

Written Testimony of Dr. Anne Peterson Assistant Administrator for Global Health

Malaria and TB in Africa

before the Committee on International Relations
Subcommittee on Africa
U.S. House of Representatives
September 14, 2004

Thank you, Chairman Royce and Congressman Payne, for convening this important hearing and for inviting me to testify. Thank you for spotlighting these two very deadly diseases, malaria and tuberculosis (TB). They affect the health and wealth of nations and individuals alike around the world, but especially in Africa. They are not only diseases of poverty but also diseases that cause poverty and are major constraints to economic development.

As a public health physician who has worked internationally and domestically for more than 20 years, I am very pleased at the growing interest and response to the challenge these epidemics pose. The international community has mobilized funding and action recently to develop and implement sustainable actions against both malaria and TB. I will first address the burden and suffering caused by malaria and outline what USAID is doing to save lives now and in the future and then I will do the same for TB.

Malaria

Worldwide, it is estimated that malaria kills more than one million people each year, making it the world's third deadliest infectious disease, after AIDS and tuberculosis. But malaria – spread by mosquitoes – is the most common of the three diseases, with more than 500 million persons experiencing acute malaria illness annually, compared with 5.3 million for AIDS and 8.8 million for TB. Malaria also accounts for a loss of approximately \$12 billion a year in gross domestic product in Africa alone.

Ninety percent of malaria deaths occur in Africa. Malaria's greatest impact is felt by very young children in Africa and pregnant women because of their reduced immunity to the malaria parasite. As many as a quarter of childhood deaths in endemic areas are attributable to malaria. But infection of women during pregnancy also takes a huge toll, both on the health of the mother as well as on the development of her unborn child. Placental infection is a significant contributor to low birthweight and subsequent neonatal death. In areas of unstable or epidemic malaria, all persons are at risk of serious illness and death. The drain on the physical and financial resources of households and communities of the disease, as well as the often ineffective attempts to respond to it, is well documented. With burgeoning AIDS epidemics in malarious countries, the risk of death due to malaria increases dramatically in a new vulnerable population.

Scope of USAID role in battling Malaria

The United States is and has been a leading force worldwide in the battle against malaria. USAID has directed and supported critical research that forms the backbone of some of the most effective interventions, including insecticide-treated mosquito nets (ITNs) and drugs. It is also studying ways to identify and deal with increasing drug resistance. Our technical and financial resources are being brought to bear around the world and leveraged to increase global commitments to reduce death. This year USAID committed just over \$80 million for malaria programs - a nearly four-fold increase since 1998 when USAID's Infectious Disease Initiative was launched. These new and expanded resources have allowed for a significant scaling-up of malaria activities from 5 countries to 20 now targeting national level impact and leading to increased coverage with interventions, better policies and visibly stronger programs.

USAID missions provide support to national malaria control programs in 20 countries in sub-Saharan Africa, where the burden of malaria deaths is the highest. This support covers a broad range of activities. These are determined by

local priorities, resource availability, and complementary activities by other donors and multinational institutions. The international efforts to fight malaria are largely coordinated by a global partnership that includes leaders from across Africa, African health institutions, the World Health Organization (WHO), UNICEF, World Bank, UNDP, multi-lateral agencies, the Centers for Disease Control and Prevention (CDC), international, national and local NGOs, and the private sector. USAID is a key partner in the Roll Back Malaria Partnership.

Integrated Flexible Program Approach Saves Most Lives

International experts have identified three priority interventions to reduce deaths and illness from malaria, each of which is backed by solid evidence of their effectiveness. These three interventions are consistent with USAID's priority areas for investment in malaria. They are:

- Provision of prompt and effective treatment with an antimalarial drug within 24 hours of onset of fever; and
- Prevention of malaria primarily through the use of insecticide-treated mosquito nets (ITNs) by young children and pregnant women;
- Provision of intermittent preventive treatment (IPT) for pregnant women as a part of the standard antenatal services—proper use of which can reduce overall child deaths by up to 30% and significantly reduce sickness in children and pregnant women.

Other parts of an integrated program include as appropriate epidemiology and based on mosquito characteristics are:

- Indoor Residual Spraying and use of insecticides
- Environmental Clean-up to remove mosquito breeding sites

The three interventions to reduce deaths and illness from malaria are internationally agreed upon, especially for Africa where the Abuja Targets are set at exceeding 60% coverage for each.

Improving Treatment with Effective Drugs

Historically, national malaria control programs have relied primarily on monotherapy with drugs, such as chloroquine, amodiaquine, or sulfadoxine-pyrimethamine (Fansidar®). These are the first-line treatment for Plasmodium falciparum infections, which are responsible for the vast majority of deaths due to malaria.

