of a Global Fund grant, 1 million ITNs will be distributed in August 2006 as part of a national vaccination campaign. As a partner in this effort, USAID will support mobilization efforts before and after the campaign to maximize coverage and promote the appropriate use of the ITNs.
Prevention/IRS: USAID/Rwanda will assist the MoH with IRS, organizing campaigns twice during the year in advance of the seasonal peaks of malaria episodes. Peaks follow two rainy seasons: the "long rains" are between March and April producing intense exposure in May and the "short rains" that fall October through December yielding a second spike in incidence during January.
Malaria in pregnancy: With assistance from USAID, the MOH is developing a malaria in pregnancy strategy that will expand the use of SP in IPT. USAID will assist with procurement of SP and will assist the MoH with the scale up of the IPT strategy, including training of providers, promotion of ITNs for pregnant women, and development of pre-service training for IPT for practitioners at the National University of Rwanda.

Relationship to National Malaria Control Program: USAID works closely with the Rwandan National Malaria Control Program and has played an integral part in the development of the Naitonal Malaria Strategic Plan (2005-2010) and the Home-based Management of Malaria Strategic Plan. Through the Health Cluster, a national level development partner working group that meets regularly, USAID and others have been able to ensure solid coordination. The Health Cluster includes MoH, USAID, UNICEF, WHO and Belgian Technical Cooperation.

GFATM: USAID/Rwanda is a voting member of the CCM, enabling USAID to provide technical assistance as appropriate, and to program complimentary malaria activities. At present the Global Fund is financing two commodity-heavy activities including: (1) the transition from monotherapies to artemisinin-based combination therapy (Coartem®) as first-line treatment for cases of uncomplicated malaria at health facilities, and (2) national ITN distribution through the vaccination campaign planned for August 2006. There is good coordination with other Global Fund grants in terms of targeting of ITNs for children under five, pregnant women and HIV infected persons and families.

FY06 Commodities: In 2006, USAID/Rwanda will procure SP for use in IPT and rapid diagnostic tests.

SENEGAL

	FY04	FY05	**FY06**
Total Malaria Funding	$2,500,000	$2,500,000	**$2,168,000**
Commodities	$251,857	$259,000	**$1,158,000**
Percent Commodities	10%	10%	**53%**

FY06 Partners: Management Sciences for Health, US Pharmacopeia, University of Dakar, a new partner to be determined – new bilateral under procurement

FY06 Intervention areas:
Treatment: USAID provides for the training and supervision of health care workers to implement ACT at both the clinical and community levels in five of Senegal's 11 regions. In addition, USAID uses information and communication programs to promote appropriate care-seeking behavior. In collaboration with the University of Dakar's Medical School, USAID supports a quality assurance and drug resistance surveillance system to monitor anti-malarial drug efficacy.
Prevention: USAID/Senegal has supported a commercial sector sales social marketing program nationwide for several years. This program includes a voucher system that provides subsidized ITNs to pregnant women and children under five in targeted areas. As a result of these efforts, use of ITNs has increased dramatically over the years. In 2000, 8% of households owned an ITN; in 2004, 39% of households had an ITN. The percentage of pregnant women sleeping under an ITN increased from 6% in 2000 to 31% in 2004. These increases were evenly distributed across rural and urban households and across socio-economic strata. In addition, USAID/Senegal also supports a community-level ITN sales program operating through US PVOs.
Malaria in pregnancy: USAID is expanding the national roll-out of IPT in combination with distribution of subsidized ITNs for pregnant women.

Relationship to National Malaria Control Program: USAID/Senegal's program supports and is consistent with the components of the national malaria control plan. USAID's support is focused in four regions, and will expand to five. USAID participates in all of the technical committees under the NMCP.

GFATM: USAID plays a critical role on and in support of the CCM in Senegal, and works closely with the Global Fund. Global Fund resources are used for many of the same things that USAID funds are used for, but in different parts of the country.

Commodities: In FY 2006, USAID/Senegal will purchase SP for malaria in pregnancy and ITNs.

SOUTH SUDAN

	FY04	FY05	**FY06**
Total Malaria Funding	$2,000,000	$2,500,000	**$1,972,000**
Commodities	$761,996	$1,131,500	**$1,055,000**
Percent Commodities	38%	45%	**53%**

FY06 Partners: John Snow Research and Training, Management Sciences for Health /RPM +, IntraHealth, Centers for Disease Control and Prevention

FY06 Intervention areas:
Treatment: Through subgrants to partnerships of international and Sudanese NGOs, USAID ensures correct diagnosis and treatment of malaria using the Government of South Sudan's new malaria policy, as part of work to expand access to primary health care services. USAID will purchase and distribute ACTs through these NGOs.

Prevention: For prevention, USAID will procure and distribute LLINs through primary health care centers.

Malaria in pregnancy: Malaria in pregnancy is among the seven high impact services provided through primary health care units and centers, and supported by USAID.

Other: USAID will post a long-term technical advisor for malaria in South Sudan; and strengthen surveillance and institutional capacity to implement malaria prevention and treatment in primary health care services.

Relationship to National Malaria Control Program: USAID works closely with the WHO First Steps team, which has created an overall health sector coordination mechanism under the leadership of the Federal Ministry of Health. The mechanism includes multilateral donors, bilateral donors, international NGOs, international and Sudanese FBOs, Sudanese NGOs, and will include private providers when they operate in South Sudan. Through these mechanisms, USAID has assisted with the development of the new malaria policy.

GFATM: USAID participates in the CCM for South Sudan, and works closely with GFATM Principal Recipient to ensure complementarities in programs and avoid duplication of efforts.

FY06 Commodities: In FY 2006, USAID/South Sudan will purchase LLINs and SP. (ACTs will be procured using IDFA funds.)

ZAMBIA

	FY04	FY05	**FY06**
Total Malaria Funding	$4,000,000	$4,000,000	**$7,659,000**
Commodities	$35,000	$190,000	**$3,841,000**
Percent Commodities	1%	5%	**50%**

FY06 Partners: Johns Hopkins University/Center for Communication Programs, Population Services International/Society for Family Health, MOH – Sector Program Assistance Agreement, Research Triangle Institute, Abt Associates, WHO, Measure DHS

FY06 Intervention areas

Treatment: USAID will support appropriate diagnosis and treatment through assistance to the Ministry of Health in integrating malaria diagnosis and treatment with reproductive health and child health services, and through the purchase of microscopes and anemia-testing equipment and supplies.

Prevention/ITNs: USAID will purchase, distribute and promote LLINs for the malaria in pregnancy program. USAID will also support education and behavior change efforts to encourage use of ITNs, focusing on pregnant women and children under five.

Prevention/IRS: USAID will purchase insecticides and spraying equipment to increase IRS coverage in 15 target districts for the 2006/2007 malaria season. USAID will also support the planning, implementation and monitoring of the IRS program at the national and district level, and provide direct funding for IRS at the district level.

Malaria in pregnancy: In addition to distribution of LLINs, USAID will help integrate malaria in pregnancy into national reproductive and maternal health activities and the semi-annual Child Health weeks.

Other: USAID will support a malaria module under the 2006 Demographic and Health Survey.

Relationship to National Malaria Control Program: All of USAID's assistance in malaria is in support of and falls under the National Malaria Strategic Plan. USAID works closely with the National Malaria Control Center (NMCC) to identify activities within Zambia's priorities and annual implementation plans to which USAID can best contribute. USAID and implementing partners are active members of existing committees and technical working groups on malaria-in-pregnancy, IRS, ITNs and others.

GFATM: USAID shares a seat with the DfID on the CCM, representing bilateral donors. USAID has good direct communication and coordination with the Global Fund Portfolio Manager for Zambia. USAID has been extensively involved in the preparation of Rounds 1, 4 and 5 malaria applications to the Global Fund.

FY06 Commodities: In FY 2006, USAID/Zambia will purchase insecticides (DDT and pyrethroids); spray pumps, repair kits, and other IRS equipment; LLINs; and possibly microscopes and anemia testing items to be negotiated with the NMCC.

CAMBODIA

	FY04	FY05	**FY06**
Total Malaria Funding	$1,400,000	$1,400,000	**$1,479,000**
Commodities	$172,877	$34,000	**$99,000**
Percent Commodities	12%	2%	**7%**

FY06 Partners: World Health Organization, Population Services International, RACHA, PFD, US Pharmacopeia

FY06 Intervention areas

Treatment: The interventions focus on monitoring efficacy, quality and rational anti-malarial drug use; establish a rapid notification and response system and intensify drug inspections; improvement of treatment guidelines; increase the awareness of communities on counterfeit drugs and on appropriate treatment seeking behaviors – focusing on Early Diagnosis and Treatment (EDAT); expand social marketing of anti-malarial drugs and Rapid Diagnostic Test kits; improve the capacity of National Malaria Center and MOH/Department of Drug and Food for related to improvement of drug quality and appropriate use; and to improve the capacity of care providers in both public and private sectors for appropriate diagnosis and treatment.
Prevention: Using the village health volunteer network and school students, the program focuses on raising the awareness of the communities living in high-risk zones on malaria prevention in combination with Insecticide Treated Net distribution and re-impregnation.
Malaria in pregnancy: Using the existing strong community based health network and integrated link with Maternal and Child Health activities, the interventions include education to women at reproductive age about complications and dangers of malaria in pregnancy and establish a referral system for pregnant women to receive appropriate and early care and treatment at referral hospitals.
Other: Improve logistic management of anti-malarial drugs as part of essential drugs system as well as facilitate the distribution of ITN from National to community level. Additionally, the program will support operational research to monitor the clinical efficacy, quality and rationale use of anti-malarial drugs.

Relationship to National Malaria Control Program: USAID work closely with National Malaria Center (NMC), donors and NGOs through a coordinating body of NMC Technical working group. In addition, USAID's support through WHO, USP and MSH provides technical assistance to strengthen the capacity of National Malaria Center and Department of Drug and Food of MOH to monitor efficacy, quality and rationale anti-malarial drug use; improve treatment guidelines; and improve of malarial case management among both public and private providers.

GFATM: USAID is a member of GFATM – Country Coordinating Committee (CCC) as well as the GFATM – CCC Sub-committee – who have the mandate to review and approve Country Coordinated Proposals to be submitted to GFATM. Additionally, USAID is also a member of the Principal Recipient Technical Review Team on Malaria who met regularly to coordinate proposal development, M&E system development, and review the progress and financial reports. USAID's program is well coordinated with the GF grant and in some cases complementary.

FY06 Commodities: In FY 2006, USAID/Cambodia will purchase ITNs.

AFRICA (EAST AND SOUTHERN AFRICA) REGIONAL PROGRAM

	FY04	FY05	**FY06**
Total Malaria Funding	$2,000,000	$2,100,000	**$197,000**
Commodities	$0	$0	**$0**
Percent Commodities	0%	0%	**0%**

FY06 Partners: Regional Center for Quality of Health Care, ECSA, and a technical advisor who provides assistance to regional institutions and countries in the region.

FY06 Intervention areas:
Prevention: Advocate for removal of taxes and tariffs for ITNs including policy work with Ministries of Health and Customs Offices.

Malaria in pregnancy: Training of MOH staff in malaria in pregnancy and IPT.

Other: Pharmaceutical management/commodity logistics and training in ACT forecasting; and management of malaria drugs.

Relationship to National Malaria Control Programs: The East and Southern Africa Regional Office works with regional partners, primarily the ECSA Health Secretariat in Arusha, which includes Health Ministries from 14 countries.

LATIN AMERICA AND CARIBBEAN REGIONAL PROGRAM

	FY04	FY05	**FY06**
Total Malaria Funding	$1,755,000	$2,080,000	**$2,120,000**
Commodities	$86,165	$11,000	**$641,000**
Percent Commodities	5%	1%	**30%**

FY06 Partners: Pan American Health Organization, Centers for Disease Control and Prevention, U.S. Pharmacopoeia, Rational Pharmaceutical Management Project, U.S. Naval Medical Research Center Detachment-Peru.

FY06 Intervention areas:
Treatment: Assist national malaria control programs of the 8 countries making up the Amazon Basin, (Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Surinam, and Venezuela), to implement new malaria treatment policies with artemisinin-based combination therapy (ACTs); assist countries in monitoring drug resistance to new treatment drugs; improve national pharmaceutical management systems; purchase microscopes and rapid diagnostic tests for malaria; assist malaria programs with strengthening quality assurance of malaria microscopy in ministry of health laboratories.

Prevention: Assist national malaria control programs in developing rational plans for the use of vector control measures in different epidemiologic settings.

Malaria in pregnancy: Assess the public health impact of malaria in pregnancy in 3 countries in the region to inform decisions about the use of intermittent preventive therapy (IPT).

Other: provide technical support to national malaria control programs as requested, strengthened malaria surveillance, monitoring and evaluation, and operations research to improve program performance.

Relationship to National Malaria Control Programs: USAID is the leading donor for malaria control in the Amazon Region and has been instrumental in helping countries change their national malaria treatment policies to ACTs and all 8 countries now recommend ACTs as their first-line antimalarial drug.

GFATM: USAID will assist countries in the preparation of Global Fund proposals and will respond to requests from CCMs for technical assistance to improve Global Fund performance in countries in the region. USAID will also provide technical assistance to a recently awarded Andean regional Global Fund grant for malaria control in border areas.

FY06 Commodities: In FY 2006, USAID will purchase rapid diagnostic tests, microscopes and kits for the diagnosis of malaria.

ASIA AND NEAR EAST REGIONAL PROGRAM

	FY04	FY05	**FY06**
Total Malaria Fund	$1,950,000	$1,995,000	**$1,967,000**
Commodities	$132,528	$88,433	**$296,000**
Percent Commodities	7%	4%	**15%**

FY06 Partners: World Health Organization, Centers for Disease Control and Prevention, U.S. Pharmacopoeia, Rational Pharmaceutical Management Project, Mekong Roll Back Malaria Initiative.

FY06 Intervention areas:
Treatment: Assist national malaria control programs of the countries making up the Mekong Delta Region to evaluate the implementation of their new malaria treatment policies with artemisinin-based combination therapy (ACTs); assist countries in monitoring drug resistance to new antimalarial drugs and controlling the spread of drug resistance in the region; improve national pharmaceutical management systems; assist countries with strengthening drug quality assurance systems to combat counterfeit and substandard antimalarial drugs, assist national malaria control programs with training of health care providers and merchants to ensure rational use of antimalarial drugs; purchase microscopes and rapid diagnostic tests.

Prevention: Assist national malaria control programs in developing rational plans for the use of vector control measures in different epidemiologic settings.

Other: provide technical support to national malaria control programs as requested; strengthen malaria surveillance, monitoring and evaluation, and operations research to improve program performance.

Relationship to National Malaria Control Programs: USAID is one of the leading donors for malaria control in the Mekong Region and has been instrumental in helping countries change their national malaria treatment policies to ACTs and monitor the effectiveness of those new policies.

GFATM: USAID will assist countries in the preparation of Global Fund proposals and will respond to requests from CCMs for technical assistance to improve Global Fund performance in countries in the region.

FY06 Commodities: In FY 2006, USAID will purchase rapid diagnostic tests, microscopes and kits for the diagnosis of malaria.

AFRICA BUREAU / WASHINGTON OFFICE OF SUSTAINABLE DEVELOPMENT (AFR/SD)

	FY04	FY05	**FY06**
Total Malaria Funding	$2,610,000	$2,759,000	**$1,015,000**
Commodities	$0	$0	**$0**
Percent Commodities	0%	0%	0%

FY06 Partners: World Health Organization/Regional Office for Africa; Academy for Educational Development

FY06 Intervention areas:

Treatment and Prevention: AFR/SD and partners will support the development or adaptation of tools required to deliver effective preventive services (LLIN and/or IRS) and treatment for malaria (ACT) to children under five and persons living with HIV/AIDS (PLWHA). This includes the adaptation of training/supervisory and quality assurance aids for child health (such as IMCI and community IMCI) and basic care for PLWHA to include modules on support for malaria prevention technologies and appropriate use of malaria diagnostics and ACTs. A particular emphasis for AFR/SD will be the expansion of community and home-based treatment for febrile illness using a variety of community agents/resources including private sector care providers and medicine sellers.

Monitoring and Evaluation: AFR/SD and partners will continue to support the improved collection, use and dissemination of epidemiologic and programmatic information for malaria control. AFR/SD promotes the core concepts and indicators defined by the Monitoring and Evaluation Reference Group (MERG) for malaria, and supports training in M&E skill sets through WHO/AFRO.

African Capacity Development: AFR/SD supports partners to expand the pool of African professionals with skills in the various aspects of malaria control and program management. At present AFR/SD is working with partners to develop African-based expertise in the areas of monitoring and evaluation and the community management of febrile illness.

Relationship to National Malaria Control Programs: AFR/SD staff provides limited direct support to national malaria control programs particularly in the area of policy development, strategic planning and assessment. Through partners, particularly WHO/AFRO, AFR/SD provides substantial routine support for program planning, implementation, monitoring and evaluation as well as timely problem solving when assistance is requested by a malaria endemic country.

GFATM: AFR/SD and partners support the development and submission of proposals to the GFATM as well as subsequent implementation and reporting.

FY06 Commodities: AFR/SD investments support the effective use of commodities that are procured by other USAID operating units and international partners.

BUREAU FOR GLOBAL HEALTH

	FY04	FY05	**FY06**
Total Malaria Funding	$29,350,000	$31,249,000	**$19,226,000**
Commodities	$0	$719,162	**$739,000**
Percent Commodities	0%	2%	**4%**

FY06 Partners: Centers for Disease Control and Prevention, World Health Organization, UNICEF, Management Sciences for Health, Malaria Action Coalition, ORC/MACRO, Netmark, Medicines for Malaria Venture, Walter Reed Army Institute of Research, Navy Medical Research Center, Malaria Vaccine Initiative, National Institutes of Health, U.S. Pharmacopoeia, U.S. PVOs under the Child Survival and Health Grants Program, JHPIEGO/ACCESS, Integrated Vector Management Project/Research Triangle Institute, and To be determined (for IRS new procurement).

Research activities: GH will commit $10 million for malaria research in FY 2006 including: the Malaria Vaccine Development Project for the development and testing of candidate malaria vaccines; support to Medicines for Malaria Venture for discovery and development of portfolio of 20 antimalarial drugs, several of which are entering clinical trials; a district-wide, multi-year evaluation of the use of combination therapy with artesunate + sulfadoxine-pyrimethamine in eastern Tanzania; evaluation the cost-effectiveness of IRS in different epidemiologic settings in Africa; evaluation the impact of DDT spraying on mosquito behavior and resistance in field settings in Africa.

FY06 Intervention areas:
Treatment: The Global Health Bureau provides support to USAID missions and national malaria control programs to: implement new national malaria treatment policies based on the use of artemisinin-based combination therapies (ACTs); assist Malaria Medicines and Supply Service and the Global Fund in accurate forecasting of drug needs at the country level; purchase and distribute ACTs; evaluate and strengthen national pharmaceutical management systems for antimalarial drugs; provide training and equipment for antimalarial drug quality testing to identify counterfeit or substandard antimalarial drugs; assist national malaria control programs in developing rational plans for the use of microscopy and rapid diagnostic tests for malaria in different clinical and epidemiologic settings; improve malaria case management in health facilities and through community-based health care workers; and help conduct antimalarial drug efficacy studies in children under 5 and pregnant women.

Prevention: In prevention, GH provides assistance to USAID missions and national malaria control programs in developing plans to conduct indoor residual spraying (IRS) programs with insecticides, including DDT; training and supervising ministry of health staff in IRS; and assisting national malaria control programs in developing rational plans for detection and containment of malaria epidemics. GH supports advocacy for removal of taxes and tariffs on ITNs; transfer of LLIN technology to local producers; surveys on ITN usage; and support to USAID missions and national programs on implementation of ITN programs.

Malaria in pregnancy: GH provides assistance to countries in changing their national policies to intermittent preventive treatment (IPT) of pregnant women and work with national malaria control programs and maternal health programs in implementing the new policy as part of a package of antenatal interventions, including the purchase and distribution of ITNs to pregnant

women through antenatal clinics; ensuring availability of drugs for IPT, and developing and disseminating IEC materials related to malaria prevention in pregnancy.

Other: work with national malaria control programs and other partners, such as the Global Fund, WHO, and UNICEF, in establishing rigorous monitoring and evaluation systems in PMI countries, including nationwide malaria surveys, assist national malaria control programs in strengthening malaria epidemiologic and entomologic surveillance; operations research to improve program performance; assist countries with preparation of Global Fund proposals; support the Roll Back Malaria Partnership Secretariat and working groups on Malaria in Pregnancy, Case Management, ITNs, and Monitoring and Evaluation.

GFATM: USAID will assist countries in the preparation of Global Fund proposals and will respond to requests from CCMs for technical assistance to improve Global Fund performance.

FY06 Commodities: In FY 2006, GH commodity funds will be used to purchase ITNs and drugs to fill in gaps for USAID missions.

Section VI:

PRESIDENT'S MALARIA INITIATIVE – FIRST YEAR MALARIA OPERATIONAL PLANS FOR ANGOLA, TANZANIA AND UGANDA

PRESIDENT'S MALARIA INITIATIVE

Country Action Plan – FY06

ANGOLA

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ABBREVIATIONS

ACT – artemisinin-based combination therapy
AM-LUM – artemether-lumefantrine
ANC – antenatal clinic
AQ – amodiaquine
ARC – American Red Cross
AS - artesunate
CQ – chloroquine
DHS – demographic and health survey
FBO – faith-based organization
GDP – gross domestic product
GFATM – Global Fund to Fight AIDS, Tuberculosis, and Malaria
GoA – Government of Angola
IDP – internally displaced persons
IEC – information, education, communication
IMCI – integrated management of childhood illnesses
IPT – intermittent preventive treatment
IRS – indoor residual spraying
ITN – insecticide-treated net
JICA – Japanese International Cooperation Agency
KAP – knowledge, attitudes, and practices
LLIN – long-lasting insecticide-treated net
MICS – multiple indicator cluster survey
MIS – malaria indicator survey
MoH – Ministry of Health
NMCP – National Malaria Control Program
NGO/FBO – non-governmental organization/faith-based organization
OVC – orphans and vulnerable children
PMI – President's Malaria Initiative
PSI – Population Services International
RBM – Roll Back Malaria
RDT – rapid diagnostic test
SP – sulfadoxine-pyrimethamine
ULV – ultra-low volume
UNDP – United Nations Development Programme
UNICEF – United Nations Childrens' Fund
WHO – World Health Organization

EXECUTIVE SUMMARY

In July 2005, the United States Government announced that Angola had been selected as one of the first three countries in a new five-year, $1.2 billion initiative to rapidly scale up malaria prevention and treatment interventions in high-burden countries in sub-Saharan Africa. The goal of the President's Malaria Initiative (PMI) is to reduce malaria mortality by 50% by achieving 85% coverage of key prevention and treatment interventions in each country.

Angola's health infrastructure was severely damaged during the civil war and it is estimated that only about 30% of the population has access to government health facilities. Malaria is a major health problem, accounting for an estimated 35% of the overall mortality in children under five, 25% of maternal mortality and 60% of hospital admissions for children under five. Malaria transmission is highest in northern Angola, while southern provinces are epidemic-prone.

No up-to-date information is available on nationwide coverage of key malaria prevention and control measures. Although use of artemisinin-based combination therapy (ACT) and intermittent preventive treatment (IPT) for pregnant women have been adopted as official policies, they are only being used at scattered sites, and the Ministry of Health pharmaceutical management system is extremely weak. Insecticide-treated bed net (ITN) coverage rates are estimated to be less than 10% and no indoor residual spraying (IRS) has been done by the National Malaria Control Program (NMCP) for more than 10 years.

Angola is recipient of a $27.5 million grant from the Global Fund to Fight AIDS, Tuberculosis and Malaria, which is purchasing large quantities of commodities. UNICEF has been a major supporter of distribution of ITNs and the World Health Organization has been a primary source of technical assistance to the NMCP. Excellent opportunities also exist for partnerships with large international companies, such as Exxon-Mobil, in malaria control.

To achieve the ambitious targets of the PMI in Angola, the following major activities are proposed for the $7.5 million of funding during Year 1 of the Initiative:

1. A combined epidemiologic-entomologic investigation to establish the potential for malaria transmission to target in the most cost-effective fashion the use of IRS and ITNs to populations at risk of malaria ($130,000);
2. Support to large-scale, free ITN distribution to pregnant women and children under five as part of a nationwide measles immunization campaign in June 2006 ($2,908,000);
3. Continued support to social marketing of subsidized and full-cost ITNs to persons who can afford them in urban areas ($600,000);
4. Indoor residual spraying (with an insecticide to be determined) in epidemic-prone areas of southern Angola ($1,400,000);
5. Strengthening of malaria diagnosis ($165,000);
6. Strengthening of all aspects of the Ministry of Health antimalarial drug management system to ensure safe and effective use of ACTs ($100,000);
7. Delivery of malaria preventive and curative services, including ACTs, through non-governmental/faith-based organizations in areas that are underserved by the Ministry of Health ($1,360,000).

PRESIDENT'S MALARIA INITIATIVE

In July 2005, the United States Government announced a new five-year, $1.2 billion initiative to rapidly scale up malaria prevention and treatment interventions in high-burden countries in sub-Saharan Africa. The goal of this Initiative is to reduce malaria-related mortality by 50% after three years of full implementation in each country. This will be achieved by reaching 85% coverage of the most vulnerable groups---children under five years of age, pregnant women, and people living with HIV/AIDS---with proven preventive and therapeutic interventions, including artemisinin-based combination therapies (ACTs), insecticide-treated nets (ITNs), intermittent preventive treatment (IPT) of pregnant women, and indoor residual spraying (IRS).

The Initiative will begin in 2006 in three countries, Angola, Tanzania, and Uganda. Proposed funding levels are $30 million in FY06, $135 million in FY07, $300 million in FY08 and FY09, and $500 million in FY10. The aim is to cover a total population of 175 million in up to 15 countries by 2010.

In implementing this Initiative, the United States Government is committed to working closely with host governments and within existing national malaria control strategies and plans. Efforts will be coordinated with other national and international partners, including the Global Fund to Fight AIDS, Tuberculosis, and Malaria (GFATM), Roll Back Malaria (RBM), the World Bank Malaria Booster Program, and the non-governmental and private sectors, to ensure that investments are complementary and that RBM and Millennium Development goals can be achieved.

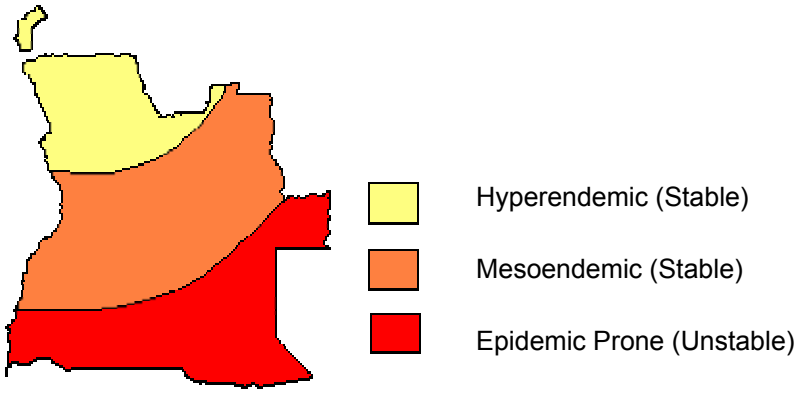
This document presents a detailed one-year implementation plan for the President's Malaria Initiative (PMI) in Angola. It is based on the PMI 5-Year Strategy and Plan and briefly reviews the current status of malaria control policies and interventions in Angola, identifies challenges and unmet needs if the targets of the PMI are to be achieved, and provides a description of proposed Year 1 activities under the PMI.

MALARIA SITUATION IN ANGOLA

Angola recently emerged from almost three decades of civil war that severely impacted its development, particularly the health sector. The country has an estimated population of 17 million people in 19 provinces and 164 municipalities (districts). It is estimated that 80% of the health facilities were damaged or destroyed during the war and that the existing health system covers only about 30% of the Angolan population. The remaining health infrastructure is limited by a lack of qualified and motivated health staff outside the capital, weak drug and medical supply and management systems, and a weak primary health care network. Under five mortality is one of the highest in the world, 250 deaths per 1,000 live births, and maternal mortality is estimated to be 1,280 per 100,000 live births.

Malaria is hyperendemic in the northern part of Angola and along coastal lowlands of the Atlantic Ocean. The highlands of central and the southern provinces of Angola have a lower incidence, with a mesoendemic unstable profile. The southern provinces bordering Namibia are

epidemic-prone areas. The peak malaria transmission season extends from March to May, with a secondary peak in October/November. *Plasmodium falciparum* is responsible for >90% of all infections. The primary vectors are *Anopheles gambiae* ss and *A. funestus.*



Malaria accounts for 35% of the overall mortality in children under five, 25% of overall maternal mortality and is the cause of 60% of hospital admissions for children under five and 10% for pregnant women. The Government of Angola (GoA) has prioritized 59 of the 164 municipalities (districts) in the country, which account for 70% of the total population, as priority areas for improving health care (Figure 1).

NATIONAL MALARIA CONTROL PROGRAM STRATEGY AND ACTIVITIES

The National Malaria Control Program (NMCP) has 11 staff members based in Luanda and a single malaria officer in each province; there are no malaria control workers at the municipal or lower levels. A new National Malaria Control Strategy for the period 2005 to 2010 has recently been developed with assistance from the WHO and UNICEF.

Malaria diagnosis and treatment: The treatment of malaria in most MoH facilities in Angola is based on clinical diagnosis. Malaria microscopy is only available in hospitals and larger health centers in urban areas and the quality of diagnosis is unknown. Rapid diagnostic tests (RDTs) are used in some health facilities supported by non-governmental organizations/faith-based organizations (NGO/FBOs). The new National Malaria Control Strategy for 2005-2009 proposes to make malaria microscopy available for the diagnosis of patients with fever and suspected malaria in all health facilities with a laboratory and electricity. As yet, there is no firm national policy about the use of RDTs, but it is expected that their use would be reserved for situations where microscopic diagnosis is not readily available. Clinical diagnosis would continue to be used in facilities without laboratory support. Although not mentioned in the new Strategy, it is likely that in areas with stable transmission, children under five with symptoms suggestive of malaria would be treated presumptively.

Artemether-lumefantrine (AM-LUM; Coartem®) was adopted as the new first-line drug for the treatment of uncomplicated *P. falciparum* malaria in September 2004, but the new policy has not yet been implemented. Until that time, national guidelines recommend the use of amodiaquine

monotherapy, although many health facilities continue to use cholorquine. According to the new policy, amodiaquine-artesunate will be used as an alternative if adequate supplies of AM-LUM are not available. Quinine is the first-line drug for the treatment of severe malaria and in pregnant women.

Intermittent preventive treatment of pregnant women: IPT with two doses of SP was approved as a national policy in September 2004. This policy applies to the entire country, including Luanda and the epidemic-prone areas in the south. Although IPT has not yet been implemented in MoH facilities, it is already being used by some NGO/FBOs in the health facilities that they support.

Insecticide-treated nets: A draft NMCP ITN strategy supports a market segmentation approach, consisting of free distribution of nets to pregnant women and children under five, with subsidized distribution to the general population and commercial sector distribution in urban areas. It is proposed that 70% of nets be distributed free of charge; 20% through subsidies, and 10% at full price through commercial markets, mainly in urban areas. Because of very low re-treatment rates for conventional nets, the GoA encourages the distribution of long-lasting insecticide-treated nets (LLINs). Nets are classified as luxury goods and are subject to a tariff of up to 50%; however, UNICEF and Population Services International (PSI) have waivers and do not pay any tariffs.

