



REPORT TO CONGRESS

## **USAID Efforts to Prevent Mother-to-Child Transmission of HIV/AIDS**

An Overview of U.S. Agency for International  
Development Programs and Approaches







**On the Cover:**  
An HIV-positive Tanzanian mother holds a photo of herself and her two children, the youngest of whom was born with HIV. Cover photography courtesy of Andrew Petkun.

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Additional copies of this report may be obtained by writing to:



1101 Vermont Avenue, NW Suite 900  
Washington, DC 20005

(202) 842-2939

(202) 842-7646 (Fax)

e-mail at [tvt@tvtassociates.com](mailto:tvt@tvtassociates.com)

web site: [www.synergyaids.com](http://www.synergyaids.com)



## Executive Summary

One of the tragic consequences of the HIV/AIDS epidemic, especially in developing countries and most prominently in sub-Saharan Africa, is mother-to-child transmission (MTCT) of HIV. This can occur during pregnancy and delivery, or after birth through breastfeeding, and is estimated to have already resulted in the AIDS deaths of more than 4 million children worldwide.

Clearly, the best way to prevent MTCT is to prevent the initial transmission of HIV/AIDS to the mother. However, for women already infected with HIV, steps can be taken to reduce the likelihood of HIV transmission from mother to infant. The U.S. Agency for International Development's (USAID) strategy for preventing the transmission of HIV from mother to child is to support the following necessary and fundamental components of a comprehensive intervention:

- Improved antenatal services
- Voluntary and confidential counseling and testing services
- Short-course antiretroviral prophylaxis for HIV-infected pregnant women
- Counseling and support for safe infant feeding practices
- Strengthened reproductive health, family planning, and safe motherhood programs

The prevention of MTCT is more complex than any simple application of the above approaches. With the advent of antiretroviral (ARV) therapy options, new avenues must be considered. Although ARV drugs have proven effective in reducing the risk of HIV transmission in industrialized countries, introducing them in developing countries offers significant challenges, and requires that multiple, interrelated steps be completed. These steps include:

- Advocacy for the development of government policies on MTCT and meeting regulatory criteria for the use of ARV therapy;
- Needs assessments and upgrading of sites to assure that minimum standards of care can be met;
- Determination of the knowledge, attitudes and practices of health workers, as well as communities, with regard to MTCT;

- Development of guidelines for the use of ARV therapy and infant feeding;
- Development of communications strategies, health worker training, community mobilization, and monitoring and evaluation systems

MTCT prevention is a new field. Therefore, before embarking on the development of any large-scale MTCT programs, it is necessary to gain a better understanding of how the above steps can best be approached.

Since 1998, USAID has made real advances in determining the best methods to approach the complex problem of preventing MTCT in the developing world. The Agency has invested in operations research by establishing comprehensive MTCT pilot projects in Kenya and Zambia, and in so doing has partnered with African governments, the United Nations Children's Fund (UNICEF), the Joint United Nations Programme on HIV/AIDS (UNAIDS), African researchers, and other USAID-funded projects. These pilot projects are producing critically needed "best practices" for the prevention of MTCT, while teaching policymakers what pitfalls they must avoid. Advances from these and other projects include feasibility studies on breastfeeding counseling; assessments of costs, acceptability, and operational barriers of MTCT programs; a new computer model to analyze various components of MTCT programs; new program guidance for USAID Missions on how to approach MTCT; MTCT research and



service delivery support at antenatal care hospitals, such as the Chris Hani Baragwanath Hospital in South Africa; MTCT information sharing among donors and developing country partners; and much more.

The Zambia and Kenya pilot projects in particular have yielded important lessons about which approaches to MTCT prevention are most effective in developing world settings. For example, USAID and its partners have learned that community involvement is essential to pave the way for any MTCT project; that the stigma of HIV/AIDS has a negative impact on acceptance of MTCT prevention; and that determining the cultural relevance of breastfeeding is critical to providing sound breastfeeding advice to women with a limited range of viable choices. Guided by this knowledge, USAID now plans to expand high-quality, sustainable, and effective programs to prevent MTCT. This year, many USAID Missions will scale up MTCT prevention efforts. As the HIV/AIDS epidemic continues to escalate, increased USAID investments in prevention of MTCT will be critical in saving the lives of children made vulnerable to HIV/AIDS around the world.