USAID Instrumental In Tracking Spread Of Resistance – Documenting Need For Better Drugs

Like many infectious diseases, even with extensive resources and attention, resistance to drugs can develop and the disease can escalate, as we are seeing in the development of multi-drug resistant TB. The spread and intensification of antimalarial drug resistance has risen greatly over the past 20 years. In Southeast Asia, strains of *P. falciparum* have developed resistance to multiple antimalarial agents and very few drugs remain effective. In South America, high levels of resistance to both chloroquine and Fansidar are already present throughout the Amazon Basin. In Africa south of the Sahara, where the impact of *P. falciparum* infections in pregnant women and children under five is greatest, chloroquine resistance is now widespread and there is increasing resistance to Fansidar in East and southern Africa.

Drug Resistant Strains Set Additional hurdles

USAID has been instrumental in trying to measure the speed and scope of developing antimalarial drug resistance. As drug resistance increases, the choice of first- and second-line drugs for malaria treatment has become much more difficult. Only a limited number of alternative drugs are available and there is little economic incentive for new drug discovery and development, given its high cost and the fact that malaria predominantly affects the world's poorest nations. Furthermore, in many malarious areas, a majority of the population does not have ready access to malaria treatment and those drugs that are available may be of substandard quality.

Investing in Increased Surveillance to Detect Epidemics

The ability to control infectious diseases requires effective comprehensive surveillance and response capacity. Effective surveillance is a prerequisite for:

- establishing local, national, regional, and global priorities; for planning, mobilizing, and allocating resources;
- for detecting epidemics in their early stages; and
- for monitoring and evaluating disease prevention and control programs.

The Agency's Disease Surveillance Program stresses the development of a strong local and national foundation for collecting, analyzing and using public health information. USAID is contributing to the development of this foundation through technical assistance and participation in regional and global initiatives.

USAID invests more than \$7 million each year to strengthen routine monitoring for emergence and spread of drug resistant malaria and reporting of diseases, enabling governments to quickly identify and respond to a malaria outbreak in a region.

Mainstreaming Rapid Diagnostics

New community-based approaches to diagnostics, including rapid diagnostics tests, can help overcome insufficient laboratory capacity or resource shortages to enhance from receiving disease surveillance information to response. USAID is working to develop diagnostics tests for both *falciparum* and *Vivax* infections, assisting in manufacturing and mainstreaming the use of rapid diagnostic kits around the world. In South East Asia, ACTs are routinely deployed with rapid diagnostic test kits, and in Africa, these tests are rapidly becoming integral in process of malaria diagnosis.

Identifying Drug Resistance Factors

Improper prescription of medications by pharmacists and self-prescribing of malaria medications contribute to malaria drug resistance. Poor quality and counterfeit malaria medications also contribute to drug resistance as well as ill health and death. In an effort to improve prescription practices and assure effective malaria medications reach consumers, USAID supported research studies in Africa, Asia and Latin America to determine the extent of improper malaria medication practices. They found that household treatment practices are all too often inadequate. In Cambodia, for instance, it was found that only 11 percent of people with symptoms of malaria received the nationally recommended first-line therapy. Moreover, 41 percent of people receiving treatment for malaria did not take the full course of the malaria medications. And 50 percent of people were self-prescribing with medications obtained in the private market.

Ensuring Drug Quality

USAID is strengthening national drug regulatory authorities. The aim is to improve the manufacturing of pharmaceuticals through good manufacturing practices, including drug quality control in national malaria programs. At 17 sentinel surveillance sites in six countries in Southeast Asia and Africa, antimalarial drugs are collected and tested for quality, using low technology screening methods. Sentinel surveillance sites and malarial control programs will be linked to create regional warning systems for poor quality drugs found in the market. A new collaborative effort is underway as part of the US-Japan common agenda to provide laboratory equipment to backup this surveillance effort. The United States Pharmacopeia Drug Quality and Information program (USP DQI) has also provided technical assistance in good manufacturing practices to selected producers of malaria drugs in Cambodia, China, Laos, and Vietnam.

Combination Therapy Recommended by WHO, Roll Back Malaria and USAID

We know from many infectious diseases that simultaneous use of multiple drugs instead of a single regimen slows development of resistance. The World Health Organization (WHO) and the Roll Back Malaria partnership (including USAID as one of the partners) now recommend that all countries experiencing resistance to their current first-line, single-drug therapy should change to a combination therapy, ideally including an artemisinin drug. The rationale for using combination therapy for malaria is similar to that for the treatment of tuberculosis, cancer, and HIV infections. When used alone, antimalarial drugs are more likely to select resistant parasites. The addition of a rapidly-acting and highly effective second drug, such as artemisinin or one of its derivatives, greatly reduces the probability of selecting parasites that are resistant to both drugs. This should prolong their useful therapeutic lifetimes. The WHO and Roll Back Malaria (RBM) recommend several artemisinin-based combination therapy (ACT) options: artemether/lumefantrine (Coartem®) or artesunate plus either amodiaquine, sulfadoxine-pyrimethamine, or mefloquine. USAID has supported the development and critical research for ACTs.