Indoor residual spraying: Only limited IRS has been carried out by the NMCP during the last 10 years. The newly developed National Malaria Control Strategy for 2005-2009 supports the use of IRS for malaria prevention in epidemic-prone areas of the southern provinces of Namibe, Cunene, Huila, and Cuando Cubango and in the capital, Luanda. Synthetic pyrethroids are the insecticides of choice. The Government of Angola has banned the use of DDT, although it is possible that an exception would be made along the Angolan-Namibian border, as the Namibian National Malaria Control Program currently relies on DDT for IRS. Insecticides are not subject to tariffs.

Epidemic detection and containment: The National Epidemiological Surveillance System collects weekly reports on clinically diagnosed cases of malaria from the four epidemic-prone provinces in the south. Since not all districts report on a regular basis and there are delays in releasing reports to the NMCP, these data are of limited use for the detection and control of epidemics. None of the provinces or districts has an epidemic control plan or stockpiles of drugs, supplies, and equipment for a rapid epidemic response.

In January 2005, Angola received approval for a 2-year, $27.5 million malaria grant from the Global Fund to Fight AIDS, Tuberculosis and Malaria. This grant will focus on the 59 high priority districts targeted by the MoH for improved health care (70% of Angola's population). The objectives are to increase coverage with ACTs, IPT, and ITNs to 60% of the population in those 59 districts and to build capacity within the NMCP. Price-Waterhouse-Cooper is the Local Funding Agent and UNDP is the Principal Recipient, with WHO, UNICEF, and PSI as Sub-Recipients.

CURRENT STATUS OF MALARIA INDICATORS

No accurate or up-to-date information is available on nationwide coverage of key malaria prevention and control measures. The most recent large-scale health survey in Angola was a Multiple Indicator Cluster Survey (MICS) conducted by UNICEF in 2000. Artemisinin-based combination therapy with AM-LUM and IPT with sulfadoxine-pyrimethamine (SP) have not yet been officially implemented in MoH facilities and coverage rates can be estimated to be <1-2%. A survey carried out in 5 provinces where UNICEF has been working showed that approximately 20% in pregnant women and children under 5 slept under a bed net (treated and untreated), but nationwide rates are undoubtedly much lower and coverage rates with ITNs can be estimated to be <5%. The MoH has not conducted large-scale IRS for more than 10 years. The following table provides the best estimates of nationwide coverage with these key interventions currently available for Angola.

Intervention	Estimated national coverage
Artemisinin-based combination therapy (ACT)	<1-2%
Bed nets	<10%
Insecticide-treated nets (ITNs)	<5%
Intermittent preventive treatment (IPT)	<1-2%
Indoor residual spraying (IRS)	<1-2%

GOAL OF PRESIDENT'S MALARIA INITIATIVE

By 30 September, 2011, reduce malaria-related mortality in Angola by 50%

TARGETS OF PRESIDENT'S MALARIA INITIATIVE

Although the WHO reports that 100% of Angola's population is at risk of malaria, it is highly unlikely that there is malaria transmission in urbanized areas of the capital Luanda, where 20-25% of the country's population resides. Thus, until more definitive information becomes available, it is reasonable to assume that about 85% of the population is at risk of malaria.

After three full years of implementation (i.e., by 30 September, 2011), the PMI will provide accelerated resources to achieve the following targets in populations at risk of malaria in Angola:

1. 85% of children under five (in areas not covered by IRS) will have slept under an ITN the previous night;
2. 85% of pregnant women (in areas not covered by IRS) will have slept under an ITN the previous night;
3. 85% of pregnant women will have received two or more doses of SP for IPT during their pregnancy;
4. 85% of houses targeted for indoor residual spraying will have been sprayed (the number of houses to be sprayed after three years of full implementation will be

determined by an epidemiologic-entomologic study of malaria risk to be carried out in 2006);

5. 85% of children under five with suspected malaria will have received treatment with an antimalarial drug in accordance with national malaria treatment policies within 24 hours of the onset of their symptoms.

EXPECTED RESULTS – YEAR ONE

At the end of Year 1 of the PMI in Angola (31 December, 2006), the following targets will have been achieved:

Prevention:

- At least 1 million LLINs will have been distributed to families with children under five and/or pregnant women. This is expected to translate to nationwide coverage of >30% in pregnant women and children under five;
- At least 85% of houses targeted for indoor residual spraying (IRS) during Year 1 will have been sprayed.

Treatment:

- Malaria treatment with ACTs will have been implemented in health facilities in all 59 MoH priority districts (70% of Angola's total population);
- At least 35% of children under five with suspected malaria attending health facilities in the 59 MoH priority districts will have received treatment with an ACT. This translates to nationwide coverage of 25% in children under five;
- Intermittent preventive treatment with SP will be implemented and in use in all 59 MoH priority districts (70% of Angola's total population);
- At least 35% of pregnant women attending health facilities in the 59 priority districts will receive IPT. This translates to nationwide coverage of 25% in pregnant women.

INTERVENTIONS - PREVENTION

General Epidemiology/Entomology - Targeting Use of IRS and ITNs

Current Status/Challenges and Needs:

The risk of malaria transmission in central areas of the capital, Luanda, which has 20-25% of the total population of Angola, may be so low that investments in malaria prevention measures (ITNs, IRS, and IPT) are probably not warranted. The same may be true of some areas in the four southern provinces of Namibe, Huila, Cunene, and Cuando Cubango, which have a history of epidemic malaria. To target the use of IRS and ITNs in the most cost-effective fashion in Angola, accurate, up-to-date information is urgently needed on the geographic distribution and seasonality of malaria transmission in the city of Luanda and the four southern provinces. Without this information, the time and resources of the NMCP and its partners may be wasted

providing expensive malaria protection measures to populations living in areas where there is little or no risk of malaria. For this reason, an integrated epidemiologic-entomologic investigation of the risk of malaria in the greater Luanda area and the four southern provinces is one of the highest priority activities for the first year of the PMI in Angola.

Proposed USG Component: ($130,000)

In collaboration with the NMCP, PMI-supported entomologic investigations led by by the CDC should establish the potential for malaria transmission in Luanda and selected districts representative of the southern provinces. At the same time, epidemiologic studies should focus on defining the seasonal incidence of laboratory-confirmed malaria infections in the same areas. This information will make it possible to target in a more rational and cost-effective fashion the use of IRS and the distribution of ITNs in these areas. These baseline data will also help in evaluating the effectiveness of future interventions directed against the mosquito vector and/or the parasite in these areas.

Proposed activities during Year 1 are as follows:

1. Define the risk of malaria transmission in the city of Luanda and the four southern provinces to allow better targeting of IRS and ITN distribution. This will include identifying the anopheline mosquito vectors and their seasonal abundance, and insecticide resistance status over a 12-month period encompassing both rainy and dry seasons. Longitudinal monitoring of vector populations will be conducted in selected districts in the southern provinces. Meteorological data will also be collected and health facility records reviewed to relate to previous malaria epidemics. Parallel epidemiologic studies will be carried out to determine the incidence of parasitologically-confirmed malaria infections;
2. Establish entomologic expertise within the NMCP capable of monitoring resistance to insecticides in areas where LLINs and/or IRS are used; and
3. Together with the NMCP and other partners, develop a rational and sustainable malaria vector control plan with appropriate objectives and targets

Insecticide-treated nets (ITNs)

Current Status/Challenges and Needs:

No national data exists on bed net/ITN coverage or usage, but a MICS survey conducted by UNICEF in 2000 estimated household ownership at 10%. A more recent survey carried out in areas of Luanda, Benguela, Cabinda and Bengo Provinces where UNICEF had been working showed that 22% of children under five and 18% of pregnant women slept under a net. Re-treatment rates of nets at UNICEF/MoH-supported community treatment centers are <10%. A recent study by the Angolan MoH found that 18% of the anophelines tested in Cabinda Province in northern Angola were positive for the kdr marker of resistance to pyrethroid insecticides.

The existing ITN distribution system is intended to reach approximately 60% coverage in 43 of the 59 priority districts that account for 70% of Angola's population. With the approved Round

3 GFATM grant, and a target of 85% coverage for the PMI, it is estimated that there will be a shortage of approximately 1.2 million ITNs in 2006 and 4.4 million by 2010.

Proposed USG Component: ($3,508,000)

Since poverty is so widespread in Angola, the PMI will support the existing MoH strategy of providing 70% of nets free of charge to highly vulnerable groups (pregnant women, children under five, persons living with AIDS), 20% to those same groups through subsidies at health facilities in urban areas, and 10% at full cost through the commercial market in urban areas. The latter two activities are managed principally by PSI. The goal of this market segmentation approach is to ensure that free nets to go the most needy populations, while persons who can afford to pay some or all of the cost of a net do so. Increasing ITN coverage rates is a high priority for both the NMCP in their National Malaria Strategic Plan for 2005-2009 and for the GFATM Round 3 grant, and activities funded by the PMI will be closely coordinated with those of the NMCP and its partners.

As only 30% of the Angolan population has access to health facilities, alternative methods will have to be found to target ITN distribution to pregnant women and children under five. Due to very low net re-treatment rates, priority under the PMI should be given to the purchase of LLINs (preferably Permanet® nets, which do not require reactivation after each wash). Since many of the conventional bed nets distributed in Angola before 2004 are now at least 2-3 years old, efforts to retreat those nets would not be cost-effective. Since the same family of insecticides will be used for both IRS and ITNs, the NMCP should have capacity for insecticide resistance monitoring.

Proposed activities during Year 1 are as follows:

1. Collaborate with other partners to support distribution of free LLINs to children under five and pregnant women as part of the nationwide measles vaccination campaign scheduled for June 2006. Approximately 420,000 LLINs will be purchased and imported free of tariffs through UNICEF for this campaign (US$ 2,908,000);
2. Assist other partners in a post-measles campaign evaluation of the integrated LLIN distribution to measure acceptance and correct usage of the bed nets at periodic intervals after June 2006;
3. Continue to support the purchase and distribution of subsidized LLINs by PSI through health facilities and full-cost nets through commercial sources in urban areas not targeted by the nationwide measles immunization-ITN campaign and where residents are better able to afford the cost of an ITN (US$ 600,000: $400,000 for ITNs and $200,000 for social marketing);
4. Support efforts of the MoH and other partners to improve ANC utilization rates (Note: this will also facilitate IPT coverage, diagnosis and treatment of acute malaria in pregnant women, and monitoring and evaluation of interventions related to malaria in pregnancy); and
5. Assist the MoH and other partners in developing IEC materials, including posters, radio spots, and written and verbal instructions, to promote the correct use of LLINs and the need for reactivating Olyset® nets after each wash.

Indoor residual spraying (IRS)

Current Status/Challenges and Needs:

The MoH is supportive of the use of IRS for malaria prevention in the malaria epidemic-prone southern provinces and in the city of Luanda. Indoor residual spraying activities have been very limited in Angola over the last 10 years and NMCP staff will need training and logistic and management support before a large-scale IRS campaign could be undertaken. Insecticides are not subject to tariffs, but a clearing agent's fee must be paid at the port of entry.

Although the GoA has banned the use of DDT, an exception may be made within a 10-25 mile zone along the Angolan-Namibian border, as Namibia presently uses DDT in its malaria control program. Evidence from South Africa indicates that the effective lifetime of pyrethroids on the walls of traditional houses is significantly shorter than that of DDT. It is not yet known whether this is the case in southern Angola. A study by the MoH in Cabinda Province in northern Angola showed that 18% of the anophelines tested were positive for the kdr marker of resistance to pyrethroid insecticides.

Proposed USG Component: ($1,400,000)

Indoor residual spraying has proven to be highly effective in reducing malaria morbidity and mortality in several studies in Africa. The use of IRS is a component in the Angolan NMCP and is included in the Angolan Round 3 GFATM proposal. With 25% of the population of Angola living in Luanda, it will be essential for the cost-effective allocation of IRS resources to determine the risk of malaria transmission in the urban and periurban areas of the capital. The same is true in the 4 provinces bordering Namibia, where epidemic malaria has been reported. The PMI should support these integrated epidemiologic-entomologic investigations and take advantage of the opportunity they afford to build capacity within the NMCP. Since IRS is included in the National Malaria Strategic Plan for 2005-2009 and for the GFATM Round 3 grant, activities funded by the PMI will be coordinated with those of the NMCP and other partners.

Ninety percent of houses in southern Angola are constructed with traditional materials and studies in South Africa have shown that the effective lifetime of pyrethroids on such surfaces is significantly shorter than that of DDT. For this reason, high priority should be given to conducting comparative trials of the effective lifetimes of insecticides on local structures, so that in future spraying activities, the decision on which insecticide to use can be based on solid scientific evidence. While DDT use is currently prohibited in Angola, if an exemption is granted by the MoH, DDT will be included in the comparative insecticide trials.

Proposed activities during Year 1 are as follows:

1. Assist the NMCP and other partners with an IRS campaign in epidemic-prone areas of the Provinces of Namibie, Huila, and Cunene from December 2005-February 2006. As part of this effort, MoH/NMCP sprayers, spray team leaders, and supervisors will be trained in the management and conduct of large-scale IRS operations. In addition, printed IEC materials describing the benefits of IRS and responsibilities of homeowners will be prepared, field tested and distributed. The areas to be sprayed and the choice of insecticide for the IRS campaign in late 2006 will be based on the general entomologic/epidemiologic studies planned for Luanda and the four southern provinces; and
2. Assist the NMCP in an evaluation of the effective lifetime of different insecticides on traditional surfaces in southern Angola. If the effective lifetime of DDT is significantly longer than that of alternative insecticides, the PMI will work with the NMCP, the MoH, and other partners to reconsider the GoA ban on DDT for use in IRS in the south. (Note: this activity will be coordinated with the general entomologic studies described above).

INTERVENTIONS – CASE MANAGEMENT

Malaria diagnosis and treatment (Case management)

Current Status/Challenges and Needs:

Malaria diagnosis: Only 10-20% of all malaria diagnoses in Angola are based on microscopic examination and the quality of those diagnoses is unclear. The new National Malaria Control Strategy for 2005-2009 proposes to expand malaria microscopy to all health facilities with a laboratory and electricity. Microscopic confirmation of diagnoses will also be recommended for patients with severe malaria and those with symptoms of malaria who have not responded to presumptive treatment. Although not stated as such in the Strategy, it appears that in areas with stable transmission, children under five with symptoms suggestive of malaria would be treated presumptively.

Experience with use of rapid diagnostic tests (RDTs) for malaria diagnosis in Angola is very limited at present, but it is expected that their use will increase significantly, as the GFATM Round 3 grant is purchasing more than 500,000 tests in Year 1 alone.

Pharmaceutical management: Many of the essential entities and processes required for ensuring access to safe, effective and affordable quality medicines in Angola, such as a national drug registration and pharmacovigilance systems do not exist or are non-functional. Procurements of drugs are often delayed. The National Hospital in Luanda, the four provincial hospitals, and provincial governments receive their budgets directly from the general budget and can use these funds to purchase medicines. In addition, lower-level health facilities in areas with access to private sector vendors have been supplementing their MoH stocks with locally purchased medicines purchased using funds generated from service fees. There are no controls over the quality of drugs purchased from these private sector vendors. UNICEF has commissioned an

evaluation of the national pharmaceutical management system that should be finalized in September 2005.

No formal distribution plan for essential medicines currently exists, probably contributing to the periodic shortages of essential medicines. Storage facilities for medicines at the provincial and municipal levels are often inadequate. Essential medicines, including antimalarials (currently AQ and quinine), are provided in kits. Health facilities receive a given number of kits according to expected utilization of services, which is based on past drug distribution rather than actual drug consumption. The absence of reliable information on health services utilization and the populations of catchment areas contribute to the reported shortages of essential medicines at the facility level.

Malaria treatment: Although ACTs were approved as the first-line treatment for uncomplicated malaria in Angola in October 2004, nearly all MoH facilities are still using CQ or AQ. In fact, many health workers are only vaguely aware of the change in national malaria treatment policy.

No detailed plan for AM-LUM implementation exists, but with approval of the Round 3 GFATM grant, it has been decided that combination therapy will be first introduced in the 59 districts prioritized by the MoH. Artemether-lumefantrine procured with GFATM funds will be distributed via the existing MoH system in separate kits, although it is not clear how this will be coordinated with the existing kit distribution.

The stated objective of the GFATM Round 3 proposal is to ensure access to ACT treatment for 60% of the at-risk population in the 59 priority districts by the end of the two-year grant. Quantification of ACT needs was based on the best available data: extrapolations from the 1971 census to obtain estimates of the target population in the 59 districts, the estimated number of malaria episodes per year, plus the known rate of health services utilization (both MoH and NGO/FBO facilities). The first deliveries of AM-LUM are expected to arrive in Angola in December 2005.

Estimates of Artemether-lumefantrine Needs – 2005-2006
(based on 60% coverage of the population in the 59 priority districts - 5,880,000 and Global Fund Round 3 purchases)

Patient Weight	Packaging	Estimated total no. of treatments needed	No. of blisters to be procured under Y1 Round 3	Projected Gap	No. of blisters to be procured under Y2 Round 3	Projected Gap
5 to 14 kg	(under 3 yrs)	1,528,800	256,107	1,272,693	385,160	1,143,640
15 to 24 kg	(3 to 7 yrs)	1,058,400	731,733	326,667	1,097,600	-39,200
25 to 34 kg	(8 to 11 yrs)	720,300	80,000	640,300	120,000	600,300
Above 35 kg	(above 12 yrs)	1,719,900	80,000	1,639,900	120,000	1,599,900
Totals		**5,027,400**	**1,147,840**	**3,879,560**	**1,722,760**	**3,304,640**
Proportion of needs met			**23%**		**34%**	

A funding gap of approximately $2 million was identified in the GFATM Round 3 grant for training needs to support appropriate use and management of antimalarial drugs. The GFATM grant also supports procurement of quinine, although the MoH has stated that it will provide quinine for pregnant women.

Draft guidelines and supporting IEC materials for ACT implementation have been prepared with the involvement of key partners and stakeholders in the MoH and NGO/FBOs. They have yet to be pilot tested and finalized. Draft guidelines also exist for malaria treatment through IMCI and at the community level, but it has not yet been decided whether ACTs will be made available through community health workers. Little or nothing is known about prescribing and dispensing practices in the public and the private sectors in general.

It is not clear how CQ and AQ stocks will be phased out from health facilities. According to the NMCP, the transition phase of three years will be characterized by facilities exhausting their current supplies of CQ and switching to AQ until AM-LUM is available, although the true status of CQ and AQ stocks is unknown, due to the decentralized way in which medicines are being procured, together with the absence of feedback on consumption and stock levels from the facilities to the central level. Similarly, no plan exists for phasing out CQ from the private sector, and virtually all malaria products, including AM-LUM and other ACTs, can be found in private pharmacies.

Proposed USG Component:

Diagnosis: ($165,000)

With AM-LUM treatment costing 15-20 times more than CQ, rapid, accurate diagnosis will be critical to target the administration of AM-LUM to infected patients and reduce the unnecessary use of antimalarials that occurs when patients are presumptively treated for malaria. The PMI views malaria laboratory diagnosis as a key component of good case management and will support strengthening of malaria diagnosis in both MoH facilities and those currently managed by NGO/FBOs.

Proposed activities during Year 1 are as follows:

1. Together with the MoH and other partners, develop a strategy and plan for the use of microscopy and RDTs at different levels of the health system and in different epidemiologic settings in the country. Based on the results of this operational evaluation, decisions will be made about procurement of RDTs and equipment and supplies for microscopy;
2. Provide on-the-job training for MoH laboratory workers in malaria microscopy and the use of RDTs and establish a standardized training course for new laboratory workers; and
3. Together with the MoH and other partners develop and implement a plan for quality assurance of microscopy and RDT diagnosis, including regular supervisory visits, a systematic review of a predetermined percentage of positive and negative blood smears, and simultaneous use of both tests in a small percentage of cases to check accuracy.

Treatment: ($1,460,000)

Ensuring prompt, effective, and safe ACT treatment to 85% of patients with confirmed or suspected malaria in Angola will represent the single greatest challenge for the PMI, given the weaknesses in the country's pharmaceutical management system and the poor access to health care. The complexity of AM-LUM implementation should not be underestimated with the short shelf-life of the drug (18-24 months) and the high levels of coverage that need to be attained. Since increasing ACT coverage rates is a high priority both for the NMCP in their National Malaria Strategic Plan for 2005-2009 and for the GFATM Round 3 grant, the PMI will coordinate its activities with those of the NMCP and other partners.

As GFATM sub-recipients and the NMCP plan to work within the MoH system for the distribution of ACTs, it is important that the weaknesses in that supply system be addressed as soon as possible. However, given the very low access to health care in Angola, and the fact that Round 2 GFATM support is targeted to areas directly served by the MoH, priority under the PMI will be given during Year 1 to supporting NGO/FBOs in ACT implementation in areas that are currently underserved by the MoH. The private sector also has a significant role to play in increasing access to safe and effective treatment, especially in rural areas.

Proposed activities during Year 1 are as follows:

1. Request an opportunity to review and discuss the final report of the UNICEF assessment of the MoH pharmaceutical supply system. Identify remaining gaps in information at the national, provincial, or municipal levels. Together with the MoH and partners develop and implement a plan to obtain the needed information;
2. Together with the MoH and other partners, provide technical assistance in the development of a consolidated detailed implementation plan for ACTs that addresses:
    a. importing, quality control, storage, and inventory management;
    b. coordination with the MoH on quantification and distribution;
    c. appropriate use;
    d. training of health workers;
    e. IEC for patients;
    f. phasing out of CQ and AQ from the public and private sectors for *P. falciparum* treatment;
    g. surveillance for adverse drug reactions and rapid response to reports/rumors of severe reactions;
    h. monitoring of implementation/evaluation of coverage;
    i. promoting correct use of ACTs in the private sector; and
    j. monitoring antimalarial drug quality in the public and private sectors;
3. Provide expert technical assistance for the planned MoH pharmaceutical management system strengthening activities ($100,000);
4. Support training of health workers in the public and private sectors to ensure good ACT prescribing and dispensing practices (Whenever possible, consider integrating this training with training on other interventions);
5. Support implementation of the IEC plan for ACT implementation, including field testing of materials and roll out. This will include efforts to promote a rapid and appropriate

response to fever, recognition of danger signs, correct use of ACTs, and appropriate follow-up if patients do not improve;
6. Assist with implementation of ACTs in the areas served by the MoH in the 59 priority districts;
7. Support ACT implementation (together with IPT and distribution of LLINs) through national and international NGO/FBOs working in areas that are currently underserved by the MoH ($500,000); and
8. Procure supplies of AM-LUM through a central mechanism to be distributed through NGOs during FY01 ($860,000).

Intermittent preventive treatment (IPT) of pregnant women

Current Status/Challenges and Needs:

Intermittent preventive treatment (IPT) with two doses of SP was approved as a national policy in September 2004. This policy applies to the entire country, including Luanda and the epidemic-prone areas in the south. It is expected that IPT will be implemented in a phased fashion throughout the country, but no detailed implementation plan has been prepared and no information is available on integration of IPT with other antenatal care services. Guidelines for prevention and treatment of malaria in pregnancy are in their final stages of development. Training and IEC materials for IPT are also under development.

It is estimated that only 40% of pregnant women attend an ANC at least once, but attendance rates are probably much lower in rural areas. Intermittent preventive treatment has not yet been implemented in any MoH facilities in Angola, but is being used in a limited fashion by some NGO/FBOs in the health facilities that they support. Between the MoH and the GFATM sufficient quantities of SP should be available to cover needs in 2005-06.

Although the Malaria Task Force includes a Malaria in Pregnancy Working Group, it has not been meeting on a regular basis and coordination between partners on IPT and issues related to malaria in pregnancy needs to be improved.

The National Malaria Control Program believes that they have sufficient support from the GFATM Round 2 grant, WHO, and UNICEF for the purchase of SP and for IPT implementation in areas served by the MoH and have asked that the PMI focus its efforts on other interventions during Year 1.

Proposed USG Component: (No cost – these activities are covered under other sections in this document)

Studies in West Africa have shown that introduction of an integrated package of antenatal services in health facilities can produce a significant increase in ANC attendance. In areas of Angola where health care delivery is currently being provided by NGOs, an opportunity exists to significantly increase access to IPT through the PMI. Based on the experiences in West Africa, the PMI will place a high priority on strengthening overall antenatal care in Angola. Providing both free ITNs and IPT to pregnant women together with IEC messages about the importance of

malaria prevention and prompt and appropriate treatment in pregnancy through NGOs/FBOs should attract more women to ANCs and improve the delivery of malaria interventions. Efforts will also be devoted to ensuring that pregnant women have access to prompt and accurate diagnosis and appropriate therapy when they present with symptoms suggestive of malaria.

Although the NMCP has proposed nationwide implementation of IPT, the use of IPT is only recommended by the WHO in areas with stable malaria transmission. Based on available epidemiologic information, the level of malaria transmission in the 4 southern provinces and the city of Luanda is probably not sufficient to warrant the use of IPT. Results of the proposed epidemiologic-entomologic evaluation during Year 1 of the PMI in these areas (see page 10), should help inform this decision.

The PMI's monitoring and evaluation plans related to IPT will be coordinated with those of the NMCP, the GFATM, and other partners.

Proposed activities during Year 1 are as follows:

1. Based on the results of the proposed studies of malaria risk in the city of Luanda and in epidemic-prone areas of southern Angola, determine if there is a need for IPT for pregnant women in these areas. If not, discuss with the NMCP and partners the possibility of a modification in the draft national IPT implementation plan; and
2. Support NGO/FBOs to introduce IPT with SP (together with improved case management and LLIN distribution) in areas that are not currently being served by the MoH using NMCP-approved training and IEC materials. Whenever possible, work towards integrating training related to the different aspects of prevention and treatment of malaria in pregnancy.

INTERVENTIONS – EPIDEMIC SURVEILLANCE AND RESPONSE

Current Status/Challenges and Needs:

The four southern provinces of Namibe, Kunene, Huila, and Cuando Cubango bordering Namibia are regarded as epidemic-prone, but careful mapping of the epidemic risk in these areas has never been carried out. In fact, since approximately 90% of all malaria cases reported in Angola are diagnosed without laboratory confirmation, the true geographic extent of epidemic malaria and the seasonality of transmission are unknown. The last reported epidemic in southern Angola occurred in 2001.

Although the National Malaria Control Strategy for 2005-2009 includes early detection and rapid containment of malaria epidemics as one of its objectives, existing systems for epidemic detection and response are generally weak and poorly organized. The National Epidemiological Surveillance System collects weekly malaria reports from the four southern provinces, but not all districts report on a regular basis. Since the reliability of this information is unknown and delays occur in releasing data to the NMCP, the data are of limited use for epidemic detection.

Municipal- and provincial-level epidemic control plans do not exist, and the response to epidemics at these levels is very much reactive. Limited supplies of drugs, insecticides, backpack sprayers, shortages of trained personnel, and poor communication and road conditions compromise a timely response. Post-epidemic evaluations are not carried out.

Proposed USG Component: (No cost – these activities are covered under other sections of this document)

Malaria epidemics in the 4 provinces bordering Namibia have the potential of causing considerably morbidity and mortality with little warning and over very short periods of time. In addition, if not detected early and appropriately controlled, they can divert MoH/NMCP staff and resources from routine control activities in more highly endemic areas of the country.

The single greatest obstacle to mounting an effective response to malaria epidemics in the four southern provinces is the lack of detailed and reliable epidemiologic and entomologic information about the geographic and seasonal risks of malaria there. This problem should be largely resolved by the results of the investigations of malaria risk planned for Year 1 in these provinces (see page 8). At the same time, efforts will be made to begin strengthening existing epidemiologic and entomologic surveillance and reporting systems.

Since epidemic detection and containment are priorities for both the NMCP and the GFATM Round 3 grant, the PMI will coordinate its activities with those of the NMCP and other partners.

Proposed activities during Year 1 are as follows:

1. As described in the general epidemiology/entomology section, malaria epidemic-prone areas and the seasonality of transmission in the 4 southern provinces will be defined to better target IRS and distribution of ITNs;
2. Together with other partners, support the establishment of an epidemic response team within the NMCP; and
3. If an epidemic occurs, the in-country PMI team will assist the NMCP and other partners in conducting a post-epidemic evaluation to assess the effectiveness of different control measures and refine and strengthen existing epidemic response plans.

CAPACITY BUILDING WITHIN THE NATIONAL MALARIA CONTROL PROGRAM

Current Status/ Challenges and Needs

The NMCP is responsible for planning and supervising all malaria control activities in the country. It has a staff of 11 based in Luanda and, with GFATM support, should have full-time malaria supervisors in each of the 18 provinces. There are no malaria control workers at the municipal or lower levels. The NMCP lacks infrastructure in terms of office space, transport, and logistic and communication support at both the central and provincial levels. In addition, NMCP workers at the provincial level are in need of training and regular supervision.

Proposed USG Component: ($25,000)

Successful implementation of the new antimalarial treatment and IPT policies together with large-scale ITN distribution programs and vector control efforts in a country the size of Angola with its poor roads and communications and a weak health infrastructure will depend on a well-trained, highly motivated, and active malaria staff at the central, provincial, and municipal levels.

To reach the 85% targets of the PMI for coverage of ACTs, ITNs, IPT, and IRS, the PMI and other partners will need to support efforts to strengthen the capacity of the NMCP at the central, provincial, and municipal levels to plan, conduct, supervise, monitor and evaluate malaria prevention and control activities. This will require greatly improved working and communication facilities and logistic support, as well as staff training.

The PMI plans to place two health professionals in country beginning in 2006, a program manager and a malaria advisor. Ideally, these two individuals should occupy working space in or near the NMCP offices in Luanda to ensure close contact and coordination and provide maximum opportunity for building technical, managerial, and logistic capacity within the NMCP.

Proposed activities during Year 1 are as follows:

1. Work with the MoH and other partners to upgrade the NMCP office facilities in Luanda and install computers and communication support, including telephone, fax, and e-mail access;
2. Finance transport/per diem for staff to ensure regular access to the field for supervision, training, and monitoring and evaluation; and
3. Together with partners, PMI in-country staff will conduct a needs assessment for capacity building and infrastructure support for the NMCP at the provincial and municipal levels and develop and implement a plan for infrastructure support and capacity building at the provincial and municipal levels.

COMMUNICATION/COORDINATION

Current Status/Challenges and Needs:

There is a lack of coordination and communication among partners involved in malaria prevention and control in Angola. The GFATM Country Coordinating Mechanism does not meet on a regular basis and malaria-related issues cannot be discussed in detail. Both the Round 3 and Round 5 GFATM proposals were written in a way that did not allow full participation by all partners. Different partners often do not have a full picture of what others are doing.

A Malaria Task Force has been formed around the GFATM proposal made up of MoH, WHO, UNICEF, PSI, and GFATM staff. This group holds monthly meetings, but other potential partners and NGO/FBOs working on malaria are usually not invited to these meetings. Malaria technical working groups exist as part of the Task Force, but they meet only irregularly.

Proposed USG Component:

If the NMCP is to fulfill its leadership role in the malaria control effort in Angola, more efficient mechanisms for communication and coordination among the variety of different groups involved in malaria activities in Angola will need to be developed. The success of the 2005-2009 National Malaria Control Strategy, the GFATM Round 3 grant, and the PMI in Angola will depend on a close and effective working relationship between the NMCP and its partners.

The Malaria Task Force, which the NMCP should coordinate, provides an ideal venue to share information with all other national and international partners and ensure good coordination of malaria control activities. The PMI, especially through its in-country staff, should support the partnership by providing administrative support to the regular meetings of the Malaria Task Force, and participating actively in its various working groups.

Since the GFATM Round 5 proposal was unsuccessful, discussions should begin early in 2006 with all interested partners on preparing a revised proposal for Round 6 that would take into account comments on the Round 5 proposal and the recently announced PMI support to malaria control activities in Angola.

Coordination with on-going USG health-related activities in Angola, including maternal and child survival and health programs, HIV-AIDS activities, and others will be also be an important priority for the PMI to ensure the most cost-effective implementation of prevention and treatment measures. The in-country PMI team will take primary responsibility for coordination, with support from the U.S.-based PMI staff.