### Acronyms

AED	Academy for Educational Development	FHI	Family Health International
ARV	antiretroviral	JSI	John Snow, Inc.
CBD	community-based distributor	LIFE	Leadership and Investment in Fighting an Epidemic
CBoH	Central Board of Health	MCH	maternal and child health
CDC	Centers for Disease Control and Prevention	MOHP	Ministry of Health and Population
CEDPA	Centre for Development and Population Activities	MTCT	mother-to-child transmission
CHBH	Chris Hani Baragwanath Hospital	NARESA	Network of AIDS Researchers in East and Southern Africa
DHMT	District Health Management Team	NFNC	National Food and Nutrition Council
DISH	Delivery of Improved Services for Health	NORAD	Norwegian Agency for Development Cooperation
FEMME Project	Foundations to Enhance Maternal Emergencies	PCS	Population Communication Services
		PSI	Population Services International
		SARA	Support for Analysis and Research in Africa
		STD	Sexually transmitted disease
		STI	Sexually transmitted infection
		TBA	traditional birth attendant
		UNAIDS	Joint United Nations Programme on HIV/AIDS
		UNICEF	United Nations Children's Fund
		USAID	United States Agency for International Development
		VCT	voluntary counseling and testing
		WHO	World Health Organization
		ZIHP	Zambia Integrated Health Program
		ZVITAMBO	Zimbabwe Vitamin A for Mothers and Babies



## Introduction

Worldwide, one in ten of those who become newly infected with HIV are children under age 15. The vast majority of these children contract HIV through their mothers via what is referred to as mother-to-child transmission (MTCT). Most of the infants in developing countries who acquire HIV infection through MTCT do so during pregnancy, during labor and delivery, or after birth through breastfeeding. The risk of infection is thought to be 5-10% during pregnancy; 10-20% during labor and delivery; and 10-20% during breastfeeding (as typically practiced).

Prevention of MTCT, also known as vertical or perinatal transmission, has recently emerged as a priority for the U.S. Agency for International Development (USAID) within the broader goals of HIV/AIDS prevention and of improving overall child health and survival. MTCT has a dramatically negative impact on the rates of child illness and death in the developing world. Failing to address the issue of MTCT would undermine successful child survival programs, many of which have been promoted and supported by USAID and other partners over the last two decades. Properly planned interventions to prevent MTCT and improve antenatal, delivery, and postpartum care will also improve overall health of mothers and children. Finally, emphasizing the importance and consequence of MTCT enhances overall HIV/AIDS prevention efforts.

MTCT prevention is a newly emerging field that presents complex challenges in the areas of logistics, funding, policy, and ethics. Therefore, much of USAID's initial work in this area has necessarily centered around identifying and assessing MTCT prevention interventions for their safety, affordability, feasibility, acceptability, and effectiveness. Interventions most appropriate for developing country settings include:

- Improving antenatal services
- Introducing voluntary, confidential counseling, and testing services
- Offering short-course antiretroviral prophylaxis for HIV-infected pregnant women

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Photo courtesy of Andrew Petkun



### Risk of Mother-to-Child HIV Transmission

Pregnancy	5 — 10%
Labor/Delivery	10 — 20%
Breastfeeding	10 — 20%

- Counseling and support for safe infant feeding practices
- Strengthening reproductive health, family planning, and safe motherhood programs

USAID will utilize the appropriate funding sources (i.e., Population, Maternal Health, HIV/AIDS) in its implementation of each of these components. Through 2000, USAID's initial activities in MTCT prevention were implemented in Africa in response to the critical level of the problem in that region. Interventions first tested and proven successful there will provide valuable lessons for other regions with emerging MTCT problems.

Through the Global AIDS and Tuberculosis Relief Act, which authorizes HIV/AIDS funding for the next two years, and the FY 2001 appropriations bill, USAID was directed to devote 8.3% of its funding to the prevention of MTCT. This target is expected to be reached before the end of FY 2002.

This report responds to a Congressional request for USAID to report on progress to date in achieving the goal of providing HIV-infected, pregnant women in developing countries with access to interventions to reduce MTCT. This report outlines the challenges to developing comprehensive MTCT prevention programs, important steps USAID has already taken in this field, and plans to accelerate and replicate these activities within Africa and in other regions.

### Magnitude of the Problem

Infants and children in developing countries are affected by HIV/AIDS in multiple ways.

Those most directly affected are children who acquire HIV/AIDS, usually through MTCT (i.e., infection while in the womb, during delivery, or through breastfeeding). These children face severe illness and a near certain early death in resource-poor settings where the likelihood of sophisticated and costly treatments is virtually nonexistent and the availability of basic medicines to treat opportunistic infections is likely to be limited. Disease progression in children who acquire

Photo courtesy of Andrew Petkun

HIV infection from their mothers is more rapid in developing countries than in the United States, probably because children in developing countries are exposed to early and multiple infections, have high rates of malnutrition and micronutrient deficiency, and lack access to adequate health services.