Over the past year the RBM partnership has developed a comprehensive "roadmap" on how best to ensure access to and effective use of ACTs. The roadmap highlights major milestones and potential barriers towards achieving full access to and appropriate use of ACTs - and more importantly, establishes a framework for prioritizing the actions of the RBM partnership. The most recent forecasts by RBM's Malaria Medicine and Supplies Services unit for 2005 project a need of between 125-150 million treatments of ACTs in Africa. This represents a nearly five-fold increase over 2003 world-wide ACT production levels and projects a need in excess of 300 million treatments annually by 2008.

USAID and our global partners have worked with endemic countries over the past several months to assess their treatment needs. We are working with pharmaceutical producers to gauge their interest, willingness, and ability to scale-up production of ACT as well as with financial institutions to determine their ability to mobilize sufficient support for the financing of ACTs. We are also seeking help from development and technical support agencies to ensure in-country support for effective application of these resources.

We have identified four potential "bottlenecks" or barriers that hinder access to and effective use of ACTs

- The capacity of agricultural producers to increase their yields of the plant *Artemisia annua*, the source of artemisinin
- The number and capacity of pharmaceutical industry to produce high quality ACTs
- The availability of resources to finance their procurement
- The availability of training and capacity to build support in country for widespread use.

The identification of these potential bottlenecks in turn has led to an agreement within the RBM partnership of the key actions needed for their resolution.

Product Availability: Overcoming Obstacles to Scaling Up ACT

USAID and its partners in Roll Back Malaria are currently negotiating with agricultural producers in Africa to encourage farmers to cultivate more artemisinin-based drugs. Funding from the Global Development Alliance is seeking production of enough of the active pharmaceutical ingredient to triple the drug availability in 2005 to a total 150 million doses.

Enhancing Production Quality and Capacity

Ensuring high quality and low cost ACTs requires an adequate pool of qualified ACT producers. Currently, there are only three pharmaceutical companies which have been "prequalified" by WHO as manufacturers of quality ACTs. USAID in 2004 and 2005 will continue to work with WHO to maximize the number of "prequalified" companies. USAID's support will target both upgrading the production capacity of pharmaceutical companies to meet WHO's standards for prequalification and will assist the WHO in expediting the evaluation process.

Financing ACTs

Financing ACTs poses substantial challenges. An additional \$30-\$60 million will be required to finance ACTs in 2004. This amounts to between \$200 and \$300 million annually by 2006. Towards meeting the forecasted production and 2007 financing "gap" USAID and RBM partnership is taking a two-pronged strategy: (1) to identify and ensure adequate financing over the next 18-24 months for country procurement of ACTs; and (2) to address the longer-term financing of ACTs. To meet the long-term demand, USAID has commissioned the Institute of Medicine to convene an expert panel to study options for funding ACTs from 2007 and beyond. This study has just been released and provides a clear and practical "roadmap" for the long-term financing of ACTs.

While recent public discussions of malaria treatment have largely focused on which drugs to use, the real challenge to providing effective treatment is in the "nuts and bolts" of delivering these drugs to those in need: enabling policies must be in place; logistic and management capabilities need to be upgraded; health workers need to be appropriately trained and supported; and community and household practices need to be knowledgeable and cognizant of appropriate services. USAID is working with partners in the public and private sector in all of these areas to ensure that effective and safe antimalarial drugs get to the patients who need them.

With these and other similar challenges in mind, USAID is bringing the full weight of its technical and programmatic resources in support of those countries that have made changes in their policies to ACTs to ensure that they have

adequate support in procurement and management of ACTs, training of health workers in diagnosis and use of ACTs for treatment of malaria, and mobilizing communities and households. USAID is also presently working with 25 Global Fund recipient countries in preparing detailed plans for the introduction of ACT over the next year.

Prevention of Malaria

For those individuals at risk from malaria in the highest risk areas of Africa (south of the Sahel and north of the Zambezi River), insecticide treated nets (ITNs) are the most practical and effective means for protecting the largest percentage of populations. Consistent use of an ITN has been shown to decrease severe malaria by 45%, reduce premature births by 42% and cut all-cause child mortality by 17%-63 %. In most settings, ITNs are unquestionably the most effective way that families can protect themselves from malaria.

ITNs can be deployed now in the desperately poor countries in Africa where malaria-related mortality is highest and can be put into the hands of parents who want to protect their children. As a consequence there is a strong international consensus that ITNs, particularly in these rural African settings with a high malaria burden, are the best primary prevention intervention. This is the reason USAID has constructed a prevention program that strongly emphasizes the use of ITNs.