Proposed activities during Year 1 are as follows:

1. In-country PMI staff will provide support to the NMCP to coordinate monthly meetings of the Malaria Task Force, which should be made up of representatives of the NMCP, WHO, UNICEF, GFATM, private sector, NGO/FBOs and the President's Initiative on Malaria;
2. Work with the NMCP and partners to develop an annual work plan and establish clearly defined roles and responsibilities for Task Force representatives and their organizations;
3. Support and participate in working groups within the Malaria Task Force on:
    a. surveillance and monitoring and evaluation;
    b. diagnosis and treatment;
    c. malaria in pregnancy;
    d. vector control;
    e. epidemic detection and response;
    f. behavior change and communication; and
    g. monitoring and evaluation;
4. Program management - work with the NMCP to convene partners in early 2006 to begin discussing and writing a proposal for the GFATM Round 6, which is likely to be announced in March/April 2006.

PUBLIC-PRIVATE PARTNERSHIPS

Several large companies are already supporting or have indicated interest in supporting public health programs in Angola. Exxon-Mobil, through its Africa Health Initiative, seeks to make a significant contribution to reducing the burden of malaria in five oil-producing countries in Africa where the company has major investments, and the company has been the major private sector supporter of malaria control activities in Angola. One area of interest for Exxon-Mobil is the strengthening of in-country capacity to control malaria, especially through NGOs/FBOs.

Proposed USG Component: (No additional cost)

Public-private partnerships are a highly attractive means of leveraging additional support and expertise for priority health programs. The Global Development Alliance of USAID has drafted a concept paper laying out an approach to engaging private sector partners in the PMI. Building on the existing close relationship between the USAID Mission in Angola and Esso-Angola, efforts should be directed to coordinating the malaria activities of the two programs. Since national and international NGOs/FBOs are the major providers of health care in the rural areas not served by the MoH, and the PMI plans to focus on implementation of improved malaria diagnosis, treatment, and prevention through such groups during its first 1-2 years, this might be a particularly attractive area for collaboration.

Proposed activities during Year 1 are as follows:

1. Discuss the proposed 5-year Strategy and 1-year Implementation Plan for the PMI in Angola with Exxon-Mobil and follow-up on possible opportunities for collaboration; keep Exxon-Mobil apprised of the evolving PMI strategy and plans in Angola; and
2. Offer to provide technical review and/or assist with an external evaluation of malaria-related proposals presented for funding to Exxon-Mobil/Esso-Angola.

MONITORING AND EVALUATION PLAN

Current Status/Challenges and Needs:

Although the NMCP recognizes the critical importance of a strong monitoring and evaluation component to their program, the health information system in Angola is very weak and the quality of available information is unknown. The last large demographic survey conducted in Angola, a MICS survey, was carried out in 2000 and did not cover the entire country. Although a nationwide DHS survey has been proposed in Angola for 2006, it appears that it will be postponed until 2008. Only limited information exists on the current status of malaria control interventions in Angola or key coverage indicators.

The NMCP has been working to establish a National Malaria Information System. This system is intended to support the larger National Epidemiological Surveillance System by collating data from existing or on-going municipal- and household-level surveys. In addition, the NMCP intends to conduct smaller, focused surveys and studies to answer specific questions related to malaria transmission, diagnosis, treatment, control, and knowledge, attitudes and practices on an ad hoc basis. The GFATM Round 3 grant provides funding for strengthening the monitoring and

evaluation capacity of the NMCP, and UNICEF, PSI, and WHO all receive funding to support evaluation of their activities.

Proposed USG Component: ($545,000) (made up of $345,000 of in-country PMI funds and 200,000 of core PMI funds)

Monitoring and evaluation to measure progress against project goals and targets, to identify problems in program implementation and allow modifications to be made, and to confirm that those modifications are having their desired effect will be a critical component of the PMI. In Angola, rapid scale up of malaria prevention and control interventions and achieving high coverage rates with ACTs, ITNs, IPT, and IRS are priorities not only for the PMI, but also for the NMCP, the GFATM, and other national and international partners working on malaria. For this reason, an effort will be made to coordinate all monitoring and evaluation activities funded by the PMI with those of the NMCP and other partners into a single integrated system to avoid duplication, conserve resources, and ensure as much uniformity as possible in the indicators chosen to measure progress, in approaches to collecting and analyzing data, and in reporting.

Evaluation of Progress toward the President's Malaria Initiative Goal and Targets:

Coverage of interventions

Baseline data on coverage of the following five interventions in persons at risk of malaria will be assessed in 2006:

1. Proportion (percentage) of children under five who slept under an ITN the previous night;
2. Proportion (percentage) of pregnant women who slept under an ITN the previous night;
3. Proportion (percentage) of pregnant women who have received two or more doses of SP for IPT during their pregnancy (in areas that have been determined to be appropriate for IPT use);
4. Proportion (percentage) of children under five with suspected malaria who have received treatment with an antimalarial drug in accordance with national malaria treatment policies within 24 hours of the onset of their symptoms; and
5. Proportion (percentage) of houses targeted for indoor residual spraying during Year 1 that have been sprayed.

Information on the first four indicators will be obtained from a proposed nationwide MIS survey. To complement these data, hemoglobin levels in children under five will also be measured during the survey. Given the high cost of such surveys and the fact that the results will be of general use to the GFATM, the World Bank, and other groups, it is hoped that other donors will provide partial funding for the MIS survey.

The number of houses that should be targeted for IRS in Angola during Year 1 will depend on the detailed mapping of malaria risk areas in the four southern provinces and Luanda that will be carried out during 2006. Information will be collected on the monthly incidence of malaria and density of vectors at representative sites in the region. Once that information is available, the proportion of targeted houses that were sprayed will be calculated from IRS field records.

Impact on malaria mortality and morbidity

Since no recent nationwide, population-based surveys have been carried out in Angola and it will not be possible to conduct a DHS or MICS survey in 2006, baseline data on all-cause mortality in children under five during the preceding 5 years (2001-2005) for the purposes of the PMI will be taken from the UNICEF State of the World's Children annual report for 2005.

Monitoring of progress:

Given the weak national health information system in Angola and the unreliable quality of malaria surveillance data, during Year 1, targeted operational studies and record reviews will be required to obtain the information needed by the PMI to monitor program progress. Thus, while the PMI will work with the MoH, the NMCP, and other partners to strengthen the national health information and national malaria surveillance systems, information on numbers of malaria illnesses and deaths and malaria case fatality rates in health facilities will need to be collected by separate surveys funded by the PMI in randomly selected sentinel health facilities in each province. For collection of data related to other indicators of progress, an effort will be made to coordinate with the NMCP, the GFATM, and other partners to standardize data collection and reporting.

An evaluation and monitoring framework and budget for the PMI in Angola is presented in Table 8 of the Annex. Data will be reviewed on a regular basis by the PMI team, the NMCP, and other partners to identify potential problems and implement solutions. Much of this information will also be of interest to other partners in Angola, and an effort will be made to seek partial support from them for these activities.

STAFFING AND ADMINISTRATION

Two expatriate staff members will be hired to oversee the President's Malaria Initiative. They will be based within the MoH, ideally in or very close to the offices of the NMCP, but will maintain close and frequent contact with the USAID Mission. Candidates for these positions will be evaluated and/or interviewed jointly by USAID and CDC, and both agencies will be involved in hiring decisions.

A technical/scientific officer will oversee all technical and scientific aspects of the PMI in Angola, including finalizing details of the project design, implementing malaria prevention and treatment activities, monitoring and evaluation of outcomes and impact, and reporting of results. All of these activities will be undertaken in close coordination with the MoH/NMCP and other national and international partners, including the WHO, UNICEF, the GFATM, and the private sector.

A manager/administrator will be responsible for day-to-day administration of the PMI in Angola, office management, personnel issues, and financial management and reporting.

The decision on whether the technical/scientific officer or the manager/administrator will be overall PMI Country Coordinator will be based on their backgrounds and experience. Both the technical/scientific officer and the manager/administrator will work closely with the USAID-Angola PHN Officer. The PMI Angola Country Coordinator will report to the USAID Mission Director or his/her designee.

In addition, local staff, including a bilingual secretary-translator and a driver will be hired by the PMI to support the in-country PMI team.

ANNEX

Figure 1

Ministry of Health - Angola
59 Targeted Municipalities (Districts)

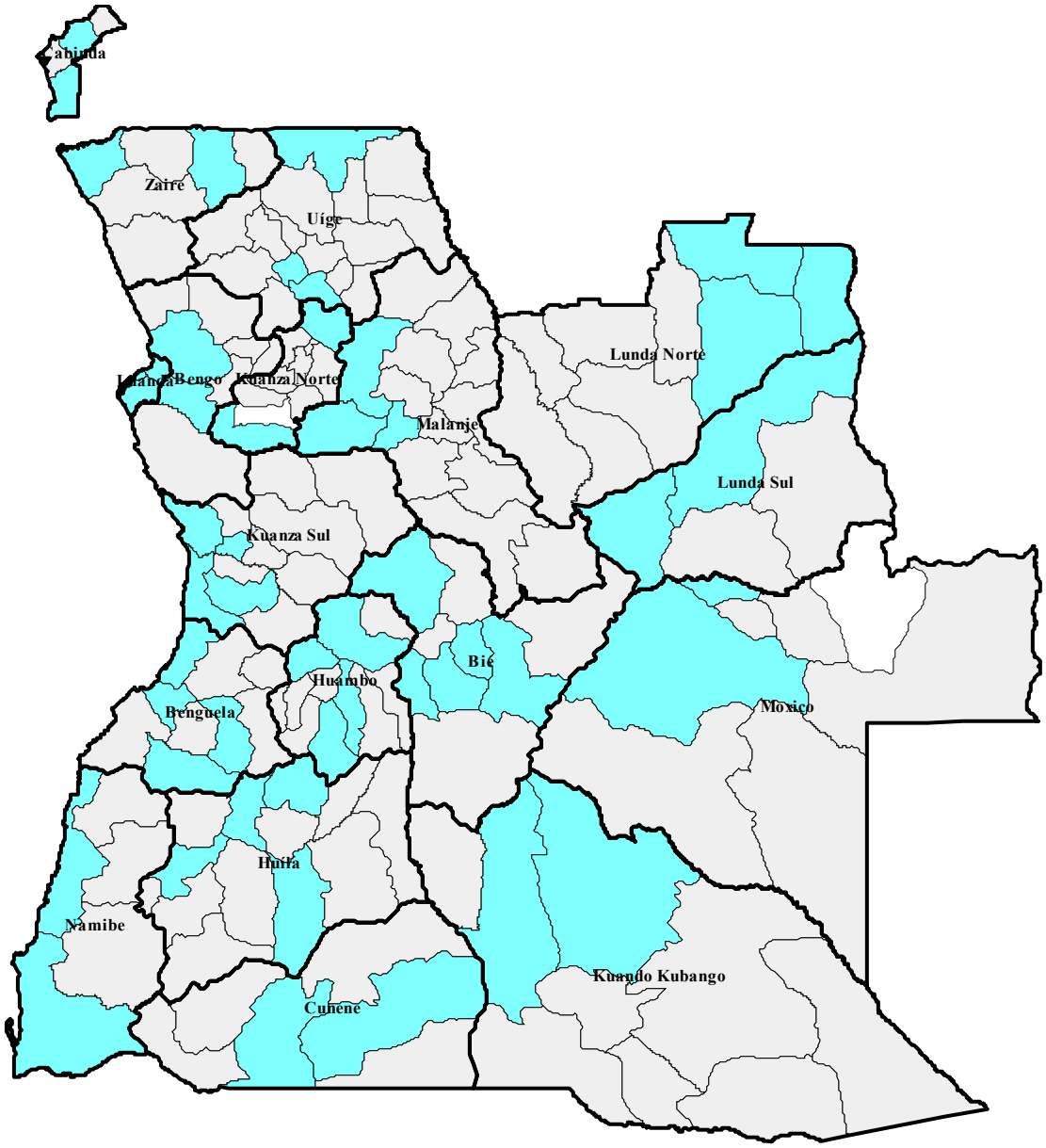


Table 1

President's Malaria Initiative – Angola
Year 1 (FY06) Timeline of Activities

ACTIVITY	2005	2006											
	OCT-DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
Hire PMI in-country staff													
Purchase commodities (AM-LUM; ITNs; RDTs)													
NGO/FBO grants	(RFPs)		(award)										
Measles-ITN distribution campaign and evaluation													
Distribution of subsidized and full-cost ITNs through social marketing													
IRS campaign in epidemic-prone provinces													
National Malaria Indicator Survey													
Malaria risk study – Luanda and southern provinces													
Build in-country insecticide resistance testing capability; evaluate duration of insecticides on traditional surfaces													
Strengthen MoH antimalarial drug management system													
Improve diagnostic capabilities of MoH laboratory staff													
Establish epidemic response teams													
Strengthening NMCP													

Table 2

President's Malaria Initiative – Angola
Planned Obligations for FY06 ($000)

Proposed Activity	Mechanism	Budget (*commodities*)	Geographic Area	Description of Activity	Relation to Interventions
PREVENTIVE ACTIVITIES					
Evaluation/mapping of malaria risk areas	CDC/USAID	60	Namibe, Huila, Cunene, Cuando Cub., Luanda	Evaluation of malaria risk in 4 southern provinces and city of Luanda	IRS and ITNs
Building entomology insecticide resistance testing capacity	CDC/USAID	70	Luanda	Establish insecticide resist. testing capacity; train NMCP staff	IRS and ITNs
Purchase/distrib. of long-lasting insecticide-treated mosquito nets	Grant to UNICEF	2,908[1] (*2,908*)	Nationwide	Purchase/distribution of LLINs to pregnant women/children <5 through measles campaign	ITNs
Social marketing of LLINs; IEC activities related to ITNs	Contract - PSI	600 (*400*)	Luanda and major urban areas	Purchase of LLINs, distribution, IEC	ITNs
Indoor residual spraying	Integrated Vector Management Task Order	1,400 (*400*)	Namibe, Huila, Cunene, Cuando Cubango, Luanda	Purchase of insecticide, spraying supplies/equipment	IRS
Intermittent preventive treatment	Grants to NGOs/FBOs through Mission NGO strengthening contract	No cost to PMI[2]	Nationwide	Health worker training/development; dissemination of IEC materials related to IPT	IPT
SUBTOTAL: Preventive		**5,038 (*3,708*)**			

CASE MANAGEMENT ACTIVITIES					
Laboratory diagnosis of malaria; training and quality control	CDC Interagency Agreement	65	Nationwide	Training of public and private sector malaria microscopists	Case management
Purchase of rapid diagnostic tests for malaria	Grant to UNICEF	100 (*100*)	Areas covered by funded NGOs/FBOs	Purchase of rapid diagnostic tests	Case management
Purchase of AM-LUM	Grant to WHO	860 (*860*)	Areas covered by funded NGOs/FBOs	Purchase of AM-LUM	ACTs
Roll out of AM-LUM therapy by NGOs/FBOs	Grants to NGOs/FBOs (as above)	500	Areas covered by funded NGOs/FBOs	Implement ACT treatment of malaria in areas not currently served by the MoH	ACTs
Strengthen MoH antimalarial drug mgmt. system	Contract with RPM	100	59 targeted districts	Strengthen pharmaceutical mgmt. related to antimalarial drugs	ACTs
SUBTOTAL: Case Mgmt.		**1,625 (*960*)**			
MONITORING AND EVALUATION					
Baseline nationwide Mal. Indicator Survey	Contract with ORC Macro	345	Nationwide	Baseline data on intervention coverage	M&E
Post measles-ITN campaign survey; monitoring activities		200[3]			
SUBTOTAL: M&E		**345**			
IN-COUNTRY MANAGEMENT AND ADMINISTRATION					
In-country staff; Admin. expenses	CDC/USAID	467[4]	Nationwide	Coordination of all in-country PMI activities	All interventions
SUBTOTAL: Mgmt. and Admin.		**467[4]**			
OTHER					
Epidemic surveillance and response	N/A	No cost to PMI[2]	Namibe, Huila, Cunene, C. Cubango,	Establish epidemia response teams	Epidemic response and containment
NMCP strengthening	Contract through bilateral	25	Luanda	Provide internet, fax and telephone communication	General
Communication and coordination	N/A	No cost to PMI[2]	Luanda	Support regular meetings of Malaria Task Force	General

SUBTOTAL: Other		**25**			
GRAND TOTAL		**7,500 (*4,668*)**	***Commodities represent 62% of total budget***		

1. Made up of $2,808,000 of FY06 PMI funds and $100,000 of FY05 funding
2. Cost of these activities is covered under other headings
3. This amount ($200,000) will come from core PMI budget and is not included in total.
4. The total available for in-country management and administration costs is $867,000. This consists of $467,000 of FY06 PMI Angola funds, plus $200,000 of core PMI funds, plus $200,000 of FY05 funds. It will cover the salary and benefits for two expatriate professionals, an FSN, vehicle, and office equipment

Table 3

Angola – Year 1 Targets
Assumptions and Estimated Year 1 Coverage Levels

Year 1 PMI Targets:

1. *At least 1 million LLINs will be distributed to children under five and pregnant women. (This is expected to translate to nationwide coverage of >30% of all pregnant women and children under five in Angola in areas not covered by IRS)*
2. *Malaria treatment with ACTs will be implemented in all 59 priority districts nationwide (70% of the total population)*
3. *At least 35% of all children under five with suspected malaria in 59 districts will receive ACTs (translates to nationwide coverage of 25%)*
4. *IPT with SP will be implemented in all 59 priority districts nationwide (70% of the total population)*
5. *At least 35% of pregnant women attending health facilities in 59 priority districts will receive at least one dose of IPT with SP (translates to nationwide coverage of 25%)*
6. *At least 85% of houses targeted for IRS during Year 1 will have been sprayed*

Assumptions:

Population of Angola (estimated): 15,000,000

Pregnant women:	4% of total population = 600,000 pregnant women
Infants (children <1):	3% of population = 450,000 infants
Children <5:	20% of population = 3,000,000 children under five

The 59 MoH priority districts contain 70% of Angola's population, or 10,500,000 persons

Average number of malaria-like illnesses per year and cost per treatment:

Children <5:	3.5 illnesses/year at $0/90 each
Older children/adults	1.0 illnesses/year at $2.40 each (assume that the PMI will cover only one-third of adult episodes)

Average of 2.5 nets/household needed to cover all pregnant women and children under five in family;
Measles immunization campaign will provide one ITN/household for children from 9-48 months of age and one ITN to any pregnant women (estimated to be 200,000) who participate in immunization campaign.

Inter-vention	Needs for 100% Nationwide Coverage over 5 Years*	Needs for 85% Nationwide Coverage over 5 Years*	Annual Needs to Achieve 100% Coverage	Needs to Achieve Year 1 PMI Targets	Year 1 Contributions
IPT	600,000 pregnant women x 2 treatments/woman = 1.2 million treatments/year x 5 years = 6 million treatments	5.1 million SP treatments	1.2 million SP treatments	**Target:** *35% of pregnant women receive 2 doses of IPT* = 420,000 treatments	MoH – 3 million SP treatments to arrive early 2006; **Sufficient SP to achieve 100% coverage, if fully implemented**
LLINs	2.3 million households x 2.5 nets/household = 5.75 million nets	4,887,500 LLINs (or 977,500 nets per year for 5 yrs)	One-fifth of 4.8875 million LLINs = 977,500 LLINs	**Target**: *30% of children under 5 and pregnant women sleep under LLIN* 200,000 pregnant women 800,000 additional households = 1,000,000 LLINs	GFATM – 420,000 USG (PMI) – 440,000 Exxon-Mobil – 80,000 JICA (Benguela) – 90,000 **TOTAL** = 990,000 LLINs **Thus, 100% of Year 1 LLINs needs are met**
ACTs – children < 5 ACTs – older children and adults **TOTAL**	3 million children under 5 x 3.5 episodes/year = 10.5 million treatments/year x 5 years = 52.5 million 12 million persons x 1.0 episodes/year x 33% of treatments covered = 4 million treatments/year x 5 years = 20 million 72.5 million treatments	10.5 million x 85% = 8.9 million treatments x 5 yrs = 44.5 million 4 million x 85% = 3.4 million tx x 5 yrs. = 17 million = 61.5 million treatments	10.5 million treatments 4 million treatments	**Target**: *35% of children under 5 receive ACT*s 10.5 million x 35% = 3.675 million treatments 4 million x 35% = 1.4 million treatments	GFATM – $5.5 million USG (PMI) - $900,000 JICA (Benguela Province) - $400,000 **TOTAL available for ACTs** = $6.8 million. If all 3.6 million child treatments are covered at $0.90/treatment = $3.3 million and all 1.4 million adult treatments are covered at $2.40/treatment = $3.36 million = total of $6.66 million needed **Thus, 100% of Year 1 ACT needs are met.**

IRS	Houses to be targeted for IRS will depend on entomologic-epidemiologic studies to be conducted in 2006	Houses to be targeted for IRS will depend on 2006 entomologic-epidemiologic studies	200,000 households	**Target**: *85% of targeted houses to be sprayed* 170,000 households to be sprayed	USG (PMI) – 200,000 households scheduled for spraying in provinces of Cunene and Huila **Thus, 100% of Year 1 needs are met.**

*These calculations are based on the assumption that the total population of Angola is at risk of malaria. Since malaria transmission probably does not occur in large areas of the capital, Luanda, which represents 25% of the country's population, it is likely that only 80-85% of the population is at risk of a malaria infection and needs preventive and curative malaria services.

Table 4

President's Malaria Initiative – Angola
Year 1 (FY06) Budget Breakdown by Intervention ($000)

	Insecticide-treated Nets	Indoor Residual Spraying	Case Management	Intermittent Preventive Treatment	Other (including M&E)
Commodities	3,308,000 (92%)	400,000 (24%)	960,000 (54%)	--	
Salaries	50,000 (2%)	100,000 (6%)	150,000 (9%)	67,000 (100%)	100,000 (21%)
Services	100,000 (3%)	740,000 (46%)	535,000 (30%)	--	270,000 (58%)
Technical Assistance	100,000 (3%)	390,000 (24%)	130,000 (7%)	--	100,000 (21%)
Other	--	--	--	--	--
PMI Budget	3,558,000	1,630,000	1,775,000	67,000	470,000
Total	**100%**	**100%**	**100%**		**100%**

Note: Budget totals for each intervention do not sum up to the full country total because some activities, such as PMI country team salaries/benefits/expenses, cut across technical interventions.

Table 5

Year 1 (FY06) Budget Breakdown by Partner ($000)

(Once the FY06 Implementation Plan is approved and contracts/grants cooperative agreements awarded, all other partners will be listed here)

Partner Organization	Geographic Area	Activity	Budget
NMCP	Nationwide		-
WHO	-	Purchase of AM-LUM and RDTs	960
UNICEF	-	Purchase of LLINs	2,908
NGO/FBO #1		Malaria preventive and curative service delivery in underserved areas	
NGO/FBO #2		"	
NGO/FBO #3 (etc.)		"	Total of 500
IRS contractor	Namibe, Huila, Cunene	IRS	1,400
Contractor for Malaria Indicator Survey (MIS)	Nationwide	MIS survey	300
Contractor for strengthening MoH antimalarial drug management system	Luanda and provincial capitals	Strengthen MoH antimalarial drug management system	100
PSI Contract for social marketing of LLINs	Luanda and other major urban areas	Social marketing of LLINs	600

Table 6

Global Fund Round 3 Angola Grant – Status by Intervention ($000)

	Insecticide-treated Nets	Indoor Residual Spraying (insecticide)	Diagnosis (microscopy/ RDTs)	Treatment (ACTs/ quinine)	Intermittent Preventive Treatment (SP)	Epidemic Surveillance and Response	M & E	Total
Planned funding	10,874	296	1,363	11,300	330	0	327	27,500*
Disbursed funds (as of 10/05)	8,495	264	720	1,853	32	0	43	11,407

*includes $3.2 million for capacity building and hiring of staff for the NMCP spread among various categories.

Table 7

Private Sector Contributions by Intervention ($000)

Company/ Organization	Insecticide-treated Nets	Indoor Residual Spraying (insecticide)	Diagnosis (microscopy/ RDTs)	Treatment (ACTs)	Intermittent Preventive Treatment (SP)	Epidemic Surveillance and Response	Total
Exxon-Mobil	500,000		100,000	600,000	300,000		1,500,000

Table 8

President's Malaria Initiative – Angola - Year 1 (FY06)
Monitoring and Evaluation Plan

Survey or Indicator	Frequency of Measurement	Source of Data (Mechanism)	Cost to PMI
National Malaria Indicator Survey with anemia and parasitemia measurements	2006	Nationwide survey (Mechanism to be determined)	$300,000
Data collection for "confounders" (rainfall, urbanization, SES)	2006	GoA reports	$5,000
No. of ITNs purchased/distributed by route of distribution (ANCs, campaigns, commercial sales, etc.)	Quarterly	Routine reports from all partners	0
Post measles-ITN campaign survey	N/A	Nationwide survey (CDC IAA)	$50,000
No. of districts where ACT has been implemented	Quarterly	NMCP reports	0
No. of ACT treatments administered (by age group)	Every 6 months	NMCP/MoH/NGO/FBO reports	0
No. of health facilities offering laboratory diagnosis of malaria (microscopy or RDTs)	Quarterly	Reports from MoH, NGOs/FBOs, others	0
No. of districts where IPT with SP has been implemented	Quarterly	NMCP reports	0
No. of SP treatments administered	Quarterly	NMCP/MoH/NGO/FBO reports	0
National health facility survey in outpatient sick child clinics and ANCs to evaluate malaria case management, ACT and other drug stockouts and excess stocks, IPT use, and health worker performance	Quarterly	Surveys in ANCs and sick child clinics at sentinel health facilities (Mechanism to be determined)	$100,000
Collect outpatient and inpatient data on malaria illnesses, deaths, severe anemia	Quarterly	Review of medical records at selected health facilities	$30,000
Antenatal care attendance (3 visits)	2006	National-level statistics/ DHS	0
Supervision and quality improvement data monitoring	Quarterly	Supervisory visits to health facilities (Mechanism to be determined)	$60,000
No. of districts with epidemic-prone areas that have a written epidemic response plan	Every 6 months	NMCP reports	0
No. of IEC materials produced/disseminated (by intervention and type)	Quarterly	Routine reports from partners	0
No. of training courses offered/persons trained on malaria microscopy, case management, management of severe malaria, IPT, etc.	Every 6 months	Routine reports from PMI-funded partners	0
No. of meetings of Malaria Task Force	Quarterly	Malaria Task Force minutes	0
Total budgeted in country plan			**$345,000**
Total from core budget			**$200,000**
GRAND TOTAL			**$545,000**

PRESIDENT'S MALARIA INITIATIVE

Malaria Country Action Plan (CAP)
FY 2006
TANZANIA

January 2006
US PMI Planning Team Strategy Report
Team Members: Matthew Lynch, Rene Salgado, S. Patrick Kachur, Robert Wirtz, Melanie Renshaw, Richard Greene, Charles Llewellyn

A. PRESIDENT'S MALARIA INITIATIVE

The new President's Malaria Initiative (PMI) seeks to "*dramatically reduce malaria as a major killer of children in sub-Saharan Africa.*[1]" The goal is to reduce malaria deaths by 50 percent in targeted countries in sub-Saharan Africa. Approximately 85 percent coverage of vulnerable or high risk groups with preventive and curative actions will be necessary to achieve the goal. The main actions the initiative will support are: promotion of insecticide-treated nets (ITNs), indoor residual spraying (IRS), prompt and effective case management of malaria and intermittent preventive treatment (IPT) of malaria in pregnancy.

A total of United States Dollars (USD) $1.2 billion will be made available to up to 15 sub-Saharan African countries over the next five years (Fiscal Years FY 2006 – FY 2011). These resources are in addition to the USD $200 million the United States Government (USG) already spends on malaria. The total beneficiary population is approximately 175 million people.

In Tanzania, PMI has been enthusiastically received by the National Malaria Control Programme (NMCP) in the mainland and the Zanzibar Malaria Control Programme (ZMCP) in Zanzibar. Both programs have been extensively consulted and have actively participated in discussions with the PMI team in setting programmatic priorities. A rapid assessment (RA) of the malaria situation in mainland Tanzania and Zanzibar was completed by the United States Agency for International Development (USAID), the Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO). Additionally, consultative meetings were held in the mainland and Zanzibar to further consult with government, development partners (including NGOs) and the private sector. We believe the Country Action Plan (CAP) faithfully captures the top technical, programmatic and financial priorities voiced by government and the development community in Tanzania as well as observing the letter and spirit of the PMI. This work plan has been approved by the NMCP, ZMCP and USAID – Tanzania.

B. MALARIA SITUATION

Malaria is the single most important cause of morbidity and mortality in the United Republic of Tanzania. Ninety three percent of the population is considered at risk.. Malaria is perennial in 106

[1] http://www.whitehouse.gov/news/releases/2005/06/print/20050630-8.html

districts (out of 126) of the country and will affect one way or another 100 percent of the population. Additionally, 20 districts, which represent about 25 percent of the population, are prone to malaria epidemics every four to five years. Approximately 95 percent of cases of malaria are produced by *Plasmodium falciparum.* Estimates for overall number of cases of malaria are between 14 – 19 million cases per year. Malaria affects all socio-economic strata but it concentrates mainly among the poor and children under five. It seriously affects pregnant women. Malaria peaks during the "short rains" (November-December) and "long rains" (March – June) and declines during the dry season (July – October).

A third or more of all out patient department (OPD) visits and hospital admissions are attributed to malaria.[2] In year 2000, there were 1,661,533 OPD consultations for malaria for children under five—almost 39 percent of total consults for children under five. Additionally, almost 55 percent of hospital admissions in children under five were due to complicated malaria. Overall (all ages) there are 100,000 – 125,000 deaths per year from malaria, of which 80 thousand occur in children under five—that is 65 – 80 percent of all malaria deaths and 36 percent of all under five deaths. Nationally, it is estimated that a Tanzanian child under five years of age will have .7 cases of malaria per year.[3]

Malaria is also a significant burden to pregnant women in Tanzania. It has been estimated that there are approximately 1.7 million cases of malaria in pregnant women and up to 20 percent of deaths among pregnant women can be attributed to malaria. Also, a significant proportion of anemia during pregnancy is related to malaria.

Below are the main roll back malaria indicators monitored by the National Malaria Control Programme in mainland and the Zanzibar Malaria Control Programme.

Table 1: Roll Back Malaria Core Indicators

#	Indicators	NMCP		ZMCP	
		2001	2003	2002	2005
1	Crude death rate (under five)	184 /1000			
2	Mortality attributed to malaria (all ages)	31	32	50	36
3	Mortality attributed to malaria (under five)	38	41	47	47
4	Mortality attributed to malaria (5 and above)	23	10	62	25
5	Morbidity attributed to malaria (all ages)	42	40	48	22
6	Morbidity attributed to malaria (under five)	46	43	54	26
7	Morbidity attributed to malaria (5 and above)	41	38	44	20
8	Case fatality rate (under five)	2.8	3.2	2.8	2.5
9	Case fatality rate (five and above)	3.5	3.1	2.7	2.3
10	% of under fives with fever getting appropriate treatment within 24 hours of onset	11	27	6	10
11	% of fever/uncomplicated malaria under five cases correctly managed at health facilities	51	64	41	73

[2] The Costs, Effects, and Cost-Effectiveness of Changing the First-Line Drug for the Treatment of Malaria in Tanzania.
[3] Personal communication. Joanna Armstrong Schellenberg.