An alarming number of infants in developing countries have already contracted HIV/AIDS through MTCT. Since the beginning of the epidemic, it is estimated that more than 4 million children under age 15 have died of AIDS, 90% of whom lived in Africa. AIDS-related mortality is seriously undermining child survival gains made over the last few decades through health programs supported by USAID and other donors. For example, the Bureau of the Census estimates that in East and Southern Africa, the regions most affected by the AIDS epidemic, infant mortality rates are nearly 70% higher over what they might have been without AIDS. Almost all AIDS deaths in young children can be traced back to MTCT.

The best way to avoid MTCT is to prevent women of reproductive age from becoming HIV-infected. However, for the millions of women around the world who are already infected with HIV, and for those who will become infected in the future (despite primary prevention programs), many newly developed “core” interventions are now available to help protect their infants.

In recent years, industrialized countries such as the United States have seen MTCT rates fall below 2% of births to HIV-infected mothers. This is due to the introduction of voluntary (and confidential) HIV counseling and testing (VCT), administration of antiretroviral (ARV) drugs, elective Cesarean delivery, and the safe use of infant formula instead of breastfeeding. However, in developing countries, where these interventions have generally not been available and/or safe, and where breastfeeding is the norm, HIV-infected mothers continue to pass on HIV to their infants at rates of 25 to 35%.

The HIV/AIDS epidemic continues to have an especially devastating effect in sub-Saharan Africa. Between 1 and 2 million adults there died from AIDS in 1999 alone. There are now eight countries in the

region in which more than 15% of the adult population aged 15-49 is infected with HIV-1\* and seven countries in which at least one adult in five is HIV-infected. Most of these adults will die over the next 10 to 15 years.

The MTCT problem in sub-Saharan Africa is especially severe because: 1) HIV is well-established in the region; 2) women of reproductive age have comparatively high rates of HIV infection; 3) the total population of women of reproductive age is large; 4) birth rates are high; and 5) effective MTCT prevention interventions are lacking. For these reasons, USAID has elected to implement most of its MTCT prevention interventions in sub-Saharan Africa.

### **Designing and Evaluating MTCT Interventions**

The first major breakthrough in prevention of MTCT was seen in 1994, when U.S. and French studies of the antiretroviral drug Zidovudine demonstrated impressive efficacy in preventing MTCT when given to HIV-infected mothers. However, the drug was expensive and the protocols for delivering it were impractical for most of the developing world. In 1998, a shorter course of Zidovudine given in the last 4 weeks of pregnancy was proven effective in trials in Thailand. More recently, the drug Nevirapine, tested in Uganda, has proven effective, practical to administer, and even more affordable.

Other interventions to prevent MTCT that have proven effective in industrialized countries—such as provision of infant formula in lieu of breastfeeding and delivery of HIV-infected mothers by Cesarean section—are not always easily or safely implemented in the developing world.

Although the recent emergence of new methods to prevent MTCT is encouraging, the field nevertheless presents many new and complex challenges in resource-poor settings. These challenges include: the need for community education and preparation, supportive national policies, drug management systems, appropriate facilities and VCT centers, trained personnel, and policies, guidelines and materials on infant feeding.

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\* The predominant strain of HIV in Africa is HIV-1. All references to HIV in this paper refer to HIV-1.

A number of questions related to the safety, efficacy, cost, implementation and replicability of MTCT interventions need to be answered before embarking on large-scale projects, especially those involving administration of ARV drugs. In addition, the impact of these interventions on health and health services needs to be assessed.

USAID has supported a number of efforts to help answer these urgent questions and to develop effective, replicable models for MTCT prevention. Foremost among these efforts are two unique pilot sites in Zambia and Kenya where USAID has partnered with the United Nations Children's Fund (UNICEF), the Joint United Nations Programme on HIV/AIDS (UNAIDS), and African researchers. These pilot projects are producing critically needed best practices for the prevention of MTCT. USAID has invested in the assessment of cost, acceptability, and operational barriers, as well as in the ability of MTCT programs to reduce child mortality due to HIV/AIDS. Through this investment, USAID is creating new models for effective and sustainable MTCT projects.

USAID has already learned a number of critical lessons. These include: the importance of community involvement and preparation; the negative impact that the stigma of HIV/AIDS has on acceptance of MTCT prevention; and the importance of learning the cultural and social significance of breastfeeding as part of giving sound breastfeeding advice to women with a limited range of viable choices.