Free Nets To Those Most In Need

USAID promotes targeting free or heavily subsidized ITNs to the most vulnerable (pregnant women and children under five years) and poorest populations - thus ensuring economics is not a barrier to net ownership. It is important that this targeted distribution of subsidized ITNs be combined with developing systems for ensuring long-term availability of ITNs for households and communities in Africa. Thus USAID supports expanding commercial market distribution, developing new technologies - especially in the area of long-lasting ITNs, and the growing of ITN production capacity to ensure adequate supplies of affordable and quality ITNs.

USAID has developed innovative models for the delivery of highly subsidized or free ITNs in collaboration with national malaria control programs in Ghana, Senegal and Zambia, as well as UNICEF, DfID, IFRC, NGOs and private sector partners such as ExxonMobil. With UNICEF this involves delivery of subsidized ITNs linked to routine immunization; with the Red Cross, ITNs are provided at no cost as part of targeted measles campaigns, and with ExxonMobil, the nets are delivered via a heavily subsidized voucher program through antenatal clinics.

Commercial Partnership In ITNs For Those Who Can Afford To Build Sustainability

USAID supported a partnership called NetMark which is working with 13 major commercial firms (representing over 80 percent of the global capacity to produce and distribute ITNs) to share the risks of developing ITN markets, to identify and reduce barriers to effective engagement of the commercial sector, and to create demand, thereby expanding availability of affordable ITNs. This effort, joined with that of the many Roll Back Malaria partners to scale-up ITN access and use throughout Africa, can reduce malaria deaths by one million annually. This successful cooperation with the commercial sector will serve as a model in other parts of the world and with other health related products.

New technologies now provide long-lasting nets and treatments that remove the necessity for retreatment. These technical developments, the product of committed commercial sector engagement with Roll Back Malaria partners, render ITNs even more affordable, more easily used, and more effective. ITNs also have an additional advantage. Studies show some protection of children who live nearby a net, as opposed to IRS where there is no added protection. USAID is investing in building the capacity of African distributors and their suppliers to distribute and promote ITNs on a national scale. Strategic investments are made to support companies through a matching fund scheme, while generic behavior change communication campaigns create demand on a national scale.

The World Health Organization has noted an important trend in increasing ITN use since 1998. According to the Africa Malaria Report 2003, about 15% of African children slept under mosquito nets and 2% under insecticide-treated nets. Although these rates are far from satisfactory, more recent country-specific surveys are recording higher rates, and this adoption of mosquito nets throughout Africa reflects a profound, if incipient, change in behavior and attitude. The main barriers to scale up with ITNs have been changing residents' attitudes and behavior, cost of the nets, and limited distribution systems. To overcome these barriers, USAID is supporting targeted distribution of free or highly subsidized ITNs to children under 5 and pregnant women, extensive social marketing efforts and is working closely with net manufacturers and distributors in many African countries. As a consequence of these efforts we are on a trajectory to provide more than three million ITNs in 2004. USAID anticipates that sales of ITNs in seven

target countries in 2005 will at least double and could reach seven million.

Prevention of Malaria in Pregnancy

Each year, more than 30 million African women become pregnant in malaria-endemic areas and are at risk for *Plasmodium falciparum* malaria infection during pregnancy. Most women live in areas with relatively stable malaria transmission, where the major impact of infection during pregnancy is related to anemia in the mother and the presence of parasites in the placenta. The resulting impairment of fetal nutrition contributing to low birth weight (LBW) is a leading cause of poor infant survival and development in Africa. HIV infection diminishes even more a pregnant woman's ability to control *P. falciparum* infections. The prevalence and intensity of malaria infection during pregnancy is higher in women who are HIV-infected. Women with HIV infection are more likely to have symptomatic infections and to have an increased risk for malaria-associated adverse birth outcomes.

WHO has recommended intermittent preventive treatment (IPT) using the antimalarial drug, sulfadoxine-pyrimethamine (SP), as the preferred approach to reduce the adverse consequences of malaria during pregnancy in areas with stable transmission. Since more than 70% of pregnant women in Africa attend antenatal clinics, IPT provides a highly effective base for programmes through use of safe and effective antimalarial drugs in treatment doses which can be linked to antenatal clinic visits. The potential of IPT to attain high levels of program coverage and its benefit in reducing maternal anemia and LBW makes it a preferred strategy in sub-Saharan Africa. In HIV-negative pregnant women, two doses of IPT provides adequate protection, but a minimum of three doses appears to be necessary in HIV positive women. Outside of areas with stable transmission in Africa and in other regions of the world, while malaria in pregnancy is a risk for both the mother and fetus, there is no evidence that IPT is worthwhile.

