

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 Children’s 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.

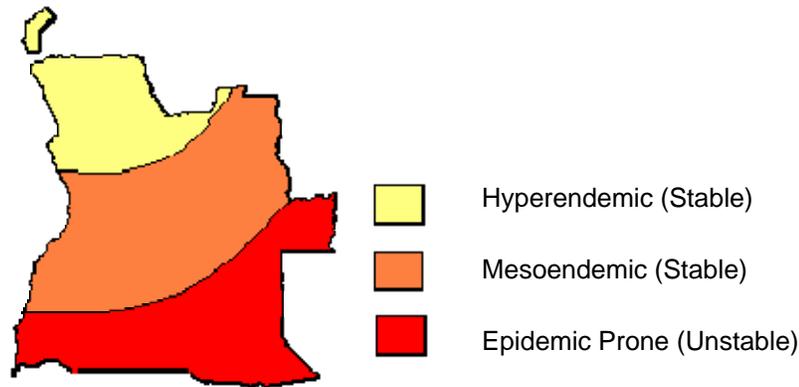
This document presents a detailed one-year implementation plan for the President's Malaria Initiative (PMI) in Angola. It is based on the PMI 5-Year Strategy and Plan and briefly reviews the current status of malaria control policies and interventions in Angola, identifies challenges and unmet needs 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 chloroquine. 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 go to 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

Table 2

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

Proposed Activity	Mechanism	Budget (<i>commodities</i>)	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.		467⁴			
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)	<i>Commodities represent 62% of total budget</i>		

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	3 million children under 5 x 3.5 episodes/year = 10.5 million treatments/year x 5 years = 52.5 million	10.5 million x 85% = 8.9 million treatments x 5 yrs = 44.5 million	10.5 million treatments	Target: 35% of children under 5 receive ACTs 10.5 million x 35% = 3.675 million treatments	GFATM – \$5.5 million USG (PMI) - \$900,000 JICA (Benguela Province) - \$400,000 TOTAL available for ACTs = \$6.8 million.
ACTs – older children and adults	12 million persons x 1.0 episodes/year x 33% of treatments covered = 4 million treatments/year x 5 years = 20 million	4 million x 85% = 3.4 million tx x 5 yrs. = 17 million	4 million treatments	4 million x 35% = 1.4 million treatments	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.
TOTAL	72.5 million treatments	= 61.5 million treatments			

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	<p>Target: <i>85% of targeted houses to be sprayed</i></p> <p>170,000 households to be sprayed</p>	<p>USG (PMI) – 200,000 households scheduled for spraying in provinces of Cunene and Huila</p> <p>Thus, 100% of Year 1 needs are met.</p>
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*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 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