Other examples of USAID's leadership in preventing MTCT include:

- In the Ndola district of *Zambia*, USAID's Linkages project has successfully demonstrated the feasibility of providing community-based counseling regarding breastfeeding choices and HIV transmission. This project is now poised to be documented as a part of the UNAIDS "Best Practice" series and will be replicated in Malawi commencing in FY 2001.
- USAID's Bureau for Africa recently issued a document, "Prevention of Mother-to-Child Transmission in Africa: A Synthesis of the Issues and Framework for USAID Investments". This document, prepared by the Support for Analysis and Research in Africa

(SARA) Project of the Academy for Educational Development (AED), offers program guidance for USAID Missions in Africa. It is being repackaged to serve a wider audience of health program managers and policymakers in developing countries, in addition to other agencies and donors.

- The USAID-funded Futures Group International developed a new computer model to analyze the cost-effectiveness of different approaches to preventing MTCT; to measure adult and infant HIV infections averted; and to quantify requirements (e.g., trained personnel, supplies, funding) for implementing each strategy. The model considers ARV treatment strategies, infant feeding alternatives, and VCT. This model has been used in *Kenya* to assist the government in estimating the cost of scaling up MTCT services. It also has been used in the *Dominican Republic* and *Panama* to demonstrate the cost-effectiveness of MTCT interventions and to assist those governments in planning the delivery of those services.
- With USAID funding, the SARA and Linkages projects have reviewed and synthesized existing research data on MTCT and have drawn conclusions for program and policymakers. This has resulted in widely distributed publications on HIV and infant feeding, nutrition advice for programs assisting persons living with HIV/AIDS, and related topics.
- In *Brazil*, the USAID Mission, John Snow, Inc. (JSI), and UNICEF carried out the first study to estimate the number of children affected by HIV/AIDS. This study provided important input for national policy development related to the prevention of MTCT. JSI also assisted the Brazilian National AIDS Program to develop national and local strategies for preventing MTCT.
- Recognizing the importance of primary research on MTCT prevention, USAID/*South Africa* has funded staff support for MTCT research and service delivery in the Chris Hani Baragwanath Hospital (CHBH) Perinatal HIV Research Unit, located in Soweto Township. The unit has just announced that it will expand its MTCT services from one satellite clinic to 12. This hospital is the largest in the world, handling approximately 16,000 births each year. More than

20% of pregnant mothers seeking care at CHBH are HIV-infected, and 30% of the hospital's pediatric admissions are HIV-related.

- The Measure Project, implemented by the University of North Carolina, has provided technical assistance to United Nations agencies to ensure that indicators of progress in reducing MTCT are designed and used in comprehensive HIV/AIDS evaluations in developing countries.
- USAID has also played an important role in documenting and sharing emerging information and experience with the design and implementation of MTCT prevention efforts. For example, USAID supports researchers and program planners to present MTCT-related research at international meetings and consultations. USAID also supports the synthesis of findings of these meetings and distributes them widely in the United States and the developing world via electronic and more traditional channels.

### **USAID Strategic Plan for Implementing Specific Interventions**

The USAID strategy for preventing transmission of HIV from mother to child is to utilize its various funding sources (i.e., Population, Maternal Health, HIV/AIDS) to support the following necessary and fundamental components of a comprehensive intervention:

- Improve antenatal services
- Introduce voluntary, confidential counseling, and testing services
- Offer short-course antiretroviral prophylaxis for HIV-infected pregnant women
- Offer counseling and supporting for safe infant feeding practices
- Strengthen reproductive health, family planning, and safe motherhood programs

#### ***Improve antenatal services***

For pregnant women to access any or all core interventions to prevent MTCT, they must have access to good quality health services during the antenatal period, during labor and delivery, and after birth.

Improving antenatal services also has direct and indirect benefits for all mothers, irrespective of their HIV status.

Antenatal clinics are an excellent place to deliver HIV/AIDS prevention education. For pregnant women who do not know their HIV status, and for those who know they are HIV-negative, avoiding unsafe sexual behavior during pregnancy can prevent HIV and other sexually transmitted infections (STIs), as well as MTCT.

Examples of USAID support for improving antenatal services include:

- In *Kenya*, the Horizons Project of the Population Council has helped to prepare to initiate more direct MTCT prevention interventions by improving services for pregnant women and their infants. This has involved upgrading facilities, including the creation of counseling rooms, training more than 300 health workers, and providing HIV test kits.
- In *Zambia*, AED's Linkages project helped upgrade health facilities in the MTCT pilot area to improve health worker capacity to provide HIV counseling.
- Also in *Zambia*, the Horizons Project has hired additional counselors to launch MTCT services, funded the secretariat of the MTCT Working Group, and renovated space to administer the program.