USAID played a key role in supporting the original studies in Africa that documented the efficacy of IPT in preventing the impact of malaria on both HIV positive and HIV negative pregnant women and their offspring. Many countries have already changed their malaria in pregnancy policies. Currently, through a coalition of partners, USAID is assisting ministries of health in about 10 African countries to implement IPT and distribute ITNs as part of a package of health interventions at the antenatal clinic level. Over the last year this technical assistance has contributed significantly to revision of outdated policies in Senegal, Ghana, Rwanda, and Zambia and to increased implementation of revised policies in DRC, Tanzania, and Kenya. Among women attending antenatal services in Tanzania, delivery of intermittent preventive therapy has increased from below 30 percent to over 60 percent.

DDT

Contrary to popular belief, USAID does not ban the use of DDT in its malaria control programs. DDT is only used for malaria control through the spraying of interior house walls - Indoor Residual Spraying, or (IRS). A number of other insecticides can also be used for IRS, and are in many countries when those alternative insecticides are safer and equally effective. IRS, when efficiently conducted in appropriate settings, is considered to be as efficacious as ITNs in controlling malaria.

From a purely technical point of view in terms of effective methods of addressing malaria, USAID and others have not seen IRS as the highest priority component of malaria programs for many reasons. In many cases, indoor residual spraying of DDT, or any other insecticide, is not practical, cost-effective and is very difficult to maintain. IRS requires major infrastructure, including a high level of organization, geographic coverage, application personnel and financial resources, regardless of what insecticide is used. To be effective, IRS needs 80 percent community compliance. It is also more expensive in rural or peri-urban than in urban areas.

In most countries in Africa where USAID provides support to malaria control programs, it has been judged more cost-effective and appropriate to put U.S. government funds into other malaria control activities than IRS. However, in countries in which circumstances support the use of IRS (including DDT), USAID has funded support to malaria control programs, for example, Eritrea, Zambia, Ethiopia and Madagascar.

USAID regulations (22 CFR 216) require an assessment of potential environmental impacts of supporting either the procurement or use of pesticides in any USAID assisted project, but if the evidence assembled in preparing such an environmental review indicates that DDT is the only effective alternative and it could be used safely (such as in interior wall spraying undertaken with WHO application protocols), then that option would be considered. The U.S. government is signatory to the Stockholm Convention on Persistent Organic Pollutants (the POPs treaty), which specifically allows an exemption for countries to use DDT for public health use in vector control programs, as long as WHO guidelines are followed and until a safer and equally effective alternative is found.

The United States voted in favor of this exemption. For example, this exemption was used to spray DDT and other insecticides in South Africa when certain mosquitoes developed resistance to the major alternative class of insecticides, the synthetic pyrethroids. Such situations are relatively rare, however, and demonstrate the value of the provisions of the POPs Treaty, which restrict and document use of DDT, but provide for its use when appropriate.

Expanding Global Network

Multilaterals, bilaterals...no one agency can do it all. Roll Back Malaria partners—leaders from across Africa, African health institutions, WHO, UNICEF, World Bank, bi-lateral agencies, international, national and local NGOs, and the private sector are engaged to in the fight against malaria.

Global Fund

Through the Global Fund to Fight AIDS, Tuberculosis, and Malaria, USAID and international partners have come together to combine financial, technical, management, and other expertise to reduce the public health impact of malaria. Over the past three years, the U.S. government has contributed \$623 million to the Global Fund, and has appropriated up to \$547 million this year. USAID is presently working with 25 Global Fund recipient countries to prepare detailed plans for the introduction of ACT over the next year.

We have some of the best malaria experts in the world who have been requested to be on technical review panels for the Global Fund for malaria and USAID provides in country technical assistance to assist on Global Fund proposals. Strategically, there is a rapidly evolving partnership between the Global Fund and USAID's malaria program. With USAID providing critical technical "know how" and the Global Fund providing the resources for the procurement of key commodities for the prevention and control of malaria there is a growing optimism that malaria endemic countries can soon begin turning the tide against malaria.

Private Sector

We have developed strong partnerships with many companies like Siam Dutch and A-Z in Tanzania, bringing in private dollar side by side to support public programs, leading to a 50 percent reduction in the cost of nets in the last three years. Netmark alone contributes about 55 cents to every dollar from USAID and this does not include the cost of textile (net) production. USAID is committed to reaching out beyond our traditional partners to find able and creative organizations, particularly those that are faith-based and community-based.

These actors are playing unique roles - roles only they can perform due to their expertise, positions and responsibilities. Research institutions and pharmaceutical companies can develop improved treatments and interventions to help protect us against malaria and its impacts. USAID works closely with the CDC, which, with USAID support, provides technical assistance to the World Health Organization and ministries of health in a variety of areas related to malaria diagnosis and treatment, prevention of malaria in pregnancy, use of insecticide-treated mosquito nets (ITNs), indoor residual spraying (IRS), and monitoring and evaluation of malaria programs. USAID also provides funding to NIH for work on a malaria vaccine.

Community- and faith-based organizations and other NGOs extend deeply into many of the most rural areas, reaching societies and cultures to ensure health care services and malaria treatments and interventions get to hard-to-reach populations.