Table 1: Roll Back Malaria Core Indicators

#	Indicators	NMCP		ZMCP	
		2001	2003	2002	2005
12	% of severe malaria cases (under-five) correctly managed at health facilities	54	58	73	69
13	Proportion of inpatients cases due to malaria all ages	46	40		
14	Proportion of inpatients cases due to malaria under five	51	56		
15	Proportion of inpatients cases due to malaria five and above	41	25		
16	Proportion of admissions due to malaria	59	55		
17	% pregnant women taking SP for IPT	29	49	0	49
18	% pregnant women sleeping under treated mosquito net	8	21	3	38
19	Proportion of pregnant women sleeping under mosquito net during current pregnancy or during 6 months of last pregnancy	36	42		
20	% of under fives sleeping under treated mosquito net.	15	26	0	37
21	% of under fives sleeping under mosquito net	46	52	34	68
22	% of mosquito nets treated with insecticide within the last 12 months	33	49		
23	% of households having at least one ITN	14	25	3	41
24	Proportion of population sleeping under mosquito nets	40	39		

Source: NMCP – Monitoring Malaria Situation and Control Activities – Health Facility and Community Survey. Monitoring and Evaluation Unit 2001 – 2003. ZCMP – Roll back Malaria Evaluation Report 2005.

C. NATIONAL AND ZANZIBAR MALARIA CONTROL PROGRAMMES

The Government of Tanzania (GoT) has well established malaria control programs in the mainland and Zanzibar. The National Malaria Control Programme (NMCP) serves the mainland while the Zanzibar Malaria Control Programme (ZMCP) serves Zanzibar. Mainland Tanzania and Zanzibar (which includes the islands of Unguja and Pemba) have separate ministries of health and for practical purposes their respective programs are independent and may, in some areas, differ somewhat. Essentially, for malaria control purposes, there are two "countries" within the United Republic of Tanzania; the mainland with approximately 34 million inhabitants and Zanzibar with one million population. Therefore, strategies and work plans will discuss each country separately when appropriate.

For the NMCP, the principal aim is to reduce mortality and morbidity due to malaria in all 21 regions of the country by 25 percent by 2007 and by 50 percent by 2010. For Zanzibar the reduction is by 35 percent by 2008. Both ministries of health use similar strategies to deal with malaria, namely: appropriate management of febrile episodes in homes and health facilities (in the case of health facilities treatment is with ACT), protecting pregnant women against malaria by using Intermittent Preventive Treatment (IPT), vector control which includes encouraging populations at risk to sleep under insecticide treated nets (ITNs) and, in the case of the mainland, prompt recognition and response to epidemics. Larvicidal interventions are being carried out in the mainland while indoor residual spraying (IRS) is part of current policy both in the mainland and

Zanzibar but is not implemented in either case. Specific objectives, following the recommendations of Roll Back Malaria (RBM), have been set for all interventions by the mainland and Zanzibar malaria control programs.

Operationally these strategies involve demand creation through information, education and communication (IEC), implementation of the Integrated Management of Childhood Illness (IMCI) strategy in households and communities, training of private vendors, improved distribution of ITNs, use of a subsidized voucher system to make ITN ownership less expensive, establishment of early warning systems for malaria epidemics, and use of IPT and ITNs by pregnant women. In Zanzibar, Long Lasting Insecticidal Nets (LLIN) are distributed freely to high risk groups while in the mainland users pay a minimal fee to top off the voucher value (given to pregnant women during ante-natal visits). Current guidelines in both countries include spraying with insecticides when there is an epidemic in the mainland, while in Zanzibar, where spraying has been done before, the ZMCP wishes to re-start their IRS. Home treatment of malaria is encouraged but not overtly promoted. Most work of the NMCP and ZMCP is through direct support to districts with training and technical assistance, guidelines and, in some cases, financial support. Regions and districts in the mainland and Zanzibar are responsible for programming their own malaria activities.

To coordinate and direct actions, the NMCP and ZMCP have established various committees and task forces. In the mainland, the National Malaria Advisory Committee (NMAC) meets twice a year, at least in principle. Its purpose is to offer to the NMCP state-of-the-art technical advice on malaria control. The Inter-Agency Malaria Coordinating Committee in the mainland was set up to coordinate with RBM partners on issues of planning, monitoring and evaluation and funding. It is supposed to meet three times a year, but at this point it is not functional. For the mainland, there are four committees that deal with the various aspects of the program, namely: case management, vector control, monitoring and evaluation, and information, education and communication (IEC). ITN promotion is coordinated through the National Insecticide Treated Nets (NATNETS) Programme.

D. OVERVIEW OF EXISTING PARTNERS ACTIVITIES AND ROLES

The NMCP and ZMCP work in partnership with a variety of institutions, collaborating agencies and NGOs. Presently, partners include WHO, UNICEF, DfID, JICA, Swiss Development Cooperation, Italian Cooperation, MSF-Spain, Cooperation Ireland and USAID. Support is also received from the National Institute for Medical Research, the Ifakara Health Research and Development Center, Kilimanjaro Christian Medical Centre and Centre for Enhancement of Effective Malaria Interventions (CEEMI) financed by the Bill and Melinda Gates Foundation, and others.

From the financial point of view, the most important partner to the NMCP and ZMCP, is the Global Health Fund to Fight AIDS, Tuberculosis and Malaria (GFATM). Once PMI comes on line, it will be the second most important source of funding. The GFATM, in rounds one and four, has granted USD $62,992,399 to the mainland for support of ITNs and purchase of ACTs. Of the total USD $27,366,184 has been disbursed to date (July 2005). Zanzibar also received grants in rounds one and four totaling USD $3,573,297 for support of ITNs and purchase of ACTs.

Table 2 below shows collaborating agencies that support the NMCP and the ZMCP and the technical interventions that are supported. Some agencies provide long term technical assistance on the ground (Italian Cooperation, CDC) while others support specific activities. Some like the World Bank provide overall budget support to the MoH so in a way they may be considered to be involved in all aspects of malaria control.

Table 2: Main Malaria Donors to NMCP and Areas of Support

Agency	Diagnostics	ACT	ITNs			IPT	IEC Other	IRS
			ITNs Cell	ITNs Purchase	ITNs IEC			
DFID			●		●			
GFATM		●	●	●	●			
JICA	●			●				
Irish Aid								
Italian Cooperation[1]	●	●	●	●	●	●	●	
Royal Dutch Embassy			●					
Swiss Cooperation			●	●	●			
USAID						●		
CDC	●	●	●			●		
World Bank	●	●	●	●	●	●	●	●
WHO	●	●	●		●	●	●	
UNICEF				●	●			

[1] The Italian Cooperation provides a full time malaria professional who works in all areas of the NMCP and ZMCP.

In addition to the above, there are several hundred non-governmental organizations (NGOs) and faith-based organizations (FBOs) working in different aspects of malaria. Many of these organizations are grouped into to two umbrella NGOs—the Tanzanian NGOs Alliance Against Malaria (TaNAAM) and the Christian Social Services Commission (CSSC). Some data suggest that a full 40 percent of primary care services are provided by NGO and FBOs.[4] In rural areas this estimate can reach 60 percent or more. Given their ubiquity and breadth of capacity, NGOs are an important partner in rolling back malaria in Tanzania.

E. OVERVIEW OF EXISTING AND RECENT ACTIVITIES AND ROLES OF US GOVERNMENT

[4] Personal communication Christian Social Services Commission

Mainland Tanzania

Since 2001 CDC - Tanzania has operated a malaria program in mainland Tanzania through a cooperative agreement with the Ifakara Health Research and Development Centre (IHRDC), operating at $1,600,000 in FY 2005. A resident epidemiologist (S. Patrick Kachur) has been seconded to IHRDC since October 2003. The focus of the program is to provide NMCP and its partners with evidence of the effect of current and potential malaria control strategies. The program includes a five year pilot evaluation of artemisinin-containing antimalarial combination treatment (ACT) for routine treatment of malaria in one district with intense malaria transmission. To date more than 700,000 doses of ACT have been delivered in Rufiji District and a multidisciplinary evaluation is providing evidence for best practices in support of rolling out this intervention nationwide. The evaluation includes direct support to demographic surveillance systems in Kilombero, Ulanga and Rufiji districts covering more than 180,000 people and representing the single largest population under continuous demographic surveillance in sub-Saharan Africa. In FY2005 CDC contributed an additional $200,000 to adapt Demographic Surveillance Systems (DSS) to better evaluate maternal and perinatal mortality. CDC operates 3 sentinel sites assessing the efficacy of antimalarial treatment and has funded a longitudinal cohort evaluation of alternative ACT regimens. A pilot introduction of rapid diagnostic tests for malaria in rural health facilities is also underway. CDC also supports an evaluation of malaria prevention strategies for pregnant women through alternative regimens for intermittent preventive treatment (IPT). In FY 2005 the agency awarded $180,000 to the JHPIEGO/ ACCESS project to support enhanced delivery of malaria prevention in pregnancy through focused antenatal care. More recently, the agency, along with NMCP and IHRDC, has established a consortium of partners including Tanzania Food and Drug Authority, Medical Stores Department, Management Sciences for Health, Novartis Foundation for Sustainable Development which will evaluate alternatives for effective delivery of ACT through accredited drug dispensing outlets (ADDOs). The CDC resident epidemiologist provides technical assistance to the Tanzania National Voucher Scheme (NVS) through its consultative group and steering committee and serves on the NMCPs advisory committee for malaria treatment. CDC is currently assisting NIMR and UNICEF with an evaluation of an ITN distribution campaign targeting children under 5 in Lindi Region.

CDC provides technical support for the MOH's Integrated Disease Surveillance and Response (IDSR) program which records facility-based cause-specific morbidity data useful for tracking diseases of epidemic potential (including malaria in epidemic-prone settings). This support is coordinated through the WHO Regional Office for Africa. CDC Tanzania also supports MoH and the National Institute for Medical Research as well as a broad range of faith-based and nongovernmental organizations through the US President's Emergency Plan for AIDS Relief (PEPFAR). This includes comprehensive support for HIV surveillance, care and treatment, prevention of mother to child transmission, blood safety and prevention.

USAID/Tanzania's implementing partners include the ACCESS project, managed by JHPIEGO and focused on malaria in pregnancy, the T-Mark project managed by Academy for Educational Development (AED) focused on social marketing and communications, the DELIVER project managed by John Snow International (JSI) which is focused on a malaria program advisor (Dr. R. Salgado) and drug management and logistics systems, and the Ministry of Health via the Zonal Training Centers in Arusha and Iringa regions. USAID/Tanzania's malaria portfolio for FY2005 includes activities in Focused Ante-Natal Care (FANC) which includes IPT, Communications, collaborative support for the Malaria/IMCI District Focal Persons training program of the MOH

via the Center for the Enhancement of Effective Malaria Interventions, as well as support for improved drug management and logistics capacity.

Zanzibar

CDC Tanzania has provided technical guidance to ZMCP in developing interventions to support the roll out of ACT on the islands in 2003. It also supported a baseline survey in sentinel communities prior to the introduction of the new therapy.

F. GOAL AND TARGETS OF THE PRESIDENT'S MALARIA INITIATIVE (*by 2011*)

By the end of the project, partners will reduce malaria-related mortality in mainland Tanzania and Zanzibar by 50% when compared with pre-PMI levels. After three years of full implementation (in 2011), the PMI will provide resources to assist each country to accelerate the attainment of the following targets in populations at risk for malaria. Currently, 93% of the population is considered at-risk for malaria, including about 25% who are at risk for epidemic malaria.

Targets apply for both the mainland and Zanzibar, except where noted.

- 85% of children under five will have slept under an ITN the previous night;
- 85% of pregnant women will have slept under an ITN the previous night;
- 85% of pregnant women will have received two or more doses of IPT during their pregnancy;
- 85% of houses targeted for IRS will have been sprayed in Zanzibar and the mainland;
- 85% of children under five with suspected malaria have received treatment with an antimalarial drug in accordance with national malaria treatment policies within 24 hours of the onset of their symptoms.

G. MONITORING AND EVALUATION PLAN

The Ministry of Health recently revised its facility-based national Health Management Information System (HMIS). It is a relatively bulky system that— aside from overall utilization figures--provides little information useful to the National Malaria Control Programme. Instead NMCP (mainland) and ZMCP conduct health facility and community surveys, roughly every 2 years. These surveys are used to track indicators developed by the Roll Back Malaria partnership and include coverage estimates for the key interventions. Coverage estimates of major indicators at baseline are available from the 2005 assessment on the mainland and 2004 on Zanzibar (Table 1). Follow-up surveys are planned in 2007 and 2008, respectively. Resources to complete these follow-up assessments, or to conduct them in a more statistically robust manner will be needed.

These surveys are conducted quickly but do not include representative sampling. Demographic and Health Surveys are, however completed in a nationally-representative sample and can be a much more reliable source of data on maternal, infant and child mortality as well as household and individual coverage for specific malaria interventions. A WHO-AFRO/USG initiative for integrated disease surveillance and response can be adapted for detection of malaria epidemics in the relevant

districts. Funding mechanisms directly to NMCP and ZMCP can be established through CDC cooperative agreements with the 2 ministries of health.

Tracking the progress toward PMI goals of reducing malaria-related mortality will require additional monitoring and evaluation investments. There is no routine registration of deaths in Tanzania, and methods like the DHS do not produce data on cause-specific mortality. Tanzania is fortunate, however, that a number of districts include populations participating in continuous demographic surveillance systems (DSS). These large data collection systems have been used effectively in the country to evaluate the impact of health interventions like insecticide-treated materials and IMCI. A system of 58 villages is currently being used to evaluate the introduction of ACT. It should be noted that these DSSs are usually established for specific research projects and operate in limited geographic areas. Expanding the approach to additional sites would be helpful for documenting the public health effects that PMI should achieve. Funding mechanisms to support expansion of DSS exist with CDC and USAID Tanzania.

Progress in implementing PMI interventions will be assessed through regular review of process indicators completed by the USG agencies and their implementing partners. Once implementing partners and activities are identified, USG and NMCP /ZMCP staff will work with partners to develop a coordinated monitoring and evaluation plan. These will be adapted to the specific situations for mainland Tanzania and Zanzibar. The PMI country team will convene malaria control officials and implementing partners for a quarterly review of progress toward achieving planned objectives for delivery of malaria interventions. This can be the basis for an early warning system to detect bottlenecks, resolve potential conflicts, and ensure rapid, efficient deployment of resources. This quarterly process can also be an opportunity to track financial objectives of the PMI and monitor private sector involvement. Likely private-sector partners include: large-scale employers; net manufacturers, distributors and retailers; pharmaceutical suppliers and accredited drugs dispensing outlets; Bill and Melinda Gates Foundation and Novartis Foundation for Sustainable Development; Medicines for Malaria Venture; and Coca-Cola Kwanza Bottlers.

Other information needed to optimize delivery of malaria interventions can be obtained by carefully evaluating pilot interventions in select areas. Interventions to ensure equity of access to LLINs, particularly among most vulnerable groups, should be explored through a community-development focused NGO. The public health impact of introducing malaria diagnostics for children under 5 in areas of intense transmission and information on the utility of improved diagnostics on prescription practices should also be carefully evaluated. Initiatives already underway on Zanzibar and planned for the mainland could be expanded or supported with supplies of diagnostic test kits. Expansion of ACT in subsidized childhood doses through private sector pharmaceutical retailers is legally possible in Tanzania, but this approach should be carefully managed on a limited scale before being widely implemented. Support for these types of phased implementation could be accomplished through direct purchase of the required commodities and/or through existing funding mechanisms that both CDC and USAID operate with non-governmental partners.

H. EXPECTED RESULTS – YEAR ONE

Expected results for the mainland and Zanzibar are similar as far as percentage increases expected. The one difference is IRS, where the expected result applies only to Zanzibar.

Prevention:

- Proportion of pregnant women who receive two or more doses of IPT during their pregnancy is increased nationwide by 30% above the baseline (49 percent in 2003)
- Proportion of children under five sleeping under an ITN the previous night increased by 20 % above the baseline for mainland (26% in 2003) and 60% increase above baseline for Zanzibar (37% in 2004)
- Proportion of pregnant women sleeping under an ITN the previous night increased by 50% above the baseline for mainland and Zanzibar.
- 70% of houses targeted for IRS have been sprayed on both the mainland and Zanzibar

Treatment:

- Malaria treatment with ACTs implemented in health facilities in 50% of districts nationwide
- At least 50% of children under five with suspected malaria attending a government health facility receive treatment with an ACT

Table 3: Targets for changes in selected indicators for PMI countries- impact of Year 1 funding

Country	IPT		ITNs (<5's)		ITNs (Preg women)		IRS (targeted houses)		ACTs	
	Base-line	Year 1	Base-line	Year 1	Base-line	Year 1	Base-line	Year 1	Base-line	Year 1
Tanzania: Mainland	49%	64%	26%	31%	21%	32%	0%	70%	27%	50%
Zanzibar	49%	64%	37%	59%	38%	57%	0%	70%	10%	50%

I. PLANNED ACTIVITIES AND EXPENDITURES

A total of US $11.5 million is requested for first year PMI activities in mainland Tanzania and Zanzibar. Approximately 59 percent will be expended on commodities. The key commodities to be procured are related to ITNs, IRS, RDTs and ACTs. Because of the desire by both the NMCP and ZMCP to rapidly begin implementation, a substantial proportion of the budget will need to be available in the first semester of US FY2006.

Planned activities for mainland Tanzania and Zanzibar are the result of a consultative process that engaged national authorities, development partners, the private sector, NGOs, and FBOs. A rapid assessment by USAID, CDC and WHO identified the main issues facing the NMCP and ZMCP. Almost all agencies and individuals working in malaria in Tanzania and Zanzibar were consulted during the RA. A follow up consultative meeting was convened for the mainland and another for

Zanzibar in which priorities and issues were discussed with interested parties.[5] Attendance to both meetings was by more than 60 individuals representing somewhere between 40 – 50 agencies. The planned activities described in this document are the result of the consultative process.

All interventions supported by PMI are included in this first year work plan, with the exception of IPT. USAID – Tanzania and CDC – Tanzania have already committed funds from their local budgets to IPT, so it is estimated that for the first year work plan no additional funds will be necessary. Support is through the ACCESS project to implement Focused Antenatal Care, including IPT.

J. INTERVENTIONS - PREVENTION

Proposed USG Component for mainland Tanzania:

Intermittent preventive treatment of malaria in pregnancy (IPTp)

Current Status

The MOH policy for ante-natal services includes IPT with two doses of SP to be given in the second and third trimester of pregnancy. Implementation of this policy began with cascade training from national to district level, with the expected result of at least two trained trainers in each district. The District Council Health Management Teams (CHMT) are responsible for funding and implementing health facility training within their districts. This implementation has been described as very spotty. A survey of non-randomly selected health facilities undertaken by the NMCP in mid-2005 found that 80 percent of pregnant women attending ante-natal care (ANC) clinics had received IPT with SP. The Demographic and Health Survey (DHS) conducted in 2004 found that 94 percent of pregnant women had attended ANC at least once, but only 18 percent reported receiving IPT. The DHS data is likely an under-estimate, and somewhat misleading, as the time period covered by the DHS is five years, and the IPT implementation has only been in the past year.

As part of the Tanzania National Voucher Scheme (TNVS) to provide subsidized ITNs to pregnant women via ANC, World Vision and CARE began providing training that includes IPT, at the sub-district level in September 2004 for ANC staff . This TNVS training has reached approximately half the intended health workers--3216 providers trained as of June 2005. World Vision and CARE anticipate completing the training across the country by February 2006, and to complete mopping up training by June 2006.

Gaps in the IPT program identified by partners included supply irregularity due to poor drug management practices in some districts and facilities, a lack of a strong and coherent communications strategy to address consumer and provider concerns about SP lingering from some sensational press coverage early in the policy change process to SP back in 2001, and inadequate supervision at the district level. Both World Vision and the JHPIEGO/ACCESS project are planning to address improved supervisory tools and training for Focused Ante-Natal Care (FANC) in the next year, in conjunction with the Reproductive and Child Health Unit at the MOH.

[5] Narrative Reports from Consultative Meetings.

USAID/Tanzania has invested $700,000 in FY 2005 funds in the JHPIEGO ACCESS project to strengthen the implementation of IPT in Tanzania. These funds, plus an additional $187,000 grant in FY05 funds from CDC, are sufficient to provide for the intended activities planned with the MOH for completing the roll-out of IPT in Tanzania. The MOH has included procurement of SP for IPT in their annual budgeting process, and the NMCP assures us that there is no further need for PMI support for the IPT program in 2006. This status will be reviewed in late 2006 when the 2007 plan is prepared.

Insecticide-treated nets (ITNs)

Current Status - Mainland

Tanzania has a very strong ITN program, with a long history of strong public private partnership unique in Africa. The partnership is described in detail in the Rapid Assessment report (see Table 3), but the key points are the coordination of ITN activities through the ITN cell in the NMCP, the Tanzania National Voucher Scheme (TNVS), which distributes discount coupons to pregnant women which provide them with the ability to purchase nets from private retailers at about an 80% discount; and the SMARTNET project which coordinates public-private partnership interests. As described in the PMI Tanzania 5-year strategy document, the plan for ITNs will focus on rapidly expanding ITN coverage. This will be done via three related lines of work.: expansion of the TNVs to infants, a safety net for ensuring equity and the transfer of technology for LLINs to local manufacturers.

Table 4: ITN Partners in Tanzania

Partner and activity	Commodities	Services	Salaries	Technical Assistance	Other support
SDC/STI ITN cell	--	--	580,000	500,000	200,000
TNVS	$12,000,000	3,500,000	--	4,300,000 850,000	125,000 60,000
DfID Smartnet	$8,000,000	3,240,000	2,800,000	--	--
DCI					
JICA	$250,000	400,000	--	--	--
UNICEF	$700,000	50,000	--	--	--

Expansion of the TNVS to Infants (USD $3,207,000)

As described in the PMI Tanzania 5-year strategy document, the plan for ITNs will focus on rapidly expanding ITN coverage. The TNVS will be rapidly extended to include infants as well as pregnant mothers across the mainland. In this way, under-5s will be assured of having a net once the child is old enough to leave the mother's bed. In the first year, more than half the regions of Tanzania will

begin distributing vouchers to mothers or caretakers of infants receiving vaccinations at immunization posts. These vouchers provide families with a subsidy of about 80% the retail price of an ITN, putting ITNs in the reach of about 65% of Tanzanian households. Currently the TNVS for pregnant women reports an 87 percent voucher redemption rate. For the remaining households, the PMI will begin implementing a program in at least 3 districts to guarantee LLINs are available to underprivileged households with pregnant women or infants, described below. This activity will be implemented in conjunction with the ongoing TNVS voucher scheme for pregnant women funded by the GFATM. The FBO MEDA has the contract from the NMCP for the logistic management component of the TNVS. The PMI can achieve significant savings by "piggy-backing" on this existing activity to distribute vouchers for around 1 million ITNs in the first year for a relatively minor additional investment for administrative and logistic, according to MEDA. World Vision and CARE have existing contracts for the training and promotion of the TNVS, and can easily adapt their activities to include the new infant voucher with similar savings. Other than the technical assistance provided under sub-grants to NGOs, PMI will not need to provide additional technical assistance.

The NMCP considers the TNVS a highly sustainable program, in that the partnership with the private sector and the donors creates a sustained demand for ITNs in the unsubsidized market as well. It is hoped that over time, as ITNs become an accepted part of daily life, the need for subsidies from donors will decline. This activity is of the highest priority to the NMCP.

Timeline - Expansion of TNVS

A first step in this activity will be to negotiate with the development partners the different contributions each will make to the expansion. Because the voucher will be used distributed via immunization clinics rather than ante-natal clinic, it will be necessary to conduct a brief re-training to update health workers and vendors. It may be necessary to provide subsidies to some vendors, at least initially, as vendors will experience a growth in sales as a result of more vouchers being given out. The NMCP has scheduled a mass re-treatment campaign as part of this intervention to convert regular nets to LLINs using KO tab 123.

The "Safety Net" Program –Ensuring equitable coverage of ITNs (USD $590,000)

The TNVS strategy relies on market-based delivery of nets and a targeted subsidy for pregnant women, and eventually infants. It does require a small co-payment of not less than 250 TSh, which still may be too much for some very poor families to part with. For this reason, the approach may lead to lower levels of coverage among the poorest members of the community—precisely those most in need of an ITN. While there is a village-based system which states that local leaders are to compile lists to allow very poor families to be exempt from cost sharing at health facilities, this system appears to not function well in many villages. PMI will support development of a pilot structure to identify the most vulnerable households least able to afford even a subsidized net and collaborate with faith-based organizations and community leaders to provide them with fully subsidized nets. This system will explore a range of subsidy options, beginning with a full-price voucher via the TNVS. The Tanzania Social Action Fund (TASAF) financed by the World Bank is likely to be a partner in this activity. Once mechanisms are established and proven to be workable and fair, it can be scaled up in subsequent years. Partners in this activity are the SDC and DfID. A

subset of this activity will be reaching persons living with HIV/AIDS with LLINs. This activity will be coordinated with the PEPFAR activity already under way in Tanzania. Technical assistance will be provided through the sub-grants to faith-based organizations that will be contracted to implement this activity.

Timeline – Safety Net

One of the first steps for this activity will be to decide what scheme(s) to use for making the ITNs available. A concurrent task will be to negotiate with partners on best approaches to ensuring equity in the TNVS. Also with partners, a selection of focus districts will be made. Depending on the scheme adopted, materials will need to be developed or adapted. Constant supervision and monitoring will be required as there is potential for leakage in this activity.

LLIN technology transfer (USD $600,000)
[Pending review by Steering Group]

The third element of our ITN strategy, is technology transfer for LLIN production to the major private sector producers of nets in Arusha and Dar es Salaam. This supports both President Bush's emphasis on Public-Private Partnerships in the PMI as well as the Government of Tanzania's ITN strategy. This strategy will rapidly change the proportion of nets in the country which are long-lasting nets (LLINs), a specific priority of the PMI. While the PMI will work with the NMCP, other donors and the private sector to move toward provision of more durable LLINs, the first year will concentrate on significantly improving the manufacture and longevity of the current insecticide treatment through existing mechanisms.

Tanzania has a unique manufacturing base in Africa for the local production of insecticide-treated nets. In past years, this base has been supported by the NMCP via DfID funding and the GFATM, and has resulted in a highly-competitive domestic market for ITNs. This competition, combined with the Government of Tanzania's removal of taxes and tariffs on mosquito nets, has resulted in dramatic drops in the market prices of ITNs, the nationwide mandate that all nets be sold bundled with an insecticide treatment kit (funded by DfID), and uniquely high numbers of nets sold on the commercial market with no subsidy (beyond the insecticide kit). The USG PMI plans to support this successful example of competitive market economics with technical and material assistance to speed the transition of this manufacturing capacity from the production of bundled ITNs to true long-lasting insecticide-treated nets. This transition will not only directly contribute to the PMI's targets for Tanzanian coverage (through increasing the proportion of nets in use by households which are active in terms of insecticidal effect, ie, an "ITN") rather than simply a net), but will also provide a huge boost to the entire region. The Tanzanian manufacturers supply a large proportion of the ITNs currently procured by Zambia, Malawi, Uganda and Kenya.

USAID has experience in this area from its Netmark project, which has been developing the technology being discussed with its partners. Drawing on this experience, USAID suggests that in transferring LLIN technology to commercial firms the PMI should follow a "joint risk*joint investment" approach and definitely not rely on a full equipment handout to private companies. To ensure sustainability and productive use of donor support, the commercial firms must also invest their own funds from the beginning. There are three cost components for transferring the NetMark

LLIN technology: 1) treatment equipment; 2) insecticide; and 3) technical support and training. To encourage the adoption of an LLIN technology, donors could offer to contribute in one or more of these areas based on a detailed MOU that defines roles, expenditures, and performance requirements (e.g., the production of a set number of LLINs within a certain period) of each of the parties. With interest rates of 25% or more in many African countries, some level of financial support is important to help a company invest and generate income for further expansion quickly. The parameters of joint investment should be sorted out on a case-by-case basis to fit the company's current circumstances.

1) Equipment: Companies are generally always ready to invest in equipment that adds to their capital stock and provides them with additional production capability; however, given high interest rates, the donors could offer to pay for a percentage of the equipment cost and/or, if t he equipment if purchased from a U.S. manufacturer, see if the ExIm Bank would provide low cost financial support to help the deal happen.

2) Insecticide: A continuous supply of insecticide formulation is needed that will probably cost $1 to $1.50 per treated net. A donor could offer to provide several months supply of insecticide to help the production process get started and help the company generate some working capital if it has already used its funds to purchase the equipment.

3) Technical Assistance: Help will be needed with installation and the training of staff to run the equipment and chemical feed system and to test the finished LLINs on a regular basis. The insecticide manufacturer may provide some free T.A. if a net company signs a long-term agreement to buy its insecticide. The equipment needed to set up a full testing lab costs about $80,000 using current technologies. There may also be a need for some marketing support to help identify the market for these LLINs and even line up potential buyers therefore decreasing the risk of making the investment.

Finally, with the transfer of technology comes a need to ensure that LLINs produced by partner companies maintain an acceptable level of quality. In order to do this the USG PMI should provide TA and some incentive within the joint-investment model to ensure adequate in-house quality control capacity. Each company must have the proper equipment, staff and training in quality assurance. This is an area where many companies are not likely to make adequate investment, and should be strongly supported within any MOU with companies. The PMI and other participating donors should also consider on-going TA and support to local or regional regulatory agencies who could serve as independent quality control reference centers to protect donors, NGOs and consumers from sub-standard LLINs coming on to the market.

We anticipate that via a donor consortium that includes USG, DfID and the SDC, the three largest manufacturers in Tanzania, producing about 96% of the total net production, can receive the know-how and equipment necessary to produce polyester LLINs. In conjunction with this support, the USG will advocate for the imposition of regulatory standards requiring that nets produced for sale in Tanzania are stronger (at least 100 denier) than currently is the case. More durable nets will provide more efficient subsidies for donors, reduce the number of nets needed to provide the optimal 59 months of protection needed for each child (from conception through their 5th birthday), and reduce costs for Tanzanian households over the long term. The USG will collaborate with DfID in developing a package of assistance for the private sector net manufacturers. DfID is introducing a long-lasting treatment kit beginning in early 2006 (the KO Tab 123 from Bayer) to be

bundled with all nets produced for the Tanzania market. All agree that the bundled net approach, while a vast improvement over untreated net sales, does have major limitations and that manufacturing LLINs instead would be much better.

Timeline – LLIN technology transfer

Plans will be developed between November 2005 and March 2006 for the assistance package and the Memorandum of Understanding between the private sector manufacturers, the donors and the GoT. PMI representatives will meet with the NMCP and partners to develop a strategy for approaching the manufacturers. The NMCP and SMARTNET have been working with the manufacturers for several years now, and it has been agreed that they will lead the effort rather than PMI try to develop a new relationship. Once assurances are obtained from manufacturers of their interest in accepting a technology transfer and the obligation that this will entail, an assessment will be carried out of each to evaluate their needs and pattern PMI's support in the best possible way. Detailed specifications and a timeline for procurement, installation, testing and production will be worked out with the manufacturers. Quality assurance mechanisms will be developed and implemented.

Zanzibar LLINs Jump Start (USD $580,000)

The GFATM Round 4 Grant to the Zanzibar MOH provides funds for the provision of LLINs to pregnant women and children under 5 throughout Zanzibar. It is anticipated that the distribution will be free of charge and delivered via the public sector health facilities. PMI will accelerate this distribution and assist the ZMCP to reach their coverage targets by providing approximately 130,000 LLINs to Zanzibar for free distribution in December, 2005. These nets have already been ordered, and will be in Zanzibar by December 19, 2005. Negotiations and planning activities are underway with the ZMCP and NGOs to design the most effective methods for equitably and efficiently distributing the LLINs to ensure the nets go to the target populations and that householders are helped to deploy the nets for effective use. Nets hung immediately after receipt are much less likely to "leak" or be sold, and to be used by the intended recipients. The T-Marc project is already providing technical assistance in all aspects of the launch. The President of Zanzibar is scheduled to attend the launch.