National governments have especially important roles to play with specific, attainable steps to reducing the impacts of malaria - steps that only they can take. The international donor community, in partnership with developing country partners, can ensure that technical and financial resources are allocated where they will be most effective.

USAID is committed to working with these important partners to turn the tide against malaria and other infectious diseases.

And with so many new partners, the coordination of our efforts becomes even more critical. This is as true among the U.S. government agencies as it is among our international partners, including the new Global Fund. Coordination efforts must occur at two levels: at headquarters and in the countries we are assisting.

Research

USAID has also targeted the creation of a vaccine for malaria. A vaccine candidate against malaria is currently being tested in Kenya and Mali where the disease disables or kills hundreds of thousands of people each year.

After initial safety trials in the United States, clinical trials jointly supported by the Gates Foundation, the Malaria Vaccine Initiative began last year in Kenya with a safety study on some 50 adults.

The tests showed that the vaccine was safe in adults in Kenya, so this year testing was extended to about 50 children aged 1 to 4 years. The National Institute of Allergy and Infectious Diseases (NIAID), a component of the National Institutes of Health (NIH), is now working with USAID in testing the vaccine on some 40 adults in Mali to obtain safety data in a different epidemiological setting.

While ACTs are now effective, we know that won't last. Research on new and better drugs is absolutely critical and another important part of USAID's strategy. We are supporting Medicines for Malaria Venture (MMV) and WHO in new drug development.

Next Steps

There is much to do. If we are to meet our goal of halving Malaria by 2010, all of us, our esteemed partners from African governments, health institutions and our global partners must act together through the opportunity offered by the Global Fund and through the Roll Back Malaria partnership at all levels, most importantly in countries, to deliver the tools we have in hand, to develop new tools, and to fulfill the promise of coordinated and concerted support to countries.

The key to success will be to work together in improved and more effective ways. There is no silver bullet, no single intervention that is the answer to malaria. We must put in place a comprehensive approach to malaria that includes prevention, effective treatment and research for better tools. I am pleased to be here today with so many of our partners in this fight. As we consider the plight of those who face this deadly disease, we must act rapidly with the most effective methods of prevention and treatment. We must continue to respond to rising expectations for health care and find the best treatment available for all.

Tuberculosis (TB) Background

Tuberculosis (TB) is an ancient disease. While a cure has been available for over fifty years, TB still kills more than two million people every year. Each day, nearly 25,000 people develop active TB and 5,000 die from their disease. Approximately one-third of the world's population or two billion people are infected with TB. According to the 2004 WHO Global Report on TB, in 2002 there were an estimated 8.8 million new cases of TB, of which 3.9 million were sputum smear positive (Sputum smear positive TB cases affect the lungs, are the most infectious and therefore the most responsible for transmission of the disease (SS+) or "infectious" TB). In 2002, the global incidence rate (per capita) of TB was growing at a rate of 1.1% per year, and the number of cases was growing at 2.4%.

The global resurgence of TB has been fueled by increasing HIV/AIDS prevalence, inadequate public health systems, and emerging resistance to anti-TB drugs. Persistent poverty, crowded living conditions, and delayed diagnosis and treatment contribute to transmission of the disease.

TB threatens the poorest and most marginalized groups, disrupts the social fabric of society, and slows or undermines gains in economic development. An overwhelming 98% of the two million annual TB deaths - and 95% of the new TB cases each year - occur in developing countries. On average, TB causes three to four months of lost work time and lost earnings of 20 - 30 percent of household income. For families of persons who die from the disease, the impact of TB is even greater as about 15 years of income is lost due to premature death. In developing countries, the impact of TB on the family is even more important as TB generally afflicts the most economically active segment of the population between the ages of 15 and 54.

Treating TB through the Directly Observed Treatment, Short-Course (DOTS)

Much progress has been made since The Stop TB Partnership (of which USAID is a member) was launched in 1998. The Amsterdam Ministerial Conference on Tuberculosis and Sustainable Development held in March 2000 established global targets of 70% TB case detection and 85% treatment success rates in SS+ pulmonary TB cases to be achieved by the year 2005 in the 22 High Burden Countries (HBCs). These countries together account for 80% of the world's estimated cases, and served to catalyze governments and donors to address TB.

The Stop TB partners and countries have endorsed The Directly Observed Treatment, Short-Course strategy as the most effective strategy available for the treatment and control of TB. The DOTS Strategy has five components: political commitment; passive case detection among patients seeking care at health facilities and diagnosis using sputum smear microscopy; standardized short-course treatment with direct observation of therapy at least in the initial phase; assurance of an uninterrupted supply of high quality drugs.

The number of countries implementing DOTS increased from 112 in 1998 to 180 in 2002 and one high burden country (Peru) reduced TB incidence sufficiently to graduate from the list of 22 HBCs. The Partnership has grown to include over 200 donors, non-governmental organizations (NGOs) and other institutions, which demonstrates the strong global commitment to combat TB and to collaboration in that effort.