Generic ITN promotion in Zanzibar

ITNs are only effective when they are used, which requires the consumer to be aware of not only the value of the net in preventing malaria, but also that it needs to be deployed properly every night and that young children and pregnant women should be given priority for sleeping under the net. This generic promotion is linked to the Zanzibar Jump Start for LLIN distribution. The approximately $50,000 for this activity is provided by USAID/Tanzania via its T-Marc project using FY 2005 funds, so it is not listed in the budget table in this document.

Indoor residual spraying (IRS)

Current Status:

There are currently no IRS activities being implemented in either in mainland Tanzania or Zanzibar, although some limited procurement of IRS equipment and insecticides is reported in selected epidemic-prone districts. IRS has been done before in both the mainland and Zanzibar with good results. However, once the donor resources stopped, both the mainland and particularly Zanzibar, were left in a weakened position with resurgent malaria and higher case fatality rates due to the reduced natural immunity of the population.

Proposed USG Component:

IRS and response capacity in epidemic-prone districts (USD $600,000)

Significant support will be provided to the NMCP to establish effective IRS capacity in epidemic-prone districts on the mainland, as described in the Epidemics Surveillance and Response Section L on page 23.

Indoor Residual Spraying in Zanzibar (US $2,050,000)

Zanzibar has proposed a vector control program that would include an initial round of indoor residual spraying accompanied by a rapid scale up of LLINs procured with a mix of GFATM and PMI resources. The Government of Zanzibar has specifically requested support for this activity. From the President of Zanzibar to the Minister of Health to the Permanent Secretary all are in agreement that IRS in needed in Zanzibar. A letter to this effect has been written by the Permanent Secretary directed to USAID – Tanzania. The PMI will provide the IRS component, as well as augment the rapid provision of LLINs to target populations. This approach is both scientifically and logistically feasible. Currently, coverage of insecticide treated bed nets in Zanzibar is low. However, Zanzibar does have the capacity to achieve high coverage with IRS. A single round of spraying would reduce vector abundance and malaria transmission for 6 months allowing for the scale up of ITNs. This approach essentially includes an "attack" phase of indoor residual spraying followed by a "maintenance" phase of ITNs. Once achieved, high coverage of ITNs is likely to reduce the malaria transmission from meso- to hypo-endemic levels. Steps must be taken to ensure continued high coverage of nets and rapid treatment of malarial fever. The surveillance system will be tailored to monitor closely increases in malaria incidence, which could be prevented with the rapid deployment of IRS teams. IRS capacity will be retained for targeted spraying in areas with persistent or re-emerging transmission. IRS will continue until epidemiological and entomological monitoring indicates it is not longer necessary—transmission has dropped to levels where the LLINs can be expected to maintain low transmission without further routine IRS.

IRS Timeline

IRS in mainland Tanzania and in Zanzibar will be managed concurrently. The timeline is similar for both countries. The activity starts with an environmental assessment in Tanzania and Zanzibar (Dec 2005), followed by procurement of IRS commodities (First quarter of 2005), training of IRS Teams (June –Aug 2006), spraying of targeted areas (Sep – Nov 2006) and entomological data collection for

the first phase of the activity (June 2006). Technical assistance during the first two years by Research Triangle Institute will ensure that IRS in conducted according to internationally accepted standards.

Urban Malaria Control in Dar es Salaam (USD $200,000)

Dar es Salaam contains approximately 10% of mainland Tanzania's population, many of whom live in the peri-urban areas where this project has documented transmission of malaria. Entomology studies have shown that the Anopheles mosquito vectors in urban Dar es Salaam are biting primarily outdoors, and in early evening hours. This means the standard PMI indoor interventions of LLINs or IRS will not be effective in preventing malaria in this setting. Urban Dar es Salaam consumes a large quantity of anti-malarial treatments in both public and private facilities. The municipality is developing plans to improve diagnostic procedures in conjunction with this mosquito control project to reduce misdiagnosis of fevers as malaria. Reducing this consumption will free up urgently needed supplies of ACTs for the rural populations, which are more likely to really need these drugs.

This project is an on-going PPP with strong involvement by the municipal governments of Dar es Salaam. This strong participation by local government authorities builds the human resource skills in supervision and monitoring, as well as the political commitment for malaria control to ensure long-term sustainability of this mosquito control program. The PMI contribution will consist of supporting the application of the Vecto-bac ® larvicides being donated by Valent BioSciences and the epidemiological and entomological monitoring to ensure the proper targeting and impact of the intervention. The PMI contribution to the 2006 activities will provide approximately 50% of the total cost of the activity, with the remainder being provided by the other partners and the recipient communities. Partners include: Dar es Salaam Municipal government, Valent BioSciences, Swiss Tropical Institute, Wellcome Trust, JICA, Bill & Melinda Gates Foundation, USAID

Entomological monitoring for mainland and Zanzibar (USD $50,000)

Introduction of free LLINs on Zanzibar and expansion of TNVS on the mainland will require some additional monitoring of ITN coverage, LLIN effectiveness, and mosquito surveillance which is not currently planned. Capable researchers and facilities for these assessments (net bioassays and experimental huts) are present in country and could take the lead on these activities with support from CDC experts. In addition, longitudinal monitoring of vector populations has been ongoing in 3 districts on mainland and could be extended to observe the effect of improved ITN coverage on mosquito vector populations, which could serve as an early indicator of the potential effectiveness of the strategy. Ongoing entomologic monitoring in 5 sites on Zanzibar, will have 1-year's worth of data in January 2006, including insecticide resistance studies. PMI funds will build on that base to ensure that the IRS is having the intended effect of rapidly reducing transmission, and to provide the ongoing basis for evaluating the continued need for IRS in areas in which EIRs remained high, showing continuing high levels of transmission.

Timeline – Entomological monitoring

Most systems for this activity are already in place. The main decision will be when to conduct monitoring. It is expected that for the mainland it will March to September, during the main rainy season. For Zanzibar it will be 6 months to 1 year after introduction of ITNs and IRS

K. INTERVENTIONS – CASE MANAGEMENT

Malaria diagnosis and treatment (Case management)

Current Status - Mainland

The most important issue facing the NMCP regarding case management of malaria is the issue of the introduction of ACT[6]—both in respect to costs as well as re-training of health workers. Availability of ACT may be an issue, but at present, WHO has assured the supply, at least for the first half of 2006. Estimation of costs for ACT in the mainland did not include any subsidies to the private sector, nor took into account the ACT needs for the refugee camps in western Tanzania. Costs of the ACTs in the public sector, at least for the first two years come from GFATM. It is expected that new proposals to GFATM will include financing of ACTs beyond the first two years. PMI will not procure ACTs in the first year of the project (except in support of the ADDO activity) since the GFATM will fulfill all needs in the public sector.

Approximately 9,000 health workers will need to be trained in the use of ACT. Training of regional and district trainers has begun and is expected to be completed by November 2005. Resources for training at the district level have been included in the NMCP work plan, however they are deemed insufficient. Support to this training has benefits beyond teaching health workers how to use ACTs as the training includes IPT, drug management and management of severe malaria. Resources for follow up and supervision are also missing. Given that IMCI includes case management of malaria in children under five, it will be necessary to also provide support to IMCI training.

In the private sector a new class of drug shops are authorized to sell a limited list of treatment-only medicines--the Accredited Drug Dispensing Outlets (ADDO). These ADDOs will be privately operated outlets authorized to sell a range of essential drugs classified as prescription-only with training and supervision from national and local drugs regulatory authorities. Currently only about 100 ADDOs exist in the Ruvuma Region where the concept was pilot-tested by TFDA and MSH's Strategies to Enhance Access to Medicines project (SEAM) funded by the Bill and Melinda Fates Foundation. In 2005-2006 the program will be rolled out to 2 additional regions: Morogoro, with support from USAID, and Rukwa, with direct support from the Government of Tanzania. No resources are as yet available for providing a subsidized ACT through these shops, but it would be relatively straightforward opportunity for a public/private sector initiative.

The advent of ACT, which is significantly more costly than current SP, has motivated the NMCP to look for ways of increasing diagnostic accuracy. One way to improve diagnosis, and, potentially, reduce costs, is the rapid diagnostic test (RDT)[7]. These tests require minimal training (no

[6] The ACT chosen by the NMCP is a fixed-combination formulation of artemisinin, Artemether-Lumefantine (Coartem®)
[7] RDTs are also known as "Dipsticks" or Malaria Rapid Diagnostic Devices (MRDDs)

microscopy is involved), are low in cost (USD $0.50 -$0.90 depending on the type of test) and give results relatively fast (10--15 minutes). The main drawback to the tests is that some of them are unstable in areas of high temperatures and humidity and would require a "cool" chain to maintain their accuracy. WHO recommends the use of RDTs in adults, pregnant women and children over five in areas of low to moderate malaria transmission.

Current Status - Zanzibar

Zanzibar has already introduced ACTs and the majority of its health workers have been trained. Current supplies and projected deliveries of artesunate and amodiaquin are adequate for 2006, according to the ZMCP, hence the PMI will not procure additional ACTs for Zanzibar in 2006. But as with the mainland, there is concern about costs and what will happen if the GFATM funds dry up (2007). In collaboration with Medecins sans Frontieres (MSF) and others, the ZMCP has implemented a pilot project using RDTs. Preliminary results show that up to half of fevers clinically diagnosed as malaria were not corroborated when an RDT was done. This has motivated ZMCP to want to introduce RDT in the whole of the Zanzibar.

Proposed USG Component

The PMI proposes the following interventions for case management of malaria: 1) Introduce RDTs; 2) Top up NMCP resources to train health workers for the ACT roll out; 3) Provide subsidized ACTs to ADDOs; 4) Strengthen Medical Stores Department's capacity to deal with the ACT roll out; 5) Improve the management of severe malaria; and 6) provide ACTs to refugee camps in western Tanzania.

Introduction of RDTs in districts in mainland and Zanzibar (USD $500,000)

The NMCP and ZMCP will receive resources from PMI to implement RDTs in a limited number of districts and on a trial basis. RDTs will be executed in strict accordance to WHO recommendations. The success of this activity will have important ramifications; at the individual level, it will facilitate better quality care; at the public health/financial level it has potential for reducing the costs of ACTs significantly. PMI is aware that it is critical that health workers be prepared to deal with patients when RDTs results are negative and will make sure that counseling skills are emphasized during training. In the mainland, resources will allow for implementation of RDTs in approximately 5 districts. In Zanzibar, resources will permit the introduction of RDTs in 3 districts. The total beneficiary population will be approximately 3 million. In both cases, quality assurance protocols will be established, based in part on the Zanzibar experience, and careful monitoring of the impact of RDT on the use of ACTs will be done. If the results of the trial are encouraging, then PMI may consider expanding the use of RDTs to other areas. This activity will last at least one year with the possibility of expansion in the following years. Once the first phase is completed an assessment will be conducted to see if RDTs are a workable alternative in Tanzania. PMI will take on as partners

IHRDC in the mainland and MSF in Zanzibar. No additional technical assistance will be required other than that provided already by PMI advisors on the ground.

RDT Timeline

This activity will begin with the selection and procurement of RDTs (Dec 2005), followed (or concurrent with) by selections in mainland Tanzania and Zanzibar of target districts (Dec 2005). Shortly after, adaptation of the training materials will be done over a period of two months (Jan 2006 - March 2006), subsequently national teams will train trainers in the districts (April 2006) followed by a two and one half period of health worker training and deployment of RDTs. An evaluation of the effectiveness of RDTs and preparation for expansion if the results are positive.

Support to training for ACT roll-out in mainland (USD $500,000)

PMI will provide resources to be applied at the district level for training health workers in the periphery on how to use ACTs in mainland Tanzania. These PMI resources will complement other donor, GFATM and governmental resources already in place. The PMI team will work with the NMCP to plan out the training roll out. The importance of this activity is rooted in the fact the NMCP does not have the financial resources to complete training. Only half of the needed budget for training is available. Given that one of specific objectives of PMI is to make available high quality case management of malaria, it stands to reason that PMI resources be used to complement and complete the task of training all health workers. Some of these PMI resources will ensure that health workers are followed up and supervised and quality assurance mechanisms are in place. The IMCI – malaria link will be emphasized and some PMI support will be provided to training in IMCI. It is expected that 100 percent of health workers in facilities will be trained in ACT by the end of the planning year. The expected contribution to PMI goals is that health workers will be prepared to provide appropriate case management of malaria and use of ACTs. This activity will come on line as the NMCP begins the distribution of ACTs and gaps are identified. More than half of the resources (i.e. USD $600,000 of the required USD $1.1 million)) are already budgeted from GFTAM and GoT funds. PMI will insist that special provisions por persons living with HIV/AIDS are part of the training curricula. No direct technical assistance will be needed for this activity.

Timeline – ACT Training

PMI will work with the NMCP to determine the actual amount of the shortfall (Dec 2005) and then proceed to identify an appropriate mechanism for its disbursement. It has been suggested that an experienced NGO be given a grant to support the training in the field. This mechanism has been used successfully for the Tanzania National Voucher Scheme.

Provide subsidized ACTs to ADDOs in mainland (USD $300,000)

ADDOs are a key ally in making sure that appropriate case management is available to those that need it. PMI will subsidize ACTs for use in ADDOs. The rationale for this activity is that a significant proportion of fevers (up to 70 percent) are managed in private sector dispensaries,

pharmacies, etc. The advent of ADDOs makes available an opportunity to capitalize on private sector entrepreneurship and to reach individuals who seek help in the private sector. Very few PMI resources will be used for training ADDO operators on the new malaria treatment, the majority will support the procurement of ACTs. Overall training, and supervision, as well as resources to expand the ADDO model are already available from other sources. As with public sector training, the ADDO training will emphasize counseling to ensure that patients leave facilities with a clear understanding of how to take the medication and when to come back. This activity will be implemented following the successful experience the SEAM project has had with ADDOs. This activity is the first phase of expansion of the ADDO scheme. Partners for this activity will the RPM+, SEAM project, TFDA, IHRDC, CDC, and, potentially, the Bill and Melinda Gates Foundation. Technical assistance will be provided by RPM+ through periodic visits and support to MSD.

Timeline -- ACTs to ADDOs

In coordination with NMCP, district and ADDOs will be selected in the first step of this activity (Jan 2006). RPM+ has developed materials for training for ADDOs, it is expected that no major revisions will be necessary, nonetheless a quick of review and adaptation will be done, especially in regard to counseling (Feb 2006). Training will be completed over one month, ending in mid March 2006. Beginning in mid February, or earlier, the supply of ACTs will be secured. As with other activities, monitoring and supervision will be constant through the activity.

Improve management of severe malaria (USD $500,000)

For PMI to have impact on malaria mortality actions need to be taken to improve the management of severe malaria from the level of the household to health facilities. PMI will provide resources to train health workers in the periphery and at higher level health facilities to improve the management of severe malaria in 3 pilot districts. Treatment options for managing severe malaria include rectal artesunate, intra-muscular artemether and intra-muscular and IV quinine. Protocols currently exist for peripheral workers to give pre-referral treatments and for situations where referral is not possible. Even so, children rarely receive these treatments and often die without reaching the referral centre. A comprehensive approach will be introduced to enhance mother's recognition and response to potentially severe illness, improve pre-referral care at peripheral level, enhance caretakers' ability to complete referral, improve treatment of severe malaria in health centers and hospitals, and provide malaria prevention for children who survive severe malaria and their siblings.

Strengthen Medical Stores Department's capacity to deal with the ACT roll out (USD $440,000)

The USAID-CDC rapid assessment identified the need to strengthen the MSD's capacity to deal with the logistics of ACT. ACTs come in several presentations and it will complicate the way drugs are ordered, filled and received by MSD and health facilities. PMI will, through its partners, work with MSD to deal with the issues related to ACT. A critical need will be the repackaging of 18 millions doses of ACT. Improvements will also be made to the links between MSD and health facilities as well as the problems with drug management information systems.

Timeline for strengthening MSD

The rapid assessment revealed several areas in MSD's supply and distribution of drugs. Given the nature of the rapid assessment not all areas of MSD's work were analyzed in depth. Therefore, the first activity for this intervention will be to conduct a more thorough assessment of the situation and then develop a detailed plan of support. This assessment can be conducted in January – February 2006 and will be mostly be followed by several technical assistance visits over the first year of PMI.

Procure ACTs for refugee camps in western Tanzania (USD $500,000)

The refugee camps in western Tanzania currently house about 400,000 refugees from conflicts in Burundi and Congo. The numbers are expected by UNHCR to reduce to about 320,000 by the 2006 malaria season. UNHCR has already procured 160,000 ITNs which they will be distributing to the refugees, and will be consolidating the camps to reduce their logistic burden early in 2006. In discussions with UNHCR representatives in Dar es Salaam, the PMI has determined that it's resources could most effectively be used to benefit the refugees by procuring ACTs to be used in the camps by the NGOs currently managing health services there. The NMCP has confirmed that their drug estimates did not include the refugee camps. To fill this gap, the PMI will procure and deliver $500,000 worth of Co-Artem to the NGOs providing health services in the UNHCR camps. Detailed planning for the mix of adult and pediatric doses is ongoing, and the procurement arrangements will be finalized in November/December 2005. CDC is already providing technical assistance to UNHCR.

Other Activities

DSS site support (USD $200,000)

Large populations under continuous demographic surveillance (DSS) are present in 3 districts in Tanzania. DSS data are able to track malaria specific mortality overtime. PMI will provide direct support to maintain and enhance these DSS sites, in order to monitor the potential impact of improved coverage of the PMI preventive and treatment interventions. Because the DSS sites are already established, and they are operating with resources from other sources, PMI resources in year 1 will support <20% of the costs of maintaining these sites. Partners include CDC, Novartis Foundation for Sustainable Development.

Timeline: continuous.

Expert Monitoring and Evaluation for post-intervention (USD $150,000)

PMI will support temporary duty assignments from CDC scientists who will assist local Tanzanian investigators in the evaluation of PMI interventions on Zanzibar and the mainland. In the first year this will include assistance with entomologic monitoring and ITN coverage assessments.

Timeline: As required

L. INTERVENTIONS – EPIDEMIC SURVEILLANCE AND RESPONSE

Proposed USG Component:

Epidemic prevention and response (USD $600,000)

Mainland: While there has not been a major epidemic since 1998, careful monitoring of the impact and effectiveness of IRS on the local mosquito vectors is critical for ensuring both the effectiveness of the current spray round, as well as providing important planning data on insecticide susceptibility, "hot spots" for vector breeding and problem areas for residents' compliance with the spray program. The program will procure insecticide, spray equipment and safety gear for spray teams for selected districts. Detailed plans will be developed with the district malaria/IMCI focal person to include both preventive IRS and treatment responses to high-risk epidemic areas. Monitoring techniques for gauging risk and mosquito populations will be instituted, for improved targeting of the IRS activities for maximum impact and cost-effectiveness. The first year's activities will focus on response, and developing the capacity for detecting epidemics quickly. Future years will broaden this focus to reflect new technologies and methods for forecasting epidemic risks for specific geographic areas, and incorporating this higher level predictive capacity into the district plans. In year one, the PMI program plans to provide significant support to the NMCP's epidemic detection and response efforts in the selected epidemic-prone districts. In these districts, the PMI contractors will work closely with the designated District Malaria/IMCI focal persons to establish planning procedures, collect necessary data for strengthening surveillance (in order to detect outbreaks within a week of their occurrence) and establish depots for the storage of insecticides, spray equipment and safety equipment to respond effectively with IRS. The strategy will be to build the district level capacity to detect and respond quickly and effectively to epidemics, to identify communities and locations particularly prone to malaria infection and transmission, and to establish sound planning for epidemic outbreaks. In addition, preparations will be made to explore in Year 2 the strengthening of a central level capacity to access and interpret rainfall forecasting data in order to establish a forecasting capacity capable of giving districts a 2-3 month warning of likely high risk of malaria outbreaks.

Response to epidemics must include rapid treatment with ACTs as well as vector control responses. A recent report from Ethiopia has suggested that ACTs alone may, in some cases, actually be sufficient to control nascent epidemics, and certainly health facilities in epidemic-prone districts need to develop the capacity to recognize and report higher-than-normal malaria case loads in a prompt manner.

Zanzibar: we do not anticipate an epidemic prediction and response component to the Zanzibar program, please see the IRS section above for a description of related activities.

M. PRIVATE SECTOR PARTNERSHIPS

Current status

In Tanzania the private sector is also involved in the fight against malaria. Coca-Cola Kwanza, in collaboration with Population Services International (PSI), gives seasonal donations from its sales toward the purchase of ITNs for overlooked groups (e.g. pediatric wards in hospitals, orphanages,

etc.). PSI , financed through the U.K. Department for International Development (DiFD), is promoting ITNs through social marketing and establishing a very successful network of private vendors that sell bundled (net and insecticide) ITNs and are self sustaining. The three most important ITN manufacturers in the country are tooling up to satisfy local needs for ITNs. In another example of private sector collaboration, the Tanzanian Food and Drug Authority (TFDA) and the Strategies to Enhance Access to Medicines (SEAM) project are working on the deployment of Accredited Drug Dispensing Outlets (ADDO)—private sector outlets that have been accredited by the TFDA to improve the quality, availability, affordability and use of drugs, including anti-malarials. Yet another example of private sector collaboration is TechnoServe, encouraging local farmers to grow *Artemisia annua*, the plant from which artemisinin is derived for sale drug manufacturers.

Proposed USG Component

NMCP Public-Private Partnership (PPP) Expansion (No Year One funding)

Tanzania currently has an active program in promoting PPPs, and is a model for effective collaboration between the NMCP and the private sector. The NMCP places a high value on it's successful PPP and will continue to pursue ways to strengthen this component. While the PMI will not directly support activities to expand PPP collaborative activities in the Year One Plan, such activities might be supported by other partners in Tanzania, and include examples such as the following:

- Identifying and working with large employers in Tanzania to set up plans to issue ITNs/LLINs to employees as part of the benefits package. These arrangements could include providing nets to employees and their family members free of charge, or on a subsidized price, or on a credit basis with payments made over a period of time through pay deductions.
- Document the benefits accruing to private sector partners from the existing and future partnerships in terms of reduced absenteeism, increased productivity and staff morale.
- Using the current program with Coca Cola as a model (in which Coca Cola Kwanza bottlers contributes one shilling per bottle sold to providing ITNs to needy children), expand PPPs for the subsidized/free provision of ITNs/LLINs to identified needy and vulnerable populations in need of protection.
- Establishing links to employer associations, such as Hotel associations, travel companies and others with links to major industries such as tourism, mining/energy extraction and plantation agriculture, to promote further PPPs for malaria control activities.

Timeline- PPP Expansion

The PMI will not be providing direct support to this activity, and thus the timeline will depend on the NMCP finding other sources of support for implementation.

Summary Tables for Interventions:

Table 5: Planned Obligations FY2006					
Proposed Activity	**Mechanism**	**Budget $ (commodities)**	**Geographic area**	**Description of Activity**	**Relation to Interventions**
PREVENTIVE ACTIVITIES					
Expansion of the TNVS to Infants	NGO grant	3,207,000 (2,309,000)	Mainland, 15 regions	Vouchers	ITNs
The "Safety Net" ITN Equity	NGO grant	590,000 (395,300)	Mainland, 12 districts	Pilot free ITNs	ITNs for poorest
LLIN technology transfer	Netmark, AED SmartNet	600,000 (500,000)	Mainland, donor pool	Machinery for LLINs	ITNs
Zanzibar LLINs "Jump Start"	Direct purchase	580,000 (580,000)	Zanzibar	LLIN distribution	ITNs
IRS and response capacity in epidemic districts	IVM task order/RTI	600,000 (324,000)	Mainland, 3 districts	Improve detection and response to epidemics	Improve IRS capacity and targeting in epidemics
Indoor Residual Spraying in Zanzibar	IVM task order/RTI	2,050,000 (1,200,000)	Zanzibar	Spray houses	IRS implementation
Urban malaria control in Dar es Salaam	IVM task order, RTI	200,000	Dar es Salaam	Vector control program in urban areas	Reduce malaria and mosquitoes in urban areas
Entomological monitoring	IVM task order/RTI	50,000	Zanzibar, mainland 3 districts	Monitor effectiveness of IRS	Effectively plan IRS targeting
Total Prevention $7,877,000 Commodity % 67.4					
CASE MANAGEMENT ACTIVITIES					
Introduction of RDTs in districts in mainland and Zanzibar	WHO umbrella grant	500,000 (500,000)	Mainland, 5 districts; Zanzibar, 3 districts	Introduction of rapid diagnostics	Ensure efficient use of ACTs
Support training for ACT roll-out	NGO grant	500,000	Mainland, all districts	Train health workers on ACTs	Ensure proper use of ACTs
Provide subsidized	WHO umbrella	300,000 (300,000)	Mainland, 4 regions	Subsidized ACTs for	Treatment accessibility

Table 5: Planned Obligations FY2006					
Proposed Activity	**Mechanism**	**Budget $ (commodities)**	**Geographic area**	**Description of Activity**	**Relation to Interventions**
ACTs to ADDOs				ADDOs	
Improve management of severe	UNICEF, NGO grant	500,000 (350,000)	Mainland, 3 districts	Begin implementation of improved severe malaria management	Decrease deaths from severe malaria in facilities
Strengthen Medical Stores Department	RPM+ project	440,000	Mainland, all districts	Strengthen Medical Stores Dept	Ensure ACTs stocked in public facilities
ACTs for refugee camps	WHO UNICEF	500,000 (400,000)	Refugee camps & nearby towns	Provide ACTs for refugee health clinics	ACT for refugees
Total Case Management $ 2,740,000 Commodity % 56.6					
Monitoring & Evaluation					
DSS site support	NGO grant	200,000	Mainland, 1 district	Support malaria mortality data site	Malaria-specific mortality data site
Expert M&E for post-intervention	CDC IAA	150,000	Mainland, Zanzibar	Support data quality	Measurement of results, targeting Yr2
Total M&E $350,000					
PRIVATE SECTOR PARTNERSHIPS					
NMCP Public private Partnership expansion		0	Mainland	Build more PPPs for malaria control activities, TPHA	Increase private sector participation in malaria control
Total PPP $115,000 Commodities % 0					
MANAGEMENT AND ADMINISTRATION					
PMI country staff	CDC IAA, DELIVER/JSI	533,000	Mainland, Zanzibar	CDC&USAID Technical advisors, coordination meetings, in-country travel, office supplies	Implementation management
Total Management & Admin $533,000					
Total		**$11,500,000**		Total	59.6%

Table 5: Planned Obligations FY2006					
Proposed Activity	**Mechanism**	**Budget $ (commodities)**	**Geographic area**	**Description of Activity**	**Relation to Interventions**
				Commodities	(6,858,340)

Table 6: Estimated Budget Breakdown by Intervention					
	ITNs	**IRS/Epidemics**	**Treatment**	**IPT**	**Other**
Commodities	**$ 3,784,340 (76%)**	**$1,524,000 (53%)**	**$1,550,000 (57%)**	**--**	**See private sector**
Salaries	**--**	**$100,000 (3%)**	**---**	**--**	**--**
Services	**$1,092,660 (22%)**	**$1,035,000 (36%)**	**$1,110,000 (41%)**	**--**	**$200,000 100%**
Technical Assistance	**$100,000 (2%)**	**$240,000 (8%)**	**$80,000 (3%)**	**--**	
Other	**--**	**--**	**--**	**--**	**--**
PMI Budget	**$4,977,000**	**$2,900,000**	**$2,740,000**	**--**	**$200,000**
Total	**100%**	**100%**	**101%**	**100%**	**100%**

Note: PMI Budget totals for each intervention do not sum up to the full country total because many activities cut across technical interventions, such as PMI country team salaries, M&E, IEC etc.

Table 7: Budget Breakdown by Implementing Partner		
Implementer	**Intervention**	**Amount ($)**
AED/TMark	IEC support	$0
AED/Netmark	LLIN	$600,000
CDC/IAA	Admin and Tech support	$500,000
AtoZ Textiles contract	Procure LLINs	$580,000
MEDA (FBO)	Procure ITNs	$3,207,000
NGO Grants	Various activities, implementers to be determined	$1,325,000
MSH/RPM+	ACT logistics	$440,000
RTI/IVM	Vector control: IRS, Epidemics	$2,900,000
JSI/DELIVER	Admin support	$183,000
UNICEF/WHO	Commodity procurement	$1,650,000
	Total:	**$11,500,000**

Table 8: Global Fund Activities Status						
Disbursed funds	**ITNs**	**IRS**	**Treatment**	**IPT**	**Epidemics**	**Other**
Mainland – R1	**$8,790,612**	--	--	--	--	--
Mainland – R4	--	--	**$18,575,572**	--	--	--
Zanzibar – R1	--	--	**$781,220**	--	--	--
Zanzibar – R4	**$2,792,077**	--	--	--	--	--
Planned ($$ and dates	--	--	--	--	--	--
Mainland – R1	**$11,000,000**	--	--	--	--	--
Mainland – R4	--	--	--	--	--	--
Zanzibar – R1	--	--	--	--	--	--
Zanzibar – R4	--	--	--	--	--	--

Table 9: Private Sector Contributions and Activities						
Company/Organization	**ITNs**	**IRS**	**Treatment**	**IPT**	**Epidemics**	**Other**
Coca-Cola Tanzania	**$20,000**	--	--	--	--	
Valent Biosciences	--	--	--	--	--	**$35000 TA,+Bti**
A to Z Textiles	--	--	--	--	--	
Syngenta	--	--	--	--	--	
Wellcome Trust	--	--	--	--	--	**$175,000 TA+comm.**
JICA	--	--	--	--	--	**$20,000 salaries $40,000 services**
Swiss Tropical Institute	--	--	--	--	--	**$20,000**

N. STAFFING AND ADMINISTRATION

The PMI in Tanzania will have two staff, one representing USAID and one representing CDC (PMI Coordinators). Both staff will be based in Dar es Salaam. Their activities will include the development of PMI strategies and work plans, coordinating with national authorities, managing collaborating agencies and supervising day to day activities. Additionally, one technical person will be hired to coordinate IRS activities in Zanzibar and he/she will be based there.

PMI managers will meet on a monthly basis with NMCP, ZMCP, USAID and CDC to assess progress, identify problems and resolve difficulties. Additionally, a more formal review of work plans and activities will be carried out every quarter to ensure that the work plan is being adhered to. Out of these quarterly meetings parts of the quarterly report to PMI – Washington will be developed. Reports, once approved by PMI, will be shared with all partners.

Table 10: Staffing and Administration Budget ($)			
Staff/ Consultants	**Cost year-to-date**	**FY2006**	
In-country PMI staff		**$708,000**	
Consultants		**$75,000(CDC)+$275,000 (IVM/RTI)+$100,000 (RPM/MSH)+$30,000 (Tmark/AED)=$480,000**	

O. COMMUNICATION AND COORDINATION

Key to the success of PMI will be how it fits, complements and coordinates activities with government, development partners and with USAID and CDC headquarters. PMI – Tanzania understands that communication and coordination will require constant vigilance and that there might be a steep time cost for ensuring that stakeholders are informed and participant in PMI. In Tanzania, PMI made sure that a transparent consultative process was followed in the development of the PMI strategy and work plan. As a result, all stakeholders strongly buy in to the current PMI strategy and 1-year work plan. The gist of this process will continue to guide our efforts in Tanzania. However, it must be made clear that in the case of Tanzania a double effort in communication and coordination will be required as we are essentially dealing with two countries—mainland and Zanzibar.

At the country level, PMI will coordinate through mechanisms already existing in the mainland and Zanzibar. Such mechanisms include the National Malaria Advisory Committee (NMAC), the various sub-committees (e.g. case management, vector control, IEC, etc.) and the Inter Agency Malaria Coordinating Committee (IAMCC). PMI has already been invited to participate in the National Insecticide Treated Net Programme (NATNETS) as a way to coordinate efforts with partners already involved with ITNs. Additionally, PMI will also work through the Development Partners – Health (DPH) group to ensure that all are informed and on board with PMI work plans.

PMI has been allocated office space in both the NMCP and the ZMCP. This will facilitate communications between technical staff and will ensure that PMI works closely with the respective programs. In addition, PMI will institute monthly and quarterly coordinating meetings with the NMCP and ZMCP. Quarterly reports will be produced in coordination with both programs.

Communication with USAID and CDC headquarters is already effective through e-mail, phone and fax. Visits from HQ staff will be encouraged to enhance already efficient communications.

P. ANNEXES

1. Comprehensive Year One timeline for PMI activities (including ACTs, IPT, ITNs, and IRS) in the country

2. Monitoring and evaluation plan for Tanzania

3. Entomological monitoring and evaluation

Annex 1

Comprehensive Year One timeline for PMI activities (including ACTs, IPT, ITNs, and IRS) in the country

President's Malaria Initiative
Malaria Country
FY 2006

ACTIVITY	2005	2006											
	OCT-DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
Expansion of TNVS to infants													
Negotiations with partners													
Prioritize districts													
Adoption of TNVS materials													
Training of vendors and promotion													
Subsidies to vendors													
Implementation													
Mass Retreatment to make LLINs													
Safety Net Program													
Decide on mechanisms													
Negotiate with partners													
Develop protocols and materials													
Selection of districts and compilation of lists													
Dissemination of new vouchers													
Baseline													
Implementation period													
Monitoring and Supervision													
LLIN Technology Transfer													
Meet with interested parties													
Conduct needs assessment													
Meet with net manufacturers													
Define specs and steps for purchasing equipment													
Procure and installation of new equipment													
Initiate production by equipped factories													
Zanzibar LLINs Jump Start													
ZMCP and PSI meeting													
Official Launch													
ACTIVITY Continued	2005	2006											
	OCT-DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
Preparation for Jump Start and Mass Media													

Continued IEC support													
Distribution of LLINs													
Indoor Residual Spraying in Zanzibar													
Environmental Assessment TNZ and ZNZ													
Order commodities													
Training of IRS teams													
IRS Conducted													
Entomological Data Collection													
Entomological Monitoring													
Environmental Assessment TNZ and ZNZ													
Order commodities													
Training of IRS teams													
IRS Conducted													
Entomological Data Collection													
Malaria Diagnosis and Treatment													
Introduction of RDTs													
Monitoring and supervision													
Selection and procurement of RDTs													
Selection of Districts for RDT													
Adaptation of training materials													
Training of trainers													
Health Worker training													
Deployment of RDTs													
Evaluation													
Provide subsidized ACTs to ADDOs													
Determine shortfall in Training resources													
Prepare grant to NGO													
Award grant													
Health Worker Training													
Follow Up													
Improved Management of Severe Malaria													
Contract NGO to do training													

ACTIVITY Continued	2005	2006											
	OCT-DEC	JAN	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
Selection of districts													
Prepare training materials													
Training in districts													
Training of trainers													

Monitoring and supervision													
Strengthen Medical Stores													
Assessment of MSD													
TA Visist													

Annex 2

Monitoring and evaluation plan for Tanzania

President's Malaria Initiative Countries – Routine Monitoring Plan

Example Indicators	Frequency of Measurement	Source of Data	Cost to PMI
Insecticide-treated materials:			
No. of ITNs purchased/distributed by route of distribution (ANCs, campaigns, commercial sales, etc.)	Quarterly	Routine reports from all partners	0
Case Management:			
No. of municipalities where ACT has been implemented	Quarterly	NMCP reports	0
No. of ACT treatments administered (by age group)	Every 6 months	NMCP/NGOs	0
No. of health facilities offering laboratory diagnosis of malaria (microscopy/RDTs)	Quarterly	Reports from MoH, NGOs/FBOs, and others	0
Drug efficacy/ drug resistance monitoring	Yearly/ Bi-yearly	Specialized in vivo/ in vitro evaluations	*
Insecticide resistance monitoring	Continuous	Specialized bioassays of field-collected mosquitoes	*
Drug safety monitoring	Continuous	Sentinel-site system of passive reporting and case follow-up	*
Drug quality monitoring	Continuous	National Drug Regulatory Authority	*
Intermittent Protective Treatment:			
No. of municipalities where IPTp with SP** has been implemented	Quarterly	NMCP reports	0
No. of SP treatments administered	Quarterly	NMCP/MoH reports	0
% of women delivering at health facilities who have received IPT1 and IPT2	Quarterly	NMCP/MoH reports	0
Epidemic Preparedness and Response:			
No. of municipalities with epidemic-prone areas that have a written epidemic response plan	Every 6 months	NMCP reports	0
No. of municipalities with epidemic-prone areas that have a functional monitoring system in place (e.g., monitoring charts)	Every 6 months	NMCP reports	0
Communications, Training, Coordination:			
No. of BCC materials produced/disseminated (by intervention and type)	Quarterly	Routine reports from partners involved in BCC	0
No. of training courses offered/persons trained on malaria micro-scopy, case management, management of severe malaria, IPT, etc.	Every 6 months	Training reports	0

No. of meetings of National Malaria Task Force (or equivalent) and Working Groups	Quarterly	Malaria Task Force/Working Group minutes	0

Footnotes: * = Cost of activity to PMI will depend on whether or not system already in place, functional, and adequately resourced.

** = Assumes no major policy change regarding SP use for IPTp within life of initiative; otherwise will monitor use of recommended drug

Evaluation proposal for PMI - TANZANIA

Activity (M&E, operations research, capacity building, or programmatic activity)	Year and estimated cost[a] ("x" indicates activity is proposed for a given year)						
	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
"Phase" of programmatic activities	Base-line	Scale-up		Full implementation (i.e., malaria mortality should be reduced by 50% for the 3-year period)			
DHS with "regular" sample size (10,400 women), i.e., to estimate $_5q_0$ for the 5 years before survey	Done						
DHS with extra sample size (17,326 women), i.e., to estimate $_5q_0$ for the 3 years before survey[b]							X ($2,700,000)
DSS x 2 with population sizes of 60,000 each to measure all-cause and malaria mortality[c]		X ($200,000)*	X ($200,000)	X ($200,000)	X ($200,000)	X ($200,000)	
Study to estimate sensitivity and specificity of verbal autopsy's ability to identify malaria deaths[e]			X ($40,000)				X ($40,000)
National MIS with anemia and parasitemia[e] at end of rainy season (plus info for wealth index and factors related to all-cause mortality)[a]		X ($200,000)		X ($200,000)	X ($200,000)		
National health facility survey in outpatient sick child clinic and antenatal clinic to evaluate malaria case management, antimalarial drug stocks, IPT use, and other malaria-related health worker functions		X ($60,000)		X ($60,000)		X ($60,000)	
Collect HIS data and hospital data on outpatient and inpatient child malaria, severe anemia, deaths, hospital utilization, ITNs distributed (regular, LLITNs), ITNs retreated, and ACTs used for children[e]		X ($30,000)	X ($20,000)	X ($20,000)	X ($20,000)	X ($20,000)	X ($20,000)
Data collection for "confounders" (rainfall, urbanization, wealth, etc)		X ($5000)	X ($5000)	X ($5000)	X ($5000)	X ($5000)	X ($5000)
Supervision and Quality Improvement Data monitoring		X ($80,000)	X ($50,000)	X ($50,000)	X ($50,000)	X ($50,000)	X ($50,000)
Estimated total for each year		**$575,000**	**$315,000**	**$535,000**	**$475,000**	**$335,000**	**$2,815,000**
Estimated total for each year that PMI would have to cover (assuming							

other malaria initiatives do not contribute to the plan and assuming two DSS sites are supported) **Estimated grand total for all years = $2,660,000**		$535,000	$315,000	$535,000	$475,000	$335,000	$465,000b

Footnotes (Tanzania plan):

*This amount ($200,000) is included under the country budget.

[a] Many of the costs are still very rough estimates. Except for DHSs, cost estimates do not include indirect costs that might be needed for organizations that work in the field to carry out the activities. If the capacity-building component of the plan is successful, MIS costs might decrease over time, as less external technical assistance is required.

[b] Assumes a shorter questionnaire that only collects information needed to estimate child mortality for the additional sample of women (to reduce survey cost). Also, it might not be necessary to collect anemia in this survey, as the M&E plan proposes an MIS in 2010 that measures anemia. The estimated cost of a DHS in 2011 with a regular sample size is $2,350,000; increasing the sample size as proposed would add another estimated $350,000 (so the total estimated cost for the large DHS in 2010 is $2,700,000). It is assumed that the PMI would only have to pick up the add-on cost of $350,000.

[c] The cost estimate is based on an annual cost of $3 per person under surveillance per year, plus $100,000 during the first year for start-up costs, such as vehicles and computers.

[d] Necessary conditions are: 1) a high proportion of births occur at health facilities, 2) a high fertility rate, and 3) low use of contraceptives.

[e] This is an operations research component of the evaluation. The idea is that the PMI might be a unique opportunity to collect large amounts of monitoring and evaluation data at one time; thus, for a few targeted data types (e.g., parasite prevalence, hospital-based surveillance), the M&E plan proposes to collect the data and then evaluate its validity, utility, and cost.

Annex 3
Entomological Monitoring and evaluation

PMI – Entomological Monitoring and Evaluation

Tanzania will have the capability to effectively monitor vector mosquito populations for susceptibility to insecticides to detect selection for physiological and behavioral insecticide resistance associated with IRS/ITN use. Behavioral resistance will be monitored through human bait collections conducted inside and outside houses with IRS/ITNs. The *Anopheles* species mosquitoes collected from the human bait collections will be evaluated for physiological resistance using the CDC Bottle assay, and subsequently identified to species and the sporozoite rate determined using the *P. falciparum* CSP ELISA.

Indoor *Anopheles* vector densities will be monitored to detect changes in IRS/ITN insecticidal efficacy and changes in man-vector contact rates. Efficacy will be monitored and evaluated using indoor pyrethrum spray collections with the mosquitoes collected identified to species and the sporozoite rate determined using the *P. falciparum* CSP ELISA.

Quality assurance of IRS treatment and ITNs will be monitored to verify both initial efficacy and longevity of ITNs and IRS treatment. The standard WHO cone bioassay will be used to for these evaluations.

Entomology M&E will require personnel trained in mosquito collection and identification and an insectary to rear mosquitoes needed for the bioassays. An ELISA testing capability may be established in Tanzania, or mosquitoes will be sent to a central/regional laboratory for analysis. When resistance is identified, CDC-Atlanta staff will assist in identification of the mechanism(s) using biochemical and molecular methods.

PRESIDENT'S MALARIA INITIATIVE

UGANDA

Malaria Country Action Plan (CAP)

FY 2006

TABLE OF CONTENTS

ABBREVIATIONS

AED	Netmark Project
ACT	artemisinin-based combination therapy
AFFORD	USAID-funded Bilateral
ANC	antenatal Clinic
AQ	amodiaquine
ARC	American Red Cross
AS	artesunate
BCC	behavior change communication
cACT	community-based ACTs
CDC	Centers for Disease Control and Prevention
CQ	chloroquine
CDD	community drug distributors
DCI	Development Cooperation of Ireland
DFID	UK Department of International Development
DHO	District Health Officer
DHS	Demographic and Health Survey
DMO	District Medical Officer
DSS	Demographic Sentinel System
FANC	focus antenatal care
GDA	Global Development Alliance
FBO	Faith-Based Organization
GDP	Gross Domestic Product
GFATM	Global Fund to Fight AIDS, Tuberculosis, and Malaria
GOU	Government of Uganda
GTZ	German Development Cooperation
HBMF	Home Based Management of Fever
HIMAL	Highland Malaria Project
HIS	Health Information systems
HPL	Health Partners in Communication
HSSP	Health Sector Strategic Plan
ICCM	Inter-Agency Coordination Committee for Malaria
IDP	Internally Displaced Person
IEC	Information, Education and Communication
IMCI	Integrated Management of Childhood Illnesses
IPT	Intermittent Preventive Treatment
IRS	Indoor Residual Spraying
ITN	insecticide-treated net
JHU/CCP	Johns Hopkins University Communications for Change Project
JICA	Japanese International Cooperation Agency
JMS	Joint Medical Stores
JSI	John Snow International

KAP	Knowledge, Attitudes and Practices
LLIN	Long-Lasting Insecticide Treated Net
MACIS	Malaria and Childhood Illness Secretariat
MCSP	Malaria Control Strategic Plan
MEMS	Monitoring and Evaluation Management Systems
MICS	Multiple Indicator Cluster Survey
MIP	Malaria in Pregnancy
MIS	Malaria Indicator Survey
MOH	Ministry of Health
MU	Makerere University
NDA	National Drug Authority
NMCP	National Malaria Control Programme
NDQL	National Drug Quality Laboratories
NMS	National Medical Stores
NGO	Non-Governmental Organization
OVC	Orphans and Vulnerable Children
PLWA	People Living with HIV/AIDS
PMI	President's Malaria Initiative
PMU	Program Management Unit
PSI	Population Services International
RBM	Roll Back Malaria
RDT	Rapid Diagnostic Test
RTI	Research Triangle Institute
SP	Sulfadoxine-Pyrimethamine
SWAp	Sector-wide Approach
UCSF	University of California, San Francisco
UDHS	Uganda Demographic and Health Survey
UNDP	United Nations Development Programme
UNICEF	United Nations Childrens' Fund
UPHOLD	Uganda Program for Human and Holistic Development
USAID	United States Agency for International Development
USG	United States Government
WHO	World Health Organization
WHOPES	World Health Organization Pesticide Evaluation Scheme

EXECUTIVE SUMMARY

On June 30, 2005, the President announced President's Malaria Initiative (PMI), a new five-year, 1.2 billion dollar initiative to rapidly scale-up malaria prevention and treatment interventions in high-burden, sub-Saharan Africa. The goal of the PMI is to reduce malaria mortality by 50% by achieving 85% coverage of at-risk groups with four key interventions: artemisinin-based combination therapy (ACT), intermittent preventive treatment (IPT) for malaria in pregnancy, insecticide-treated mosquito nets (ITNs), and indoor residual spraying with insecticides (IRS). The PMI selected Uganda as one of the first three focus countries for this Initiative.

Uganda's leading cause of morbidity and mortality is malaria, which is endemic in 95% of the country. Estimates show that malaria accounts for about 25-40% of outpatient visits to health facilities and the annual number of deaths attributable to malaria ranges from 70,000 to 100,000. Children under five are most affected by malaria; nearly half of hospital inpatient pediatric deaths are due to malaria.

Uganda has made some progress scaling up prevention and treatment activities. Responding to the reality that for most caretakers, self-medication is the first realistic treatment choice, Uganda has successfully implemented its Home-base Management of Fever (HBMF) program, which has increased the number of children under five receiving malaria treatment within 24 hours of onset of fever by 50%. The Ministry of Health has also recently adopted ACTs as the official treatment policy and it will be introduced in 2006. The Ugandan government has also implemented IPT in some antenatal care clinics (ANC), and household net ownership is now calculated at 25%. The government has also sporadically used IRS in response to malaria outbreaks in the 5% of the country that is epidemic-prone.

The Global Fund to Fight AIDS, Tuberculosis, and Malaria (GFATM) is the predominate source of funding for malaria activities in Uganda. Uganda is the recipient of two malaria grants (Round 2 and Round 4) totaling $89 million. The round 2 grant contributes to the scaling up of HBMF, IRS, and ITNs and the round 4 grant focuses on the introduction of ACTs nationally.

The PMI will support existing National Malaria Control Program (NMCP) strategies and will coordinate closely with international and national partners to complement their funding and efforts. To achieve the goal and targets of the PMI in Uganda, the following major activities will need to be supported in year 1 of the Initiative:

1. Distribution of ITNs in the conflict districts of the North through large-scale health campaigns, well-child, ANC clinics, and social marketing;
2. Support the distribution of ITNs procured by the GFATM for children under five and the procurement of additional ITNs for pregnant women;
3. Conduct IRS with effective insecticides in the epidemic-prone district of Kabale;
4. Revitalize the national IPT plan by developing ANC curricula and training health workers;

5. Support the introduction of ACTs nationally by strengthening logistics and distribution systems and by training health workers in the new ACT policy to ensure that ACTs are available and administered correctly in health facilities;
6. Evaluate the feasibility of including community-based distribution of ACTs in Uganda's HBMF program; and
7. Involve the private sector in malaria control activities.

The PMI will include a strong monitoring and evaluation component to measure progress against project goals and targets, to identify problems in program implementation, to allow modifications to be made efficiently if and when they are needed, and to confirm that those modifications are having their desired effect. This plan will be coordinated with the NMCP, the GFATM, and other partners to standardize data collection and reporting.

THE PRESIDENT'S MALARIA INITIATIVE

In July 2005, the United States Government announced a new five-year, $1.2 billion initiative to rapidly scale-up malaria prevention and treatment interventions in high-burden countries in sub-Saharan Africa. The goal of this Initiative is to reduce malaria-related mortality by 50% after three years of full implementation in each country. This will be achieved by reaching 85% coverage of the most vulnerable groups-children under five years of age, pregnant women, and people living with HIV/AIDS-with proven preventive and therapeutic interventions, including artemisinin-based combination therapies (ACTs), insecticide-treated nets (ITNs), intermittent preventive treatment (IPT) of pregnant women, and indoor residual spraying (IRS).

The Initiative will begin in 2006 in three countries, Angola, Tanzania and Uganda. The proposed funding levels in FY06 are $30 million. Funding levels for the three countries will increase until 2008 and then will be maintained for the final 3 years. The proposed funding levels for the President's Malaria Initiative (PMI) are as follows: $135 million in FY07, $300 million in FY08 and FY09, and $500 million in FY10. The aim is to cover a total population of 175 million in up to 15 countries by 2010.

In implementing this Initiative, the United States Government is committed to working closely with host governments and within existing national malaria control strategies and plans. Efforts will be coordinated with other national and international partners, including the GFATM to Fight AIDS, Tuberculosis, and Malaria (GFATM), Roll Back Malaria (RBM), the World Bank Malaria Booster Program and non-governmental and private sectors to ensure that investments are complementary and RBM and Millennium Development goals can be achieved.

This document presents a detailed one-year implementation plan for the PMI in Uganda. It is based on the PMI Five-Year Strategy and Plan. It briefly reviews the current status of malaria control policies and interventions in Uganda, identifies challenges and unmet needs if the targets of the PMI are to be achieved and provides a description of proposed Year 1 activities under the PMI.

MALARIA SITUATION IN UGANDA

Epidemiology of Malaria in Uganda

Malaria is endemic in 95% of Uganda. The remaining 5% of malaria transmission lies in the highlands of the South West, West, and East, which are epidemic-prone. Malaria is the leading cause of morbidity and mortality; it accounts for 25-40% of outpatient visits at health facilities, 20% of all hospital admissions and 9-14% of all hospital deaths. Nearly half of hospital in-patient deaths among children under five are attributed to malaria. A significant percentage of malaria-related deaths occur at home and are not reported by the facility-based information system. Current estimated annual number of deaths from malaria ranges from 70,000 to 100,000. The number of malaria diagnoses reported by the public health services has been increasing in recent years, particularly for children under five. This may be attributable to an increase in resistance of the malaria parasite against the current malaria treatment. The total

number of fever cases for all ages was estimated to be 65 million in 2004. Of these cases, approximately 12 million were treated in the public and private not-for-profit sector.

Status of Malaria Interventions and Health System Infrastructure

While there has been some progress in treatment and prevention efforts, timely treatment for malaria remains a problem. The first treatment choice for more than two-thirds of caretakers is self-medication, with only a quarter of caretakers seeking treatment at a health facility. To address this situation and to ensure that children under five receive appropriate treatment for malaria, Uganda has been implementing the Home Based Management of Fever (HBMF) program. This program is designed to put malaria treatment for young children into the hands of caregivers. As part of the HBMF program, community volunteers in districts nationwide (as of October 2005) distribute pre-packaged, age-specific, "Homapak" malaria treatment kits to mothers/caregivers of young children with clinical symptoms of malaria, with instructions on proper use. A 2003 evaluation of the HBMF program found an increase from 7.3% in 2001 to 39.2% of children under five receiving treatment within 24 hours in the 9 districts implementing the HBMF intervention.[1] In April 2005, the NMCP reported an increase to 66% of children under five receiving treatment within 24 hours of the onset of fever in districts implementing HBMF. HBMF has been scaled up and is now being implemented at the community level nationally.

The "Homapak" used in the Uganda's HBMF program uses a combination of chloroquine and sulfadoxine-pyrimethamine (CQ/SP). This combination is currently effective in approximately 78% of cases. However, the GOU is planning a transition from CQ/SP to artemisinin-based combination therapy (ACT). Currently there is no evidence on how ACTs would best be implemented, how efficacious they are or the costs of using them through a HBMF program. Until more is understood about community-based distribution of ACT, the MOH will continue to use CQ/SP for HBMF. Given that the current supply of Homapak will likely run out by the end of 2006, this issue needs immediate resolution.

Intermittent Presumptive Treatment (IPT) for pregnant women is being implemented in all health facilities that offer antenatal care services. Currently, approximately 33% of women attending ANC clinics receive two doses of IPT.[2]

Household ownership of any type of net has increased over the past five years from 13.2% to 25.9%, and the proportion of children under five sleeping under a treated net has also increased to about 15%. There remains a clear need to increase coverage of insecticide-treated nets (ITNs) and long-lasting insecticide-treated nets (LLINs).[3]

Indoor Residual Spraying (IRS) has only been implemented in selected sub-counties in Uganda on a limited scale for the last few years. The Uganda National Malaria Strategy includes a plan to

[1] Fapohunda, B.M; Beth, A.P., et al (2004). The home based management of fever strategy in Uganda: survey report 2004. BASICS II/MOH/WHO/USAID, Kampala

[2] Achievement, Challenges and areas of Concern for National Malaria Control Programme for HSSP I, JB Rwakimari, April 2005.

[3] Uganda HIV Sero-Behavioral Survey (UHSBS), 2004/5

begin an IRS program targeting the highland districts at risk of epidemic malaria using GFATM funds.

Uganda has become a model for HIV/AIDS prevention treatment and care. Through the President's Emergency Plan for AIDS Relief (PEPFAR), the United States Government (USG) has worked with local partners to develop HIV/AIDS care and support resources for people living with HIV/AIDS (PLWHA). These projects provide malaria prevention and treatment through promotion of ITNs and treatment for this particular vulnerable population.

Government

Within the formal government health sector, preventive and curative malaria interventions, as described in the Health Sector Strategic Plan II (HSSP), have been incorporated as part of the Minimum Health Care Package delivered at the primary health care level. Primary health care centers are responsible for the delivery of malaria services through IMCI and mobilization of communities and other partners to address malaria at the household level. At the district level, primary duties include planning, resource allocation and management, as well as oversight of all facilities in the district including those operated by non-governmental organizations (NGOs) (mainly faith-based organizations) and the private sector. Districts are decentralized to a large degree and are responsible for their respective health plans and budgets. The MOH and RBM partners strengthen the existing referral structure to improve access to treatment for severe malaria at higher level facilities. At the central level, the National Malaria Control Programme supports implementation through policy formulation, standards setting and quality assurance, resource mobilization, capacity development and technical support, malaria epidemic control and monitoring and evaluation. Health allocations comprise 9.7% of the GOU's national budget.[4]

NGOs, Private Sector and Institutions

NGOs receive significant funds from the GOU through Primary Health Care Grants to provide outreach and preventive services at hospitals, district and local health care facilities.[5] NGOs, including FBOs, distribute ITNs at subsidized prices. Some ITNs are distributed free to vulnerable target groups including women and children. Moreover, the GOU has worked extensively with the private sector to produce Homapak for HBMF.

The private sector plays a significant role in expanding access to effective treatment for malaria through direct service provision, pharmacies and drug shops, which provides 60-80% of all malaria treatments. Private sector manufacturers and distributors produce equipment and supplies, and they serve as a source of ITNs for NGOs and the rapidly growing retail market (Total sales of ITNs in 2004 was 565,000, and in the first half of 2005 totaled 371,000).

Research and teaching institutions build pre- and in-service training courses for personnel involved in malaria control interventions. In addition, these institutions promote evidence-based practices through focused operations research.

[4] Annual Health Sector Performance report, Fiscal Year 2004/2005, October 2005
[5] Health Facility Survey, 2002

NATIONAL MALARIA CONTROL PLAN

The Ministry of Health established the Malaria Control Programme (NMCP) in 1995. The program developed its first three-year strategic plan in 1997 for 1998/1999 to 2000/2001. This was followed by the second strategic plan which covered four years (2001/2002 to 2004/2005). Development of the third strategic plan to cover five years (2005/2006 to 2009/2010) is one of the pending priority activities.

The NMCP objective is to reduce malaria morbidity and mortality to minimize related social ill effects and economic losses attributable to malaria in the country. It has identified the following core interventions to achieve this goal:

- Improving prompt and effective malaria case management at health facilities, community and household levels;
- Increasing demand for and supply and use of ITNs and net treatment kits;
- Applying selective vector control measures including indoor residual insecticide spraying (IRS) and environmental management;
- Increasing the coverage of IPT in all ANC facilities;
- Strengthening malaria epidemic preparedness and response at all levels (prediction, early detection and control of malaria epidemics); and
- Establishing sound information, education, communications (IEC)/ behavior change communications (BCC) interventions for malaria prevention and control.

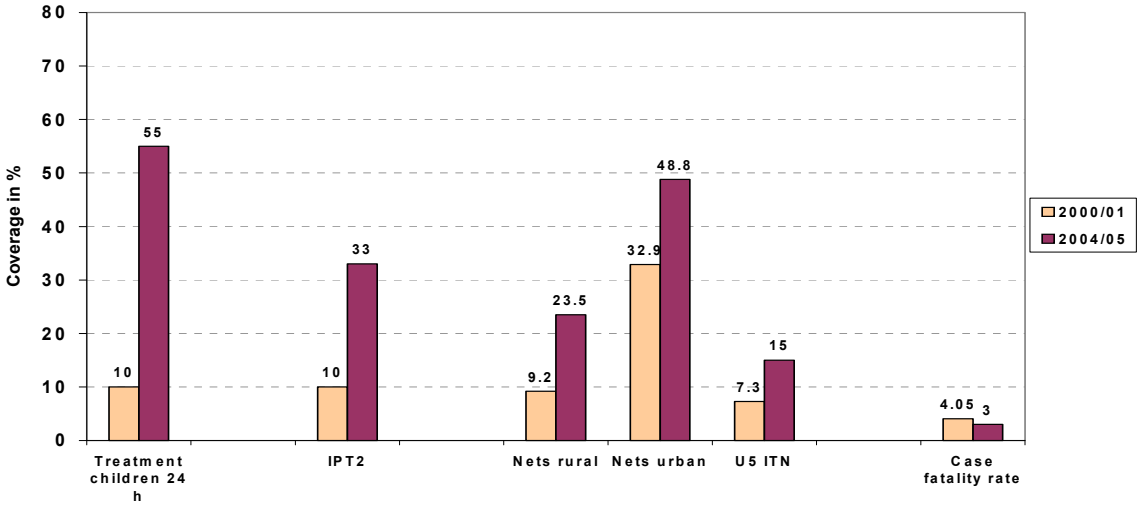
Four targets have been set by the Uganda National Malaria Control Program as part of the five-year national malaria control strategy included in the HSSP I:

- Increasing the proportion of the population at risk of malaria who receive appropriate treatment for malaria within 24 hours of recognition of symptoms;
- Increasing the proportion of pregnant women receiving IPT to 60%;
- Increasing the proportion of children aged less than five years regularly sleeping under ITNs to 50%; and
- Reducing the malaria case fatality rate at the hospital level from 4.05% to 3%.

Uganda has several strategy documents that support treatment and prevention of malaria including: Antimalarial drug policy change from CQ/SP to Artemisinin Combination Therapy (2004); Malaria in Pregnancy Control (2000); Home Based Management of Fever (2002); Policy and Strategy for Insecticide Treated Nets (2003); revised draft for The Use of ACTs at the Community Level (2005); and Policy and Strategy for Indoor Residual Spraying (in final stages).

In April 2005 the NMCP prepared a summary table of results to date in terms of the major malaria indicators, which are presented below.

Figure 1: Progress of Key HSSP I Indicators, 2000/2001 to 2004/2005



The targets for 2010 written in HSSP II are to:

i) Reduced malaria admission of children under five years in hospitals from 74.5/1000 in 2003 to 50/1000 in 2010

ii) Reduced case fatality rate amongst malaria in-patients aged less than five years from 3% in 2004 to 2% in 2010

iii) Increased the proportion of children aged less than five years getting correct treatment within 24 hours of onset of symptoms from 25% in 2004 to 80%.

iv) Increased the proportion of pregnant women attending ANC who have completed IPT 2 from 24% in 2004 to 75% in 2010

v) Increased the proportion of households having at least one insecticide-treated net (ITN) from 15 % in 2003 to 70%

vi) Increased the proportion of targeted structures for indoor residual spraying (IRS) in epidemic areas re-sprayed every 6 months from 0 % in 2004 to 60%.

Coordinating mechanisms

Roll Back Malaria: As a signatory to the Abuja Declaration, Uganda has established country-specific objectives which focus on increasing access to treatment for children and pregnant women, expanding the number of persons at-risk sleeping under bed nets and improving detection and response to malaria epidemics. Roll Back Malaria partners have supported interventions, operations research, and monitoring and evaluation. This includes a survey to establish baseline data to and a nationwide assessment to evaluate progress towards achieving Abuja targets.

Inter-Agency Coordination Committee for Malaria (ICCM): The ICCM provides a forum at the national level for all stakeholders to coordinate malaria control plans and activities as well as monitor progress against objectives and targets. Members include the major donors (USAID, DfID, DCI), multilaterals (WHO, UNICEF), NGOs and FBOs, Ministry of Health representatives and the private sector. Four technical working groups have been established as

part of the ICCM: vector control/ITNs; malaria case management (including malaria in pregnancy); information education and communication; and monitoring, evaluation and research.

MAJOR PARTNERS IN MALARIA CONTROL

In addition to government resources and funds channeled by international partners through budget support as part of the health sector wide approach (SWAp), major direct contributors to the funding of the national malaria control strategy include multilaterals including WHO and UNICEF as well as several bilateral organizations.

Uganda has received two GFATM awards to support malaria control and prevention programs. The 2nd round GFATM grant of $23 million contributes to scaling up of home-based management of fever to all districts in the country, organization of a first round of free ITN distribution and net re-treatment and start up of an IRS program in 3 districts (planned for 2005/06). Moreover, the $66 million 4th round GFATM grant will allow Uganda to introduce ACTs at health facility levels initially, followed by availability in the community and a sustained ACT supply until 2009. GFATM funds will provide 1.8 million ITNs that are earmarked for free distribution to vulnerable populations in early 2006.

However, in early September 2005, the GFATM temporarily suspended implementation of these grants, pending reorganization of the Project Management Unit within the Ministry, which had been charged with implementing the grants. The Government has taken concrete actions to resolve this issue; as of 11 November 2005, the suspension has been lifted and the GOU is moving forward with next steps in GFATM grant implementation. Funding for drugs has been considered part of emergency orders that can move forward despite the suspension. Drugs are expected to arrive in Uganda beginning in early 2006 and this order includes 15.7 million doses of Coartem, a brand of ACT, for 2006 that has been purchased from Novartis.

USG partners and agencies in Uganda

USAID/Uganda has a long-standing malaria program in the country, and has also been the largest bilateral donor for malaria in Uganda since 2000. USAID/Uganda's implementing partners in malaria activities include John Snow International (JSI), Johns Hopkins University Communications for Change Project (JHU/CCP), Netmark Project (AED), the Malaria and Childhood Illness Secretariat (MACIS) hosted by AMREF and in the recent past, Population Services International (PSI) and Research Triangle Institute (RTI). Through its contract for the UPHOLD project via JSI and the AFFORD project via JHU/CCP, USAID/Uganda also has sub-contractual relationships to the Malaria Consortium.