However, recent analysis of global TB trends and progress in DOTS implementation indicates that without an acceleration of DOTS expansion and program strengthening, these global targets will not be achieved for many years to come. Reported global DOTS coverage of 69% masks the reality that many people, even in areas where DOTS is reportedly available, lack true access to DOTS. While the overall treatment success in DOTS areas is 82% (2001 cohort) about 31% of the world's population resides in non-DOTS areas where treatment success averages just 40%. Globally, just 44% of estimated SS+ TB cases were detected in DOTS and non-DOTS programs combined in 2002. At the current rate of progress, the global target of 70% case detection will not be reached until 2013.

Tuberculosis in Africa

An estimated 26% (1.149 million cases) of the global TB burden is attributed to the Africa region, where nine of the 22 HBCs are located. The region is second behind South East Asia (33%) in terms of the burden of TB. Although the rate of increase in TB incidence has been slowing in the Africa region as a whole since the mid 1990s, Eastern and Southern African countries with a high HIV prevalence have reported increased rates of TB case notification of approximately 7% per year. HIV/AIDS is driving the TB epidemic in the countries of these two sub-regions of Africa where the HIV prevalence among patients with TB is approximately 24 to 79%.

Africa has made steady progress in implementing DOTS, although there are some serious constraints to progress. First and foremost, is lack of qualified staff - both at the central level of national TB programs, as well as at the peripheral-level facilities where DOTS services are provided. Second, infrastructure is inadequate and primary health care systems are weak, including a lack of transportation, poor communication, unreliable utility supplies, inadequate equipment and buildings. Third, laboratories are weak in many countries, including access to and quality of diagnostic services. Fourth, increasing TB-HIV co-infection is causing a rise in TB incidence rates, contributes to low cure rates, and poses a serious challenge as DOTS programs struggle to effectively manage the high volume of TB cases. Fifth, weak or wavering political commitment - both at the central and peripheral levels - continues to obstruct TB control in some countries. Sixth, monitoring and evaluation, including reporting and recording - remain weak in many countries. Finally, while decentralization has been underway for many years, in a number of countries, it continues to be a constraint to TB control due to a lack of capacity at the peripheral level.

USAID's Response

USAID currently supports programs to expand and strengthen DOTS in eleven African countries (USAID assists DOTS programs in Angola, Democratic Republic of Congo, Ethiopia, Ghana, Kenya, Nigeria, South Africa, Uganda, Malawi, Senegal, and Sudan) including six of the nine African countries listed among the 22 HBCs. Illustrative activities supported in these countries include training of health personnel, strengthening of laboratory services and provision of laboratory equipment, development of guidelines and training materials, and technical assistance to strengthen program planning, monitoring, evaluation, and supervision.

For example, in the Democratic Republic of Congo, USAID provides approximately \$1.2 million per year to support DOTS expansion and strengthening in three provinces, and strengthening of national and provincial-level human resource capacity and program management. Political commitment has been strengthened at the national level, as evidenced by the assignment of additional personnel to the central unit of the national TB program, a waiver of customs duties for a recent shipment of anti-TB drugs, and the signing of two decrees by the Ministry of Health assuring that anti-TB drugs would be free of charge. A national TB task force has been officially approved by the government, and the formation of provincial TB task forces is underway. USAID funding has also supported technical assistance, training, monitoring and supervision, and needed diagnostic equipment. The results of USAID's program are evident. DOTS coverage has reached 70%. The treatment success rate and the SS+ case detection rate both increased 10 percent following the initiation of USAID's program.

In South Africa, USAID's program initially focused on Eastern Cape province, and subsequently expanded to Mpumalanga, Northwest, KwaZulu-Natal and Limpopo provinces. The program focuses on increasing the availability of DOTS, improving the quality of DOTS services, increasing demand for DOTS through information, education and communication (IEC), and improving the TB program management at the national and provincial levels. Assistance is also provided to implement an electronic TB registry, prevent and control TB transmission in hospitals, support coordinated activities between the HIV/AIDS program and the TB program, and for studies to measure the rate of anti-TB drug resistance. Clear progress has been achieved. DOTS coverage has increased from 66% to 98%, and the SS+ case detection rate has reached 97% as compared to 71% prior to the initiation of USAID's program. While the treatment success rate improved from 60% (1999 cohort) to 65% (2001 cohort), this indicator remains far below the desired target of 85%. Efforts are underway to more fully engage NGOs and the communities in the provision of observed treatment and the tracing of patients who default.