In 2000, CDC and USAID began a collaborative activity to strengthen the technical capacity within the National Malaria Control Program. Jointly, the two agencies provided a malaria technical expert to the GOU; the technical support has assisted in moving the GOU's malaria programs forward. CDC has also supported U.S.-based organizations that work with Makerere University to conduct operational research and to strengthen the capacity through training of health officials. Currently, CDC supports the University of California, San Francisco (UCSF) to

both evaluate a pharmacovigilance system and to monitor drug efficacy of malaria drugs. UCSF works with the Uganda Malaria Surveillance Project at Makerere University. CDC also supports Research Triangle Institute to provide ITNs to two IDP camps in northern Uganda. CDC has an office in Uganda based in Entebbe at the Uganda Virus Institute. CDC/Uganda works primarily in HIV under the President's Emergency Plan for HIV/AIDS Relief (PEPFAR) and supports a number of programs through NGO's. As part of their home-based care program, ITNs are being delivered to HIV/AIDS infected individuals. Presently, CDC has engaged the services of AMREF, an NGO, which is conducting a refresher training for laboratory personnel to improve their technical competencies in microscopic diagnosis malaria, HIV and tuberculosis diagnosis as well as managerial skills in data management to improve their estimate of laboratory reagents ordering. The course also includes strengthening managerial skills in data management to improve participants' skills for forecasting and procuring laboratory supplies.

Other donors and international partners

DfID is one of the major donors contributing to malaria programs. DfID works largely through budget support in addition to some project funding via the Malaria Consortium. The Development Cooperation of Ireland (DCI) also supports malaria programs through the Malaria Consortium as well. Although GTZ has previously made contributions to research and implementation work at district level, current support remains limited. WHO is funding training of trainers for Indoor Residual Spraying, and has been an active participant in supporting Uganda's malaria efforts. UNICEF contributes to some ongoing activities related to malaria, although recently this has not been a major focus for UNICEF in Uganda. World Bank funding is available to the government for malaria control within their IDA funding envelope.

GOAL OF PRESIDENT'S MALARIA INITIATIVE

By 30 September, 2011, reduce malaria-related mortality in Uganda by 50%.

TARGETS OF THE PRESIDENT'S MALARIA INITIATIVE

After three years of full implementation (30 September 2010), the PMI will provide accelerated resources to assist the country to achieve the following targets among at-risk populations for malaria:

1. 85% of children under five will have slept under an insecticide-treated bed net (ITN) the previous night;
2. 85% of pregnant women will have slept under an insecticide-treated bed net (ITN) the previous night;
3. 85% of children under five with suspected malaria have received treatment with an antimalarial drug in accordance with national malaria treatment policies within 24 hours of the onset of their symptoms;
4. 85% of houses targeted for indoor residual spraying will have been sprayed; and
5. 85% of children under five with suspected malaria have received treatment with an antimalarial drug in accordance with national malaria treatment policies within 24 hours of the onset of their symptoms.

MONITORING AND EVALUATION

Current status

Monitoring and evaluation to measure progress against project goals and targets, to identify problems in program implementation and allow modifications to be made, and to confirm that those modifications are having their desired effect will be a critical component of the PMI. In Uganda, rapid scale-up of malaria prevention and control interventions and achieving high coverage rates with ACTs, ITNs, IPT, and IRS are priorities not only for the PMI, but also for the NMCP, the GFATM, and other national and international partners working on malaria. For this reason, an effort will be made to coordinate all monitoring and evaluation activities funded by the PMI with those of the NMCP and other partners into a single integrated system to avoid duplication, conserve resources, and ensure as much uniformity as possible in the indicators chosen to measure progress, in approaches to collecting and analyzing data, and in reporting.

Baseline data (as of 2004) for the key indicators for the PMI were identified for Uganda's Health Sector Strategic Plan II (HSSP) 2005-2010. A Demographic and Health Survey (DHS) will take place in early 2006 (field work to be done in January/February 2006) which will provide final baseline data. A malaria module will be included in the DHS, and specific questions have been added to meet the needs of the PMI. Baseline data from the HSSP have been included in table below, to be confirmed or adjusted depending on DHS results.

<u>Evaluation of Progress toward the President's Malaria Initiative Goal and Targets:</u>

The PMI evaluation plan in Uganda consists of two major components:

1. Evaluation of coverage rates for the four key interventions, ACTs, ITNs, IPT, and IRS (e.g., percentage of pregnant women sleeping under an ITN the previous night)
2. Evaluation of impact on malaria mortality and morbidity; and levels

At the end of the first year, progress against each of the process indicators listed below will be reported by all implementing partners.

Table 1: Process indicators (to be used in association with impact indicators)[6]

Treatment:

- Numbers of ACTs distributed, where distributed, and percentage used by district
- Use of Homapak (or other home-based treatment package) – numbers distributed and used, by district
- % of districts with health facility staff fully trained in ACT delivery
- % of districts covered by IEC/BCC messages on new ACT treatment
- % of health facilities with no stock-outs of ACT for 3 weeks or more

Malaria in Pregnancy

- Number of SP doses delivered and used by district, number of stock-outs
- % of districts with health facility staff fully trained in IPT
- % of districts covered by IEC messages on IPT and IPT 2
- % of districts with increases in antenatal clinic attendance
- % of pregnant women receiving IPT1 and IPT2

ITNs

- Number of ITNs purchased
- Number of ITNs distributed by source, by district, by urban/rural and by socioeconomic status
- Number of nets distributed by the commercial sector that are LLINs

IRS

- Number of spraying machines purchased
- Amount of insecticide purchased
- Number of persons (sprayers/supervisors) trained

Entomological Monitoring and Evaluation

Uganda, through the PMI, needs to effectively monitor vector mosquito populations for susceptibility to insecticides to detect selection for physiological and behavioral insecticide resistance associated with IRS/ITN use. Behavioral resistance would be monitored through human bait collections conducted inside and outside houses with IRS/ITNs. The *Anopheles* species mosquitoes collected from the human bait collections would be evaluated for

[6] Data will be disaggregated by Region, District, Gender, Age, and other relevant focus areas

physiological resistance using the CDC Bottle assay, and subsequently identified to species and the sporozoite rate determined using the *P. falciparum* CSP ELISA.

Indoor *Anopheles* vector densities would be monitored to detect changes in IRS/ITN insecticidal efficacy and changes in man-vector contact rates. Efficacy should be monitored and evaluated using indoor pyrethrum spray collections with the mosquitoes collected identified to species and the sporozoite rate determined using the *P. falciparum* CSP ELISA.

Quality assurance of IRS treatment and ITNs should be monitored to verify both initial efficacy and longevity of ITNs and IRS treatment. The standard WHO cone bioassay would be used to for these evaluations.

Entomology M&E will require personnel trained in mosquito collection and identification and an insectary to rear mosquitoes needed for the bioassays. An ELISA testing capability could be established in each country, or mosquitoes could be sent to a central/regional laboratory for analysis. When resistance is identified, CDC-Atlanta staff will assist in identification of the mechanism(s) using biochemical and molecular methods.

Other data collection

Uganda has a health management information system (HMIS) that collects disease and case incidence data from all districts in Uganda, including reporting on malaria cases. Reporting from most districts includes information from over 60% of all sub-districts and counties, with many districts reporting 70-80% of sub-counties. There is an upward cascade of reports: from the health units to district headquarters, and finally to Ministry of Health headquarters. There is an Integrated Disease Surveillance and Response system in place. Both of these systems collect data from the facility level. Through the HBMF program, community data is available, but it is of poor quality and not generally aggregated at district or national levels. The community medicine distributors have registers in which they record what actions have been taken; however, this information is not always collected by the health facilities.

There are two demographic sentinel system (DSS) sites that are only marginally functional. The PMI will work to strengthen one DSS site so it can provide periodic surveillance data to monitor progress. Data from these sites will be used to monitor the impact of the new malaria treatment policy (ACT) on malaria morbidity and mortality in the country. There are also seven functional sites for anti-malaria drug sensitivity monitoring. Studies will continue at these sites and the results will help inform the program directorate of any need for treatment policy review.[7]

While there is limited capacity for reporting adverse drug reactions, a well-functioning pharmacovigilance system is not in place. Thus, development of such a system is a high priority for the MOH. This system should monitor susceptibility or resistance to insecticides for ITNs or IRS as well as ACT adverse drug reactions.

Proposed USG component:

[7] The East African Network for Monitoring Antimalarial Treatment (EANMAT) was established in 1997 with 8 sentinel sites in Uganda, Kenya and Tanzania. In Uganda, seven of these sites have successfully conducted many rounds of studies. Data from these sites were used as evidence to change the malaria treatment policies.

1. *Strengthen one DSS site:* In year one, the PMI will focus on strengthening DSS sites so that that can provide the necessary data to measure all-cause mortality and malaria related mortality.
2. *Support the addition of verbal autopsy to the FY06 DHS:* The addition of verbal autopsy allows the DHS to identify malaria deaths and thus create a baseline of malaria mortality. Concurrently, this will provide an opportunity to examine the sensitivity and specificity of verbal autopsy to identify malaria deaths
3. *Collect HIS and other data on ITN use, IRS coverage, IPT coverage, ACT roll-out, and quality improvement.* The MEMS project will serve as central data collection point to analyze PMI progress towards the goals and allow for rapid reporting of results.
4. Appendix 4 outlines these activities as well as other M&E activities funded centrally.

EXPECTED RESULTS – YEAR ONE

Indicator*	Baseline	Year 1
Proportion of pregnant women who receive 2 or more doses of IPT during their pregnancy	33%	40%
Proportion of children under five sleeping under an ITN the previous night	15%	50%
Proportion of pregnant women sleeping under an ITN the previous night	12%	35%
% of houses targeted for indoor residual spraying (IRS) that have been sprayed	0%	60%
% of districts nationwide where malaria treatment with ACTs is implemented in health facilities	0%	50%
% of children under five with suspected malaria attending a government health facility receive treatment with an ACT	0%	35%
% of children receiving community treatment of malaria (children under five with fever who receive treatment within 24 hours of onset of symptoms)	60%	60%

*95% of the population is at risk of malaria year round- 5% of the population is only at risk during epidemics.

INTERVENTIONS - PREVENTION

INTERMITTENT PREVENTIVE TREATMENT

Current status

In 1998, the policy for Intermittent Preventive Treatment for pregnant women (IPT) was adopted to cover all of Uganda's districts; however, implementation did not begin immediately. The IPT policy recommends that pregnant women should receive two doses of SP after the first trimester. The MOH included MIP control strategies in both its Health Sector Strategic Plan I (HSSP1

2000-2005) and HSSP II (2005/06-2009/10). At the central level of the NMCP, a focal person is responsible for MIP related activities. This person is expected to work closely with the Reproductive Health unit (RH) to implement focus antenatal care (FANC). FANC is a minimum package of services that a pregnant woman should receive when visiting an antenatal care facility (ANC). The MIP strategy identifies activities that should be conducted at different levels of the health delivery system, including the community level. The RH and NMCP are jointly responsible for the implementation of the program through training, support supervision, monitoring and evaluation and operational research.

The 2004 report on MIP activities presented by the NMCP showed that approximately 95% of pregnant women in Uganda attended ANC at least once during their pregnancy. Of those women, 80% returned for a second visit. However, the women start ANC visits very late in their pregnancy, and therefore very few received the recommended 2 doses of SP. SP resistance in Uganda is about 10%, and the current HIV sero-prevalence among pregnant women is 6.4%. There is a varying level of IPT coverage in different districts ranging from 10% to 50%, and the national average of IPT_2 (2 doses of IPT during pregnancy) is estimated at 33%.

District health workers were trained on IPT during an ongoing training by the USAID program DISH II, which included a section on MIP. A national FANC training manual does not exist, and the previous MIP training was limited to ANC workers only. Uganda was successful in its application for the GFATM Round 2, and IPT was a component of the application. A number of the NGOs are implementing IPT in the districts where they operate. There is no systematic implementation of IPT in the private sector and there are no reports available from private clinics to the NMCP.

Although the NMCP and RH are supposed to jointly implement all activities related to IPT, the NMCP solely handles IPT activities. In some of the health facilities where IPT is being implemented, there are a number of problems including inadequate orders by health facilities of SP for both treatment and IPT. As a result, SP is used only for case management, as ACT implementation has not yet started. Most of the ANC clinics do not have SP available, nor do they have cups and water available for pregnant women to take SP as directly observed therapy (DOT). Anecdotally, it is said that a number of pregnant women, as well as some ANC workers, believe SP is too strong a medicine to be taken during pregnancy, and therefore the women do not take the SP even if it is available. In Uganda, ANC services are only delivered at health centers that service the sub-county level and above; this reduces pregnant women's access to IPT.

The NMCP is planning on developing a directly observed therapy (DOT) approach at the community level for IPT. This will be integrated with the HBMF and other community-based interventions.

Proposed USG Component

The current level of 33% of pregnant women receiving at least 2 doses of IPT is well below the Abuja target, and far from the PMI target of 85%. Through PMI, efforts will be made to address and solve identified problems to increase coverage of IPT.

PMI will facilitate a review of the current implementation of IPT activities in the country involving the NMCP, RH and all stakeholders, especially NGOs. A multi-disciplinary technical team will be established to review and adapt a FANC training manual as well as the facilitator's guide. The team will subsequently write an implementation plan for the re-training of health workers. This training will also include NGOs and FBOs, and all categories of health workers who play a role in the delivery of services at the facility level, including dispensary and laboratory staff. This will help resolve the problem of inadequate SP requisition, and make SP available to ANC staff to provide IPT with SP as through DOT. Strategies will be discussed with districts on how cups and clean water may be provided for IPT DOT implementation.

To create demand for IPT by pregnant women, advocacy using appropriate IEC materials will be used. These messages will encourage pregnant women to attend ANC early and these messages are intended to expel the notion of SP being too strong of a medicine to use during pregnancy. Advocacy will be headed by the health education unit of MOH in collaboration with the NMCP utilizing all available media outlets.

The RH and NMCP will work with the data collection unit of MOH to improve the data collection process and analysis of IPT uptake at the district level. Feedback will be given to each district accordingly.

Proposed activities are as follows:

1. *Adoption and printing of FANC training manuals:* A multi-disciplinary technical team composed of academia as well as the NMCP and RH program will organize a five-day workshop to review all available literature and develop country specific guidelines for FANC activities. The team will adapt existing training manual to address the Uganda context. This team will also update the pre-service curriculum for the various institutions that train health professionals.

2. *Develop implementation plan for FANC training:* Both the NMCP and RH will develop a systematic detailed plan of action for training of health workers in the country. The training will last approximately 3 days.

3. *Develop and conduct FANC training for health workers:* The training could have an initial training-of-trainers (TOT), after which teams will be formed to start training the various identified regions. Participants who excel during the training will be recruited to facilitate subsequent trainings.

4. *Adequate requisition of SP from medical stores:* With the arrival and introduction of Coartem for case management, the SP stock in the country will be reserved for IPT use only. Therefore, enough SP will be available for the initial 2 years of the PMI. However, national estimates will be made and sufficient SP will be ordered during the second year of PMI.

5. *MOH IEC nationwide advocacy plan:* The health education unit of the MOH, in collaboration with the NMCP, will lead in the development of IEC materials. The health education unit will also be responsible for the dissemination of the materials in both print and electronic media.

6. *Support MOH's effort in Community-based DOT for IPT:* The NMCP will receive assistance in the development of a DOT strategy for IPT at the community level. This will include advocacy, training, supportive supervision, and other areas relevant to the strategy.

INSECTIDE-TREATED NETS

Current Status

The HSSP II and the MCSP recognize that ITNs are a key malaria control intervention, and outline a rapid scale-up of ITN use nationwide. The main focus of the strategy is to create a demand for ITNs, ensure the availability of affordable nets, provide subsidized or free ITNs to vulnerable groups such as pregnant women, children under five and people living with HIV/AIDS (PLWHA) and promote correct use of ITNs.

Only 15% of under fives and pregnant women are covered with ITNs, and national household coverage is cited at 26%. Geographically, coverage varies widely and districts having a higher mosquito biting nuisance problem have an increased use of ITNs. It is estimated that 7.17 million free ITNs and 2.75 million private sector ITNs are required over the next five years to achieve 85% coverage in all households.

Uganda has promulgated a segmented approach to the distribution of ITNs to end-users. The country proposes to create demand with highly subsidized ITNs with the expectation that this will attract the commercial sector, the main stay for ITN distribution for long-term sustainability. Currently, the commercial for-profit sector sells approximately 500,000 ITNs per year in mainly urban centers such as Kampala and other similar commercial centers. In areas where the population possesses a reasonable income level and ITN commercial viability is demonstrable, subsidized and socially marketed ITNs will be used to encourage the commercial sector to enter the market. ITNs will be provided free to the population segment that is unable to afford any commercial sector or subsidized ITN. Within the GFATM round 2 grant, 1.8 million bundled nets are expected to arrive in early 2006 for free distribution to children under five, PLWHA, and the poorest of the poor. Distribution will take place through routine mechanisms such as ANC clinics and national campaigns. In addition, these populations will be targeted with health education and behavior change to help ensure correct and regular use of ITNs.

Considering that a number of nets exist within the population, it is important that these nets are impregnated with a long-lasting insecticide to improve their efficacy against malaria. The government policy regarding net re-treatment is the provision of this service free to the end user, including places where commercial distribution is occurring. Since 2004, approximately 450,000 nets are re-treated annually in 20 districts, which represent about one third of the existing non-ITN nets. Depending on the types of nets to be distributed in the near future, the re-treatment campaigns may have to be scaled up and maintained at the same level for the next 2-3 years, or

scaled down once long lasting re-treatments and the supply limitations on LLINs ease.[8] The UPHOLD project has a record of successfully implementing net re-treatment campaigns.

Proposed USG component

The PMI aims to work within this ITN strategy and segmented market to increase ITN coverage of pregnant women, PLWHA and children under five by 2010. In year one, PMI will focus on distributing free LLINs in the IDP camps in the North, retreating existing ITNs, developing a commodities management system and procuring LLINs for distribution nationwide in FY07. Proposed activities are as follows:

1. Distribution of ITNs in the IDP camps in the North: In year one, the PMI, as part of its "jumpstart" activity, will distribute approximately 395,000 free LLINs in IDP camps in the North with the aim of achieving 85% coverage of the pregnant women and children under five. The Northern districts of Uganda have been engaged in an 18-year civil war which has resulted in 1.4 million internally displaced persons, including 300,000 pregnant women, 850,000 children below the age of five years and approximately 150,000 people living with HIV/AIDS who know their status. A recent survey by WHO and partners revealed that the Northern districts of Uganda are contributing the highest per capita deaths among national totals. Some studies show under five mortality rates as high as 5.4/10,000/day; most of these deaths are postulated to be attributable to malaria. These alarming health statistics and ease of distribution of LLIN through the IDP camp structures will enable the PMI to make a quick impact on the health of this vulnerable population.

A total of 395,000 LLINs are needed to achieve the PMI's target of 95% coverage of pregnant women, children under five, and 50% coverage of PLWA in year 1. Currently, through a combination of FY05 funds and other donor efforts, 245,000 LLIN have been procured. Of these 245,000 ITNS, the JSI UPHOLD project, a USAID health bilateral contract, has procured 180,000 LLINs, which should be available by the end of CY05 and UNICEF has procured 65,000 LLINs. To address this gap, the PMI will need to procure an additional 150,000 LLINs through UNICEF. Of the total 395,000 LLINs, 250,000 will be targeted for children under five and the remaining will be distributed to pregnant women and people living with HIV/AIDS. The table below describes how these 395,000 will be distributed to the targeted distribution.

It is anticipated that the LLINs will be distributed through NGOs and international organizations that are already established and working in the North. In the IDP camps, there is high access to health facilities, and previous efforts to distribute ITNs through ANC clinics have been successful. The PMI will work with local NGOs currently providing relief efforts in the North to distribute the LLINs and provide the necessary accompanying IEC and BCC materials through the AFFORD project to ensure that the LLINs are used correctly and consistently. The AFFORD project will also supply a limited number of subsidized ITNs to help promote the private sector ITN market.

[8] Studies are currently underway in Uganda to test the long-term efficacy of nets retreated with long-lasting treatments (KO-TAB 123).

Table 3: ITN requirements in the IDP camps in Year 1 to achieve 95% coverage

Baseline	Total Nets per Target group
25% <5s already using ITNS in IDP camps	245,000
25% Pregnant Women Already using ITNs in IDP camps	60,000
25% of PLWHA using ITNs in IDP camps	50,000 (50% coverage)
Total	**395,000**

2. ITN Re-treatment: The PMI will support the re-treatment of existing nets in 19 selected districts with a population of 10.8 million people in 2.2 million households. These districts are currently supported by the USAID UPHOLD project that has trained re-dippers that are experienced in net re-treatment. The previous re-treatment campaign retreated approximately 74% of existing nets. The launch date for this follow-up re-treatment campaign is January/March 2006 in order to ensure continued efficacy of these ITNs. Approximately 715,000 nets will be retreated. The campaign will be supported by an IEC campaign launched by the Afford social marketing project.

3. National distribution of LLINs: Currently, 15% percent of the five million children under five and 12% of the 1.3 million expected pregnant women are using nets. To achieve 50% coverage of children under five, 1.8 million nets are needed. In 2006, approximately 2 million ITNs will be distributed via a mass distribution campaign to children under five, and PLWHA. These ITNs will cover both newborns as well as play "catch-up" with older under five children and will be a national effort[9]. These ITNs will be provided by the following organizations: GFTAM procurement of 1.79 million bundled ITNs targeted for children under five, a JICA procurement of 30,000 ITNs, and the previously mentioned UPHOLD purchase of 180,000 LLINs. Because the above mentioned ITNS are primarily targeted at children under five, the PMI will focus on providing ITNs to pregnant women. To achieve 35% coverage of pregnant women, the PMI will procure through UNICEF the 300,000 nets needed and will distribution them upon their arrival in year 2.

Table 4: 2007 ITN NEEDS and PMI procurements

Baseline	2007 ITN needs and Sources of ITNS
15% <5s already using nets 780,000	Total ITNs needed: 1.8 million (50% coverage) Sources ITNs: 30,000 from JICA 70,000 from UPHOLD 1,790,000 from GFATM 0 from PMI
12% of Pregnant Women Already using ITNs	Total ITNs needed: 300,000 (35% coverage)

[9] This effort will not be in the Kabale district which is receiving IRS.

156,000	Sources of ITNs: 300,000 from PMI

In order to successfully distribute the large new influx of ITNs, the existing logistic management and quality assurance systems need to be strengthened. There is limited storage and distribution capacity at all levels for a bulky commodity such as nets and re-treatment kits. The PMI will support the design, implementation and strengthening of the ITN logistics system to facilitate the prompted distribution of the ITNs. This activity may be conducted in concert with the private sector as part of a GDA.

4. Support of the Private sector for ITNs and monitoring net distribution: There is a high rate of sales of untreated nets in the Ugandan market; these nets are priced under $3, while ITNs sell for over $5. AED/NetMark*plus* will work to support the development of private sector and implement a program to expand ITN distribution to open markets in rural and peri-urban areas, targeting vulnerable populations (e.g. pregnant women and children under five) which are in line with the Uganda segmented market strategy.

INDOOR RESIDUAL SPRAYING

Current Status

The GOU MOH supports the use of IRS in epidemic-prone districts, located in the southwest and east of the country. Because of its high cost, IRS is used on a limited basis, in response to malaria outbreaks in these districts. In addition, transportation, logistics, capacity, mapping and M&E are some of the existing constraints in the IRS program. The GOU is developing a document, *Policy and Strategy for Indoor Residual Spraying*, which recommends routine IRS in 15 epidemic-prone districts. These 15 districts have 1 – 1.5 million households and represent approximately 20% of the total population in Uganda.

IRS is managed by the Vector Control Division of the NMCP. In addition at the central level, the National Drug Authority (NDA), which is responsible for conducting quality assurance, and the National Medical Stores (NMS), the clearing/storage agent for IRS commodities, are involved in the IRS management chain.

Currently, IRS operations take place at the district level with sub-counties, parishes and villages taking on various responsibilities. For example, Kabale District, in the SW, carries out localized (not district-wide) house spraying based on stratification of villages using clinical data. Based on this clinical data, 2 (of 20) sub-counties, Bukinda and Kamwezi, had IRS activity. In these sub counties, a total of 1,987 structures have been sprayed, protecting approximately 10,000. By comparison, the total estimated population of the district is approximately 500,000. In the district as a whole, 300 spraymen/women have been trained and this would enable the coverage of the 263 'high risk' villages in 38 of the 118 parishes. To expand IRS to the entire district, additional capacity will be needed, especially in the areas of training, transportation, storage of insecticide, supervision, planning and oversight, safety (human and environmental), and attendance to issues

of leakages to the agricultural sector. Resources will be required to export this district-level organization, once established, to other districts.

Existing data show that the vectors are susceptible to deltamethrin, permethrin and DDT. While DDT lasts longer,[10] concerns about safety and leakages into the agricultural sector have prompted the NMCP to use synthetic pyrethroid formulations (Lambda-cyhalothrin, deltamethrin and alpha-cypermethrin in 10% WP (wetable powder) for IRS.

The use of IRS in SW Uganda was supported under Round 2 of the GFATM, which proposed the expansion of IRS activities in 3 highland districts. The GFATM PMU tendered bids for 800 sprayers and insecticides (pyrethroids) totaling $100,000. Delivery was scheduled for late 2005, but the proposals to this tender were not acceptable quality and subsequently the tender has not been awarded. The GFATM Round Five proposal, which also requested support for IRS in 15 districts (1-1.5 million households, accounting for approximately 20% of the population), was not funded. This gap is an area which the PMI can address. Many of the unmet needs and opportunities related to IRS are defined in the GFATM Round 5 proposal. The document was based on an extensive needs assessment developed by the MOH and USAID. The PMI proposed activities for the first year will be to support IRS activities described in Rounds 2 and 5.

At the point of entry, the NDA requires that all insecticides be analyzed prior to use, but at the moment NDA does not have the required equipments for this analysis. Bottlenecks may occur in the transportation, storage and quality control of insecticides. Delivery from the port of entry to this location, either through the National Medical Stores or other secure means to avoid delays could be considered. The DDHS, Kabale has secure storage space for insecticide at the district level. At present, there is limited capacity of the storage facility personal on how to handle insecticides.

Proposed USG Component:

The GOU has requested support to expand the use of IRS in epidemic-prone areas of the country. In year one, the NMCP needs support for strengthening/development of the IRS chain (all levels, all associated activities) to accomplish: (1) one round of spraying in 100% of the households in Kabale District (2) the capacity building of a Ugandan IRS team and (3) the development of a Ugandan IRS system capable of training, organizing, and supporting the 'phased in' IRS expansion to the 15 surrounding districts over the next 4 years.

Specific activities include: (1) strengthening of human resource capacity for the IRS team at all levels through on-the-job training with a contractor hired to conduct the year 1 IRS activity as well as input from technical partners with expertise in specific areas (quality assurance, logistics, procurement, certification, IEC); (2) comprehensive environmental impact assessments carried out by contract through USAID; (3) strengthening and upgrading of existing surveillance activities (e.g. the Highland Malaria Project (HIMAL)), designed to track clinical data and predict epidemics; and (4) technical support from appropriate technical partners to the M&E unit

[10] Evidence from South Africa indicates that the effective lifetime of pyrethroids on mud walls is significantly shorter than that of DDT

of NMCP, which has conducted vector-insecticide interactions assessments (resistance, repellency, outdoor biting).

Proposed activities are as follows:

1. *Support IRS in the Kabale District:* The PMI will assist the NMCP and their partners with an IRS campaign in the Kabale district using the insecticide lambda cyhalothrin. All households in the district are to be sprayed, however, the first ones to be targeted will be the 200 'high risk' villages described in the MOH briefing document "Kabale District - Parishes most affected by malaria." Specific assistance will be provided to conduct the initial round of spraying, purchase insecticide, build the capacity of the IRS team (all levels), and expand IRS operations based on the national IRS policy document currently under development by the NMCP with assistance from technical partners. This will also include the mapping of area selected for IRS.

2. *Build IRS management capacity locally:* The PMI will work through the RTI project to build the local capacity of Uganda to support the expansion of IRS. This would include the development of goals and targets which reflects the 5-year Uganda country PMI objective (15 districts to be sprayed during years 4 and 5 plus targeting of certain institutions (boarding schools, hospitals, prisons) where ITN use is less feasible. This management unit would also handle the logistics related to the transport of the insecticide and the forecasting and procurement of insecticide for future years.

3. *Support MOH in IEC/BCC/community mobilization:* Activities will include campaigns to mobilize and educate communities in villages targeted for IRS on what IRS is, as well as the benefits, risks and proper procedures for safety.

INTERVENTIONS – TREATMENT

CASE MANAGMENT

Current status

Uganda is a member of the East Africa Network for Monitoring Antimalarial Treatment (EANMAT) and has sentinel sites for drug testing and efficacy monitoring. Studies conducted by these sites between 1995-98 showed CQ resistance of 28.5% in children under five years old. By 2002-04 the resistance increased to 33%. SP resistance increased during same period from 5.5% to 16%. Based on these findings, the national malaria treatment policy for first-line treatment of malaria was changed from CQ monotherapy to a combination of CQ and SP. This was an interim solution until better options became available. Although the decision was made in 2000, the change was not implemented until 2002. However, further studies done on drug sensitivity between 1999-2001 and 2002-2004 also showed increasing resistance to the CQ/SP combination from 7% to 11.7%. In late 2004, a national malaria treatment policy was adopted with Coartem as the 1st line drug in treating uncomplicated malaria and artesunate + amodiaquine as the alternate. Quinine is still maintained a second-line treatment and for treatment of complicated malaria and the treatment of uncomplicated malaria in pregnancy.

Uganda was successful with its GFATM application for round 2 and 4, and has been granted funding to improve its malaria prevention and control activities. Part of the round 4 grant is being used to purchase Coartem to implement the new treatment policy adopted in 2004. Despite the GFATM suspension in Uganda (now lifted), an emergency procurement of 15.5 million doses of Coartem was processed. The first of four shipments of 3.8 million doses is now expected for February 2006. Once the expected shipments from the GFATM arrive, Uganda should have enough Coartem for use in health facilities until early 2007, with the exception of some IDP camps in the north. [11] In order to adequately provide Coartem in the north, another 130,000 doses are needed. The emergency procurement did not include the second-line therapy, quinine or injectable artesunate, and it is expected that there may be shortages of these life-saving drugs.

In Uganda, there are two major institutions to procure essential drugs for the health facilities: Joint Medical Stores (JMS) for the NGOs and National Medical Stores (NMS) for the public sector. The distribution system at the NMS has recently incorporated the pull system whereby the district make their drug requisitions based on their consumption rather than the NMS just sending some estimated drug quantity. Districts order drugs against a credit line established at the ministry. Some drugs are free and therefore without charge against their credit when ordered by the districts. JMS has been importing artesunate since 1999 and is selling it to its customers who are mostly the mission hospitals, health facilities and some private for-profit clinics. While both NMS and JMS are aware that Coartem is expected in the country, there is not yet a detailed plan for integrating it into the drug distribution system and phasing out of the old drug. The NMCP intends to have an accelerated roll-out of Coartem throughout the country upon the arrival of the drugs.

The current malaria treatment guidelines of the NMCP state the following: "Any patient with fever or a history of fever within the last 24 hours without evidence of other diseases should be treated for malaria even with a negative blood smear for malaria parasites." Where laboratory facilities exist, blood examination for malaria parasites should be done for patients who present with features of severe malaria, patients who have taken antimalarial treatment for 2 days and symptoms persist, children under four (4) months with symptoms of uncomplicated malaria, and pregnant women with symptoms of uncomplicated malaria.

For the last few years, Uganda also has been implementing home-based malaria treatment package, a combination of CQ/SP, called Homapak, which is distributed through community drug distributors for treatment of fever in children under five within 24 hours of onset at home. Presently, this is HBMF is being implemented throughout the country. The present national plan is to replace the components of Homapak with ACTs. Operations research activities will be undertaken to determine if ACTs are appropriate for use at the community level.

Given that the current supply of Homapak will run out in June 2006, it is of urgent necessity to develop a transition strategy to keep Homapak activity until ACTs can be introduced in this program. The Government of Uganda is resistant to the idea of changing to an interim treatment (e.g. SP/AQ) and has decided to continue using Homapak in its current CQ/SP formulation until

[11] The GFATM Round 4 grant is from 1 January to 31 December 2009.

ACTs are found to be appropriate and are available for use at community level for HBMF. In addition, the GOU is identifying alternative funding sources other than the PMI or the GFATM for the continued purchase of the Homapak.

Training of health staff on use of this new drug has yet to commence. There is a detailed plan by NMCP for the training of health staff for a Coartem roll-out and use as well as a budget for training in Coartem implementation. The training of the whole country will take about 4 months. It is also necessary to update the curricula of pre-service institutions that train health workers. With the introduction of Coartem, there should be a pharmacovigilance system put in place to monitor adverse drug reactions. Currently, Makerere University—UCSF is conducting a pilot program on pharmacovigilance, and the NDA is also training institutions in pharmacovigilance.

Malaria diagnosis:
At the sub-county level, the health centre level III is the lowest level in the health delivery system with a laboratory and is supposed to be operated by a laboratory assistant and offer basic laboratory tests. However out the 901 health centre III, only 346 have functional laboratories. The Central Public Health Laboratory (CPHL) is mandated to coordinate, monitor and supervise all the HC III and IV level laboratories but the CPHL is grossly understaffed having only 3 persons and with few resources to carry out this mandate over the peripheral laboratories. Many of the laboratories have even fewer resources and the quality of service is low.

In Uganda, out-patient attendance due to malaria ranges between 25-40%. Most of malaria diagnoses in health facilities are based on clinical presentation. The NMCP strategic document refers to the reliability of microscopy, which is influenced by the quality of equipment, expertise, and the experience of the person performing the test. The document also cautions of the accuracy of these laboratory results, and therefore recommends presumptive treatment of malaria for persons with fever within 24 hours without the evidence of any other disease.

The NMCP presently does not recommend routine use of RDT for diagnosis in Uganda except in the cases of epidemics and in children under 4 months. The NMCP is expecting 100,000 RDTs in the country under the GFATM round 2 grant and this will be used for pilot studies in 3 districts. This will help inform where and when to use RDT. The MOH continues to recommend that the diagnosis of malaria be largely be presumptive; however, the PMI will promote the use of RDT at laboratory facilities to expand diagnostic capabilities. RDTs are not currently used in health facilities, but it is expected that RDTs will be used in HC II & III, many of which may not have laboratory facilities. RDTs may also be used in special situations of suspected malaria epidemics as they occur in certain highland areas, and when mass population movements occur as in some of the northern parts of the country.

Through the PEPFAR, funds have been provided by CDC for the purchase of 35% of the national requirements of microscopes. Through the GFATM round 2, 150 additional microscopes (representing 25% of the national need) have been ordered, but there is still a 40% deficit. AMREF, a NGO, has been contracted by CDC to conduct quality assessment in the various facilities and train laboratory personnel on laboratory management and quality control. Refresher training will also be conducted for all laboratory facilities to improve integration of programs such as tuberculosis control program.

Drug Quality:
The government of Uganda has mandated the NDA to test all antimalarial drugs that are imported or manufactured in the country before they are permitted to be sold. Even though the NDA receives a fee for each drug test, it does not generate enough resources to buy the needed equipment to facilitate or expedite its work. With the expected arrival of an increased quantity of antimalarial drugs and insecticide for IRS, it is important to help the NDA acquire the needed equipment to quickly conduct post-shipment testing and prevent bottlenecks.

Proposed USG component:

Proposed activities are as follows:

1. *Procurement of ACTs:* The major source for procurement of ACTs (Coartem) for the government and NGO health facilities will be mainly from the Global Fund round 4 grant, which was signed in March 2005. Despite the suspension of the GFATM grants (now lifted) in Uganda, Coartem was still purchased as part of an emergency procurement of life saving drugs. With the first shipment of Coartem (3.8 million doses) expected latest in February 2006, there is no immediate need for ACT procurement through PMI, except for the Northern Districts. As part of the "Jumpstart" activity in Northern Uganda, the PMI will procure 130,000 doses of Coartem through WHO.

2. *Logistics and Supply management:* If ACTs are to be rolled out quickly, they must be integrated into the current system of drug distribution, and 20% should go through JMS to the private, not-for-profit sector, and 80% through NMS for the government facilities. For NMS, this implies that Coartem must be included in the drug list for the districts as a free drug. In addition, distribution plans for an initial push of 2-3 months supply for each district must be prepared, and emergency procurement for the districts in the North receiving ACTs earlier will ensure a continuous supply. Technical assistance through the Deliver project has to start immediately since successful rollout of ACTs will depend on it.

3. *Quality control:* According to Ugandan law, all imported drugs have to be quality tested by the NDA. While the laboratory capacity at this institution is being built through various mechanisms (including PEPFAR), there is still need for further expansion in order to guarantee that all incoming ACTs are rapidly processed. A high pressure liquid chromatography machine as well as a gas chromatography machine, together with an initial supply of reagents, will be procured, and funds will be supplied for training of staff.

4. *Training of health workers on ACT:* The training of health workers on the new treatment policy for uncomplicated malaria will follow the model successfully used in 2002. A core national team consisting of zonal coordinators and consultants will be re-trained. Many members of the team have already been involved in the last training, as well as in the development of materials for the ACTs. These will in turn train and orient the district

staff in several regional workshops. With support and supervision from the core team, the districts will then train all health workers on-site as part of a one-day training at the health facilities. Since the core team is already available and the training materials for the new ACT treatment policy have been developed, this activity can be accomplished nationwide within 3-4 months, provided the funds are available including the printing of the materials (e.g. health workers' guide for uncomplicated malaria treatment and laminated treatment algorithms). In order to have the training in place by the time the ACTs are delivered to the districts in about February 2006, this activity must be given high priority. Another activity to be carried out includes updating the pre-service curriculum to incorporate the new treatment policy. There is also a need to train health workers in hospitals and health centre IVs (four-day workshops) in the management of severe malaria.

5. *Supportive Supervision:* Supportive supervision of health workers will help improve and maintain good practices. Supervision of HBMF the community drug distributors is a serious gap for which the districts lack funding. It is recommended to hold quarterly supervision meetings and also if possible, and to visit each community medicine distributor at least one every 3 months.

6. *IEC/BCC:* This is a critical activity to ensure the acceptance and correct use of Coartem. Comprehensive plans for advocacy, mobilization and BCC at all levels are part of the GFATM round 4 grant, and although the suspension of these funds has been lifted, the PMI will need to ensure that activities on the ground by early 2006. Availability of these funds is still not known. Essential measures will be taken over by PMI as negotiated. This could include development of key messages, posters and radio spots in several languages, printing, production and dissemination. As soon as GFATM funds are available, the PMI will shift funding from this activity to other priorities.

7. *Pharmacovigilance:* Since Coartem is a new drug on the market, there needs to be a system in place to capture possible adverse effects. Passive surveillance is carried out by NDA within their routine activities. In addition to funding through the GFATM round 4 grant, several activities are currently being carried out or planned by other partners (CDC/UCSF, DfID/MC) that will contribute to the development of a pharmacovigilance system. Therefore, no immediate action is needed through PMI. However, during year 1, progress will to be closely monitored and adequate provision made for year 2 should this be necessary.

8. *Diagnostics:* There are two main lines of activities planned under the NMCP to improve diagnosis of malaria, strengthening and expansion of laboratory services at health centers that serve the district and sub-county level and introduction of RDT where feasible. For the latter, it is planned to first develop guidelines and an implementation strategy through a pilot in the three districts. Funding for this pilot is available through DfID/MC as well through the implementation of the GFATM Round 4 grant. It is expected that this will take place in the first half of 2006, with results available by the end of 2006. However, for the procurement of RDTs, PMI will have to provide funds in years 2-5.

9. *Home-Based Management of Fever (HBMF):* The current position of the MOH is to continue to use Homapak in its current SP/CQ combination at the community level until community-based ACT becomes available. However, it is also clear that a nationwide implementation of community-based ACT will need significant further study and preparation in order to develop a feasible implementation strategy; this strategy is not expected to be available before mid 2007. Due to the recent emotional discussions about the use or non-use of CQ combination treatments in Eastern Africa, no partner including the PMI will procure any Homapak to bridge the gap of one or one and a half years. Thus, unless the NMCP agrees to purchase (or identify another funding source) additional supplies of CQ needed, there will be a complete collapse of the HBMF strategy in 2006. This will not only lead to increased morbidity and mortality, but also to a loss of confidence in the population, making introduction of community-based ACT even more difficult.

   Should MOH change its position, there will be urgent need for technical assistance for the transition process (registration with NDA, packaging, trade name issues, forecasting, re-orientation of distributors etc) and procurement of the "improved Homapak". However, all indications are that such a change is unlikely.

   The PMI will continue to support the community drug distributors who are implementing HBMF at the local level while supporting an evaluation of the viability of HBMF using ACTs. This evaluation will develop and test adequate strategies for the introduction of community-based ACT.

10. *Management of severe malaria:* In spite of a number of trainings undertaken in the past, management of severe malaria in hospitals and peripheral health facilities is not satisfactory. This is largely due to managerial issues and availability of support commodities and, to a lesser degree, the lack of quinine. The latter is being purchased through GFATM round 4, while the former issues have at least some support from other sources (DfID/MC, GFATM), although these are not sufficient for a country-wide coverage of activities. There is also an ongoing operational study on the introduction of rectal artesunate. In view of this and the limited funds available in year 1, PMI will address issues in severe malaria management only in year 2.

INTERVENTIONS – EPIDEMIC RESPONSE

EPIDEMIC SURVEILLENCE AND RESPONSE (ESR)

Current Status

Epidemic malaria occurs in 15 districts in the highland regions of southwest and eastern Uganda. These epidemics typically occur in the rainy season. While the NCMP includes early detection and rapid containment of malaria epidemics as one of its objectives, existing systems for epidemic detection and response are generally weak and poorly organized. There is a threshold established for each epidemic-prone area, however, the sensitivity of this surveillance is unknown. There is no detailed plan on epidemic response and containment, and it tends to be reactive rather than proactive.

Through a routine HMIS system, districts report health information, including cases and deaths due to malaria, on a weekly basis. The Central Public Health Laboratories also feed information into MOH surveillance systems. In addition, in 2 epidemic-prone districts, Kabale and Rukungiri, the Highland Malaria (HIMAL) surveillance project has been introduced and is functioning in those two districts. Base line data (clinical, entomologic, parasitologic, temperature and rainfall data) collected from sentinel sites are used to model and predict malaria outbreaks. The purpose of this data is for early detection of malaria outbreaks, based on weekly reports using sentinel sites, and regular reporting and plans to integrate it with the routine surveillance system.

Proposed USG component

This activity is managed under the NMCP and is beyond the funding capacity of the PMI in year one. An assessment of needs for ESR may be explored for possible expansion in years 2 and 3.

INTERVENTIONS – CROSS CUTTING ACTIVITES

ADVOCACY, BCC, AND IEC

Current Status

Uganda's underutilization of basic malaria prevention and treatment interventions is in part due to a lack of understanding of malaria at all levels. Most adults and caretakers of young children still lack adequate knowledge about the signs and symptoms of both uncomplicated and severe malaria, and those who have knowledge do not recognize the importance of early and proper treatment. Many families in Uganda still believe in home treatment of malaria, and a common first-line treatments include traditional medicine as well as home treatment with CQ only (the latter treatment is preferred in over 70% of cases). Those who do seek facility based treatment often fail to follow the treatment regimens, and many families continue to save "extra drugs" so that they can treat other family members when they fall ill.

A lack of an understanding of the importance of malaria prevention measures especially for pregnant women and children under five is widespread. Appropriate IPT in pregnant women is limited because few women attend ANC clinics early enough in their pregnancy or attend more than twice. In addition, many health workers have not had any training in IPT, and many health facilities lack policy and treatment guidelines. ITN use is also low throughout Uganda in part due to a thorough understanding of their importance. The most commonly cited reason for not owning a mosquito net is cost and the inconvenience of placing/using nets. Finally, understanding of IRS is limited due to its relatively low use in Uganda in recent years.

Although some interventions have been undertaken, BCC and advocacy for malaria control continues to remain an under-resourced area of the NMCP. The National Malaria Control Strategy and the new HSSP (2005-2010) II specifically highlight the need to establish strong IEC, BCC and advocacy interventions to support efforts to improve case management, increase

IPT coverage, and strengthen vector control; however, only a few IEC, BCC or advocacy activities have been implemented. GFATM Round 2 and 4 proposals include BCC and IEC activities to support IRS and the roll-out of ACT. At the national level, a communication strategy for the home-based management of fever/malaria in children and the control of malaria in pregnancy (2001-2005) was developed and partially implemented. Furthermore, print materials have been developed to support the rollout of the new drug policy, but funds have not been available to print these materials.

At a district and community level, the IEC, BCC and advocacy efforts have been ad hoc. Several NGOs are working with the MOH to implement activities to promote the correct and consistent use of ITNs through community-based approaches and mass media, but their coverage has been limited to only a few districts. At the district level, the vector control focal person is tasked with malaria prevention and control, but they often lack the capacity to initiate malaria IEC activities. Consequently, the district structures implement few malaria-related IEC/BCC activities. Additionally, few efforts to promote ANC attendance and IPT use have been undertaken mainly due to disconnect between the RH unit and the NMCP. Lastly, almost no IEC, BCC or advocacy efforts exist or are underdevelopment to support the introduction of IRS, despite substantial negative media reports on the reintroduction of IRS.

Recently, a draft national comprehensive communication strategy to address malaria communication was developed and is pending finalization and approval. This Uganda Communication Strategy for Malaria (2005-2010) targets leaders, service providers and the community through a mix of print media and interpersonal communication methods. It aims to support key malaria interventions, with the following objectives:

- Ensure that malaria receives attention and resources are available comparable to the burden of disease on individuals, families, communities and the national economy.
- Design and implement IEC activities through a variety of channels to increase public knowledge about malaria to influence peoples' attitudes and stimulate appropriate behaviors and practices for better health.

Table 5: Key priorities and goals of the IEC/BCC and Advocacy Strategy

Priority problem	Communication Goal
Inadequate resources allocated for malaria IEC/BCC and control activities	At the national policy, program and district management levels: • Improve awareness about the significance and effects of malaria on national/local development, on public and private sector workforces, and on household economic security • Raise the priority of malaria by line ministries, NGO/FBO program, national and local media, private sector
Children and adults with malaria are not getting proper and early treatment	At the household level: • Improve knowledge about signs and symptoms of malaria and importance of early treatment • Increase knowledge about appropriate treatment drugs and dosages for children and adults • Improve compliance with proper treatment regimens • Educate about the availability of Homapak

Priority problem	Communication Goal
	• Educate about the use of ACTs At the service delivery level: • Improve staff knowledge on appropriate new ACT drug policy and appropriate dosages and side effects • Provide up-to-date materials on policies and treatment guidelines
Pregnant women are not preventing and treating malaria correctly	At the household level: • Improve knowledge about the dangers of malaria in pregnancy • Improve knowledge about IPT for malaria in pregnancy including the need for IPT 2 • Reduce fears about the effects of taking SP during pregnancy • Increase ANC attendance practices At the service delivery level: • Improve service providers knowledge about IPT and appropriate treatment of malaria in pregnancy • Improve availability of up-to-date policies and treatment guidelines
Low use of ITNs	At the household level: • Increase information and knowledge about benefits of ITNs and importance of preventing malaria • Understanding of the correct and consistent use of ITNs • Improve awareness of the importance that children and pregnant women sleep under ITNs • Increase knowledge on how and when to retreat nets At the service delivery level: • Improve information and knowledge about ITNs • Increase demand for ITNs and re-treatment supplies
Low use of IRS	At the National level: • Improve the political support for IRS and an understanding of its benefits At the household level: • Increase acceptance of IRS and importance of preventing malaria • Promote understanding that IRS is safe and its effects

Proposed USG Component

In light of the rollout of ACT, the reintroduction of IRS, the continued low uptake of IPT and the continued need to leverage resources for malaria in Uganda, support for IEC/BCC and advocacy is crucial. In year one, the PMI will support the finalization of the Uganda Communication Strategy for Malaria which will serve as the framework for all IEC/BCC and advocacy activities. Specific activities will include advocacy and IEC efforts to support the reintroduction of IRS in the pilot districts, IEC/BCC activities to facilitate the rollout of ACTs nationally (with review of roles in current GFATM round 4 grant), and IEC/BCC support for the "jumpstart" activity in the

North to ensure the correct and consistent use of LLINs. These IEC, BCC activities will be implemented in a manner consistent with the finalized Uganda Communication Strategy for Malaria. The specifics of these activities and their corresponding timelines have been outlined in the previous sections.

STAFFING AND ADMINISTRATION

Two expatriate staff will be hired to oversee the President's Malaria Initiative, one representing USAID and one representing CDC. The former will be a USAID personal services contractor, and the latter will be a direct CDC employee. Their activities will include the development and implementation of PMI strategies and work plans, coordination with national authorities, managing collaborating agencies and supervising day-to-day activities. Candidates for these positions will be evaluated and/or interviewed jointly by USAID and CDC and both agencies will be involved in hiring decisions.

A technical/scientific officer will oversee all technical and scientific aspects of the PMI in Uganda, including finalizing details of the project design, implementing malaria prevention and treatment activities, monitoring and evaluation of outcomes and impact, and reporting of results. These activities will be undertaken in close coordination with the MOH/NMCP and other national and international partners, including the WHO, UNICEF, the GFATM, and the private sector. The officer will also serve as technical resource to the NMCP.

A manager/administrator will be responsible for day-to-day administration of the PMI in Uganda, office management, personnel issues, and financial management and reporting.

The decision on whether the technical/scientific officer or the manager/administrator will be overall PMI Country Coordinator will be based on their backgrounds and experience. Both the technical/scientific officer and the manager/administrator will work closely with the USAID/Uganda PHN Officer and will report to the USAID Mission Director or her designee. Local support for the initiative will include a local hire.

APPENDIX

Table 1
President's Malaria Initiative – Uganda
Year 1 (FY06) Timeline of Activities

ACTIVITY	2005	2006											
	OCT-DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
Hire PMI in-country staff													
Purchase commodities (LLTNs; re-treatment kits; IRS equipment; ACT; lab equipment)													
Developed pre-service and in-service focused ANC training materials and implementation plan													
Conduct Focused ANC training and IEC activities													
Build ITN procurement, distribution and logistics management capacity													
Support distribution of ITNs to under fives (child health days, immunization campaigns, etc)													
Support distribution of ITNs to pregnant women													
Support net re-treatment campaigns													
Hire IRS contractor to execute first round of spraying and to train new sprayers													
Conduct IRS spraying													
Conduce IEC/BCC campaign on spraying													
Support the introduction of ACTs into existing drug distribution systems													
Update pre-service and in-service curriculums to reflect ACT treatment guidelines													
Train health workers on ACT use													

Table 2
PMI Planned Obligations FY 2006

Proposed Activity	Mechanism	Budget $ (commodities)	Geographic Area	Description of Activity	Relation to Intervention
PREVENTION ACTIVITIES					
Northern Uganda "jumpstart" LLINs	UNICEF	$1050,000 ($1,050,000)	Northern Uganda	Purchase of LLINs for IDP camps in Northern Uganda	ITN
Distribution of "Jumpstart" LLINs	JHU/CCP-AFFORD	$200,000	Northern Uganda	Distribution of LLIN to pregnant women and children under five in IDP camps	ITN
IEC for ITN distribution	JHU/CCP-AFFORD	$400,000 ($250,000)	Northern Uganda	IEC campaign for free ITNS, social marketing and targeted subsidies of procured ITNs	ITN
LLINs procurement	UNICEF	$1,705,000 ($,1705,000)	National	Procurement of LLINs for distribution nationally to target populations in Y2	ITN
Net re-treatment	UPHOLD to Malaria Consortium	$680,000 ($300,000)	TBD	Mass re-treatment campaign in	ITN
ITN logistics	MSH-RPM+	$200,000	National	Support and strengthen the distribution of GFATM nets	ITN
Private Sector LLINs	AED-NETMARK	$330,000	National	Support the development of the private sector net market	ITN
Indoor Residual Spraying in Kabale District	RTI-IVM Task Order	$1,000,000 ($500,000)	Kabale district	IRS implementation	IRS
IEC for IRS in Kabale District	RTI-IVM Task Order	$250,000	Kabale district	IEC, BCC to increase acceptance of IRS in households	IRS

IRS Management	RTI-IVM Task Order	$500,000	National	Manage the logistics, procurement and training to accompany the reintroduction of IRS	IRS
Malaria in Pregnancy Training	JSI-UPHOLD	$330,000	National	Provide training on the administration of IPT as part of a reinvigorated ANC	IPT
IEC for Intermittent Presumptive Treatment	JHU/CCP-HCP	$115,000	National	Provide supportive BCC to encourage women to seek 2 doses of IPT	IPT
TOTAL: Prevention $6,760,000 ($3,805,000) Commodity %56					
CASE MANAGEMENT ACTIVITIES					
ACT roll-out training	JSI-UPHOLD	$330,000	Arua, Yumbe, Gulu, Kitgum, Katakwi, Lira, Nakapiripirit, Kyenjojo, Mubende, Bundibugyo, Mayuge, Pallisa, Bugiri, Kamuli, Bushenyi, Mbarara, Rukungiri, Wakiso, Luwero, Rakai.	Provides training to health care workers on use new ACT malaria treatment policy	Case Management
Logistical assistance for ACTs	MSH-RPM+	$100,000	National	Support the changes in the logistic system necessary to roll-out ACTs	Case Management
Advocacy and IEC for ACT policy	JHU/CCP-HCP	$ 140,000	National	Provides information and educational, media support for roll-out of ACT drug policy	Case Management
Procurement of Coartem as part of "jumpstart"	WHO	$335,000 ($335,000)	Northern Uganda	Procures 130,000 doses of Coartem for Northern Uganda	Case Management

Equipment for National Drug Authority	USP	$225,000 ($125,000)	National	Purchase of HPLC, GC, and reagents for National Drug Authority	Case Management
Evaluation of cACT as part of the HBMF program	CDC- $400,000 UPHOLD- $300,000	$700,000	Select districts	Examines the feasibility of the HBMF with ACT and provides continued support HBMF program	Case Management
Total Case Management $1,830,000 ($680,000) Commodity %37					
MONITORING AND EVALUATION					
Support for one DSS site	CDC/IPH	$100,000	District	Support the strengthening of a DSS site	M&E
Routine reporting	MSI-MEMS	$100,000	National	Collects and analysis data for reporting	M&E
Support for verbal autopsy in the DHS	CDC/TBD	$140,000	National	Use verbal autopsy to assess malaria-related mortality.	M&E
Support for supervision and quality Improvement Data monitoring	TBD	$70,000	National	Collects data on quality of care and effectiveness of training	M&E
Total M&E $410,000					

STAFFING AND MANAGEMENT					
PMI country staff	USAID/CDC	500,000		CDC and USAID PSC salaries and benefits, travel, equipment, and local support costs	Staffing
Total Staffing and Management $500,000					
Total		**$9,500,000**		**Total Commodities**	**47% (4,465,000)**

Table 3
Uganda – Year 1 Targets

Intervention	Needs for 100% Nationwide Coverage	Needs for 85% Nationwide Coverage (PMI 2010 target)	Needs for Year 1 PMI targets	Year 1 Contributions
IPT	1.3 million pregnant women x 2 treatments/woman = 2.6 million treatments	2.2 million doses	Target: 40% (baseline: 33%) 1.04 million doses needed	GFATM is providing 12 million does of SP
LLINs	5.2 million children <5; 1.3 million pregnant women **TOTAL** = 6.5 million LLINs*	5.5 million LLINs	Target: 50% of children under five (baseline: 15%) 1.8 million ITNs needed Target: 35% of pregnant women (baseline: 12%) 300,000 ITNs needed	GFATM – 1.79 M (bundled ITNs) JICA- 30,000 PMI- 300,000 **TOTAL** = 2.12 million LLINS or ITNs
ACTs – children < 5 ACTs – older children and adults **TOTAL**	5.2 million children x 2.3 episodes/year = 12 million treatments 2.8 million treatments (assumes 1 episode for a third of the adult population) 14.8 million treatments	12 million x 85% = 10.2 million treatments 2.8 million x 85% = 2.4 million treatments 12.6 million treatments	Target: 35% (Baseline: 0%) 4.2 million pediatric treatments 1.2 million treatments 5.4 million treatments	GFATM- 15.7 million treatments of Coartem to arrive in four shipments starting Feb. 2006. Adults are not the target population for the PMI
IRS	1 district of Kabale; 15 districts over 5 years^	13 districts	Target: Kabale district	PMI- Targets Kabale District beginning with the 200 most high risk villages which comprises 60% of households

* This assumes every pregnant women and child under five receives an ITN. Practically, one ITN will cover 2 or more children or adults.
^ IRS will be targeted only at the 15 epidemically prone districts in the highland areas of south west and eastern Uganda.

Assumptions and Estimated Year 1 Coverage Levels

PMI Targets: After three years of full implementation (i.e., by 30 September, 2011), the PMI will achieve the following targets in populations at risk of malaria in Uganda:

1. 85% of children under five will have slept under an ITN the previous night;
2. 85% of pregnant women will have slept under an ITN the previous night;
3. 85% of pregnant women will have received two or more doses of SP for IPT during their pregnancy;
4. 85% of houses targeted for indoor residual spraying will have been sprayed;
5. 85% of children under five with suspected malaria will have received treatment with an antimalarial drug in accordance with national malaria treatment policies within 24 hours of the onset of their symptoms.

Assumptions:
Population of Uganda (estimated): 24,000,000 persons
Pregnant women: 1.3 Million pregnant women
Children <5: 5.2 Million children under five

Average total number of malaria-like illnesses per year and cost per treatment with Coartem:
Children <5: 12,000,000/year ($0.90 per treatment)
Older children/adults: 2,788,500(assume average of $2.40 per treatment)

Cost of IPT with SP: $0.20 ($0.10 for each of the two treatments a woman will receive during her pregnancy)
Average household will require 2.5 ITNs to cover all children under five and pregnant women in the family
Cost of a long-lasting ITN = $7.50

Table 4
President's Malaria Initiative- Uganda
Year 1 (FY06) Estimated Budget breakdown by Intervention ($ 000)*

	ITNs	IRS	Treatment	IPT	Epidemics	Other^	Total
Commodities	**$3,305,000 (71%)**	**$500,000 (25%)**	**$660,000 (34%)**				**$4,465,000 (47%)**
Salaries	**$100,000 (2%)**	**$200,000 (10%)**	**$100,00 (5%)**	**$100,000 (18%)**			**$500,000 (7%)**
Services	**$500,000 (11%)**	**$950,000 (49%)**	**$750,000 (39%)**	**$325,000 (60%)**			**$2,225,000 (24%)**
Tech Assist	**$200,000 (4%)**	**$200,000 (10%)**	**$150,000 (8%)**	**$50,000 (9%)**		**100,000 (25%)**	**$700,000 (7%)**
Other^	**$560,000 (12%)**	**$100,000 (5%)**	**$270,000 (14%)**	**$70,000 (13%)**		**$310,000 (75%)**	**$1,310,000 (14%)**
Total[@]	**$4,665,000**	**$1,950,000**	**$1,930,000**	**$545,000**		**$410,000**	**$9,500,000**

*Percentages apply to columns
@ Totals in this table don't match totals in Table 2 due to attribution of PMI salaries

^Definition of Other:

ITNs: Includes security costs for distribution of ITNs in the instable northern districts, and M&E costs, specifically routine reporting costs, and monitoring supervision and quality. Printing for IEC is also included.

IRS: Includes support for strengthening of DSS sites and routine reporting costs.

Treatment: Includes support for DSS strengthening, routine reporting, verbal autopsy, and quality improvement monitoring. It also includes dissemination of outcome home-based management of fever with ACT pilot studies. Also, there are some security costs for the distribution of ACT in the Northern districts.

IPT: Includes routine reporting costs and quality improvement. It also includes printing costs for IEC materials.

Table 5
President's Malaria Initiative- Uganda
Global Fund Round 2 and 4 Malaria Grants

Activity	ITNs	IRS	Treatment	IPT	Epidemics	Total Disbursed
Round 2 Disbursed Funds	$0*	$0	$3,242,129	$0	N/A	$9,749,358.00
Round 4 Disbursed Funds	N/A	N/A	$28,399,704.00	N/A	N/A	$28,399,704.00

***** The GFATM is currently in the process of procuring 1.79 million ITNs.

Table 6
President's Malaria Initiative- Uganda
Private Sector Contribution by Intervention ($000)^

Company/Organization	ITNs	IRS	Treatment	IPT	Epidemics	Other
Kampala Pharmaceutical industries Limited			$1,210,000 (planned 2005)			
Independent net distributors	unknown					

^The private sector market is in its nascent stages in Uganda, and is mainly limited to the sale of Chinese bed nets by hawkers and the sale of antimalarial treatments in the informal markets. Little is known about the actual quantity and scope of these activities.

Table 7
President's Malaria Initiative- Uganda Year 1

Indicator/Activity/Survey	Frequency	Data Source	PMI Cost (who incurs cost)
DHS with "regular" sample size (10,400 women), i.e., to estimate $_5q_0$ for the 5 years before survey	2006	DHS	$0
Add verbal autopsy as follow-up to DHS	2006	DHS	$100,000 (Uganda)
Support to existing DSS to measure all-cause and malaria-specific mortality	2006		$100,000 (Uganda)
Study to estimate sensitivity and specificity of verbal autopsy's ability to identify malaria deaths	2006	Verbal autopsy	$40,000 (Uganda)
No of ITNs purchased, and distributed	Quarterly	Routine reports from Partners	$0 (Uganda)
National health facility survey in outpatient sick child clinic and antenatal clinic to evaluate malaria case management, ACT stocks, IPT use, and other malaria-related health worker functions	Quarterly	Surveys in ANC clinics, DSS and sick child clinics	$60,000 (core)
Collect HIS data and hospital data on inpatient child malaria and severe anemia deaths, hospital utilization, ITNs distributed (regular, LLTNs), ITNs retreated, and ACTs used for children	Quarterly	HIS/NMCP	$30,000 (core)
Data collection for "confounders" (rainfall, urbanization, wealth, etc)	2006	NMCP	$5000 (Core)
No. of health facilities offering laboratory diagnosis of malaria (microscopy or RDTs)	Quarterly	Reports from MOH, NGOs/FBOs, others	$0
No. of municipalities where IPT with SP has been implemented	Quarterly	NMCP reports/ partners	$0
No. of SP treatments administered	Quarterly	NMCP/MOH/Partners reports	$0
Supervision and quality improvement data monitoring	Quarterly	Supervisory visits to health facilities (Mechanism to be determined)	$70,000 (Uganda)
No. of municipalities with epidemic-prone areas that have a written epidemic response plan	Every 6 months	NMCP reports	$0
No. of IEC materials produced/disseminated (by intervention and type)	Quarterly	Routine reports from partners	$0
No. of training courses offered/persons trained on malaria microscopy, case management, management of severe malaria, IPT, etc.	Every 6 months	Routine reports from PMI-funded partners	$0
No. of meetings of ICCM	Quarterly	Malaria Task Force minutes	$0
Total Budgeted in Country Plan			**$310,000**
GRAND TOTAL			**$405,000**

***** The Uganda M&E plan also allocates $100,000 to cover reporting costs which is not represented here.