USAID's Technical Leadership

In addition to our direct support for improving TB treatment programs at the country level, USAID also provides assistance to support DOTS programs in Africa through several global mechanisms and partners such as the STOP TB Partnership and the Global TB Drug Facility (GDF). USAID is actively involved in the STOP TB Partnership - the Agency is a member of the Partnership coordinating board and USAID technical personnel are members of all STOP TB technical working groups. USAID funding to the STOP TB partnership and WHO is assisting countries such as Kenya and Uganda to improve laboratory capacity, to test public-private mix DOTS models, and to assess the impact of IEC on TB case detection.

The Agency provides funding and technical support to the GDF, and we are the second largest donor to the GDF. Since it was launched in 2001, the GDF has raised and committed \$39 million for grants for anti-TB drugs. Of the 49 grants awarded by the GDF, 29 (59%) have been awarded to countries in Africa. Through the GDF and USAID's technical assistance programs countries and NGOs also receive technical assistance and training to strengthen the management of anti-TB drugs. They can also purchase anti-TB drugs through the GDF direct procurement mechanism, and therefore take advantage of the highly competitive pricing and good quality products that are available through the GDF.

In this respect, the GDF is a perfect partner to the GFATM. Using funding provided by Global Fund grants for TB, countries and organizations can purchase TB drugs through the GDF direct procurement service.

Battling Multi-Drug Resistance

USAID is also working to address the problem of multi-drug resistant TB (MDR TB). We support country surveys to measure the magnitude of TB drug resistance as part of the on-going WHO/IUATLD Global Project on Anti-TB Drug Resistance Surveillance. To date, USAID has supported surveys in 15 countries or sites (including South Africa), with studies in 16 more countries ongoing or planned (including Ethiopia and Democratic Republic of Congo). We also support an effective response to MDR TB by funding DOTS Plus for MDR TB pilot projects in a number of countries and settings, focusing on countries with the most serious MDR TB problem such as Russia (Orel and Ivanovo oblasts), and the Baltics (Latvia, Estonia, and Lithuania), and Kazakhstan. We provide funding to support the work of the STOP TB Green Light Committee (GLC). The GLC provides technical assistance and monitoring of DOTS Plus for MDR TB pilot projects. So far, the GLC has approved DOTS Plus pilot projects in 11 countries and another 14 applications are under review. DOTS plus projects that are approved by the GLC are eligible to purchase second-line anti-TB drugs at lower prices than on the open market. Finally, we support a network of supra-national reference laboratories that provide the necessary quality control for anti-TB drug susceptibility testing, and we are supporting training and operations research in hospital infection control to help reduce the risk of transmission of MDR TB in clinic or hospital settings.

USAID and Global Fund Support For Africa

USAID missions work closely with the Global Fund to Fight AIDS, TB and Malaria (GFATM) by leveraging mission funded programs with the substantial funding provided by the GFATM. Twenty-five African countries have been approved for 2-year TB grants totaling \$109,330,269 in four rounds of grants awarded by the GFATM. The total 5-year maximum for these grants is \$223,148,330. In addition, three countries - Rwanda, South Africa and Tanzania - have been approved for HIV/TB 2-year grants totaling \$81,869,831. The 5-year maximum for these grants is \$269,060,932. USAID missions participate in the Country Coordinating Mechanisms, assist with grant proposal writing, and help countries prepare implementation and monitoring and evaluation plans for these grants. Through USAID technical partners such as the TBCTA and others, USAID missions provide support for technical assistance, capacity building and monitoring and evaluation to help the grant-recipient countries to effectively implement and

manage GFATM grant-funded programs and activities.

In addition to the programs highlighted above, activities to strengthen TB-HIV/AIDS care are included in the programs of all 12 African countries that are the focus of the President's Emergency Plan. TB-HIV/AIDS services are a critical component of the basic care package of services provided to People Living with HIV/AIDS (PLWHA). Funding provided by the Emergency Plan will support: isoniazid preventive therapy for persons with HIV/AIDS who do not have active TB; improving the treatment of TB, including DOTS services, for PLWHA who have active TB disease; provision of HIV counseling and testing to persons with TB; and screening for TB, and referral of TB suspects, among persons attending HIV counseling and testing centers. Assistance is also being provided for the development of policies, guidelines, and training materials, and for the training of personnel to implement the aforementioned services. FY 2004 country operational plans have included an average of \$1 million for TB-HIV/AIDS services such as those described above.

Finally, USAID is working actively to prevent and address multi-drug resistant tuberculosis. USAID is currently or plans to support drug resistant surveys in a number of countries, including in South Africa, Ethiopia, and the Democratic Republic of the Congo. We are supporting operations research on improved DOTS plus programs including in South Africa. We provide funding to support the work of the STOP TB Green Light Committee (GLC). The GLC provides technical assistance and monitoring of DOTS Plus for multi-drug resistant TB pilot projects. We are supporting training and operations research in hospital infection control, since patients with MDR TB sometimes need hospitalization. To sum up, the best approach to preventing MDR TB is to make sure good DOTS programs are in place.