#### ***Introduce voluntary, confidential counseling and testing (VCT) services***

VCT services are necessary for MTCT prevention in order to identify women (and families) who may benefit from MTCT interventions. In the absence of VCT services, most women in developing countries have no definitive way to know their HIV status until they themselves fall ill with identifiable symptoms of AIDS, or until they give birth to a baby who is diagnosed with, and dies from, HIV/AIDS. When women are identified as HIV-positive as a result of these services, they may choose not to have more children, and if they do decide to have more children, they may avail themselves of special efforts to avoid MTCT.

VCT services can be offered through stand-alone, community-based testing centers, or may be made available at health centers as part of maternal/child

health (MCH) or family planning programs. A number of USAID health programs in regions with high HIV prevalence rates are promoting and providing confidential counseling and testing services.

Examples of USAID support for VCT include:

- In *Uganda*, the Delivery of Improved Services for Health (DISH) project, administered by Johns Hopkins University, promotes confidential counseling and testing for all women of reproductive age and particularly pregnant women.
- In *Rwanda*, CARE International has trained four HIV/AIDS counselors in each of the 39 district hospitals and has monitored and supervised counselors. CARE International has helped the FEMME (Foundations to Enhance Maternal Emergencies) Project to improve antenatal/MCH services in Gitarama Prefecture. Additionally, Family Health International (FHI) is setting up VCT centers countrywide, with a goal of at least 10 new fully functional sites by the end of 2001.
- In *South Africa*, FHI's IMPACT project has funded HOPE Worldwide to support community outreach workers. These workers will: 1) encourage use of available VCT services, 2) foster links between the community and the VCT services and care provided by the Chris Hani Baragwanath Hospital (CHBH) Perinatal HIV Research Unit, and 3) promote community support to HIV-infected persons.
- In *Zambia*, USAID is collaborating with the World Health Organization (WHO) and the Norwegian Agency for Development Cooperation (NORAD) to develop 25 VCT sites that will test 60,000 people in 2001.
- In *Zimbabwe*, USAID has already disbursed more than US\$3 million for VCT services through Population Services International (PSI), which is marketing high-quality, franchised VCT centers across the country.

### ***Offer short-course antiretroviral prophylaxis for HIV-infected pregnant women***

It is important to differentiate between long-term ARV drug therapy used for treating adults (and children) suffering from AIDS and short-course ARV drugs used for preventing MTCT. ARV drugs used for long-term

treatment are, at present, expensive for most people with HIV/AIDS in developing countries, and are difficult to safely monitor for toxicity and drug resistance.

ARV drugs used for the prevention of MTCT, on the other hand, are much simpler to administer and are less costly and safer because they are given for a very short duration. The simplest regimen requires only a single dose of the drug Nevirapine for the mother at the onset of labor, and a single dose for the newborn infant.

Though administering ARV therapy for prevention of MTCT is relatively safe and simple, health care workers in developing countries are unfamiliar with the use and application of ARV drugs. USAID, through the Horizons project, has developed and field-tested training modules for health care workers in Kenya. These materials will serve as valuable references for new MTCT programs as they are started.

USAID is monitoring the demand for ARV for MTCT prevention (including the readiness of health services to deliver them), as well as ARV donations that have been promised by pharmaceutical companies. To date, some MTCT pilot programs have received drug donations. As services expand, it is likely that USAID will need to procure ARV drugs for prevention of MTCT.

### ***Offer counseling and support for safe infant feeding practices***

Because breastfeeding is one of the most important child survival and early childhood development interventions, the dilemma of preventing HIV transmission through breastfeeding has made safe infant feeding one of the most complex and controversial aspects of MTCT prevention. Breastfeeding has many health, nutrition, birth spacing, emotional, and psychosocial benefits. Infant feeding counseling, long recognized as important for all mothers, has become even more important with the emergence of HIV.

In environments where infant formula is safe, affordable, and culturally acceptable, and where HIV-infected women know their HIV status, avoidance of breastfeeding by HIV-infected mothers can prevent all postnatal MTCT. Unfortunately, in most developing

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**Photo courtesy of J. Mohr**

countries, the majority of women do not know their HIV status; therefore, the risks of significantly increased illness and death from unsafe infant formula feeding are enormous. The conditions for safe formula feeding—clean water, sterilized utensils, and a steady supply of formula for meeting all the infant's nutritional needs—are rarely present in most poor African communities. In addition, women who do not breastfeed are highly stigmatized in many cultures, as they are accused of being unfaithful to their husbands, and of being bad mothers.

In light of these conditions, USAID has consistently supported the UNICEF/UNAIDS/WHO policy of informed choice, which states that programs should provide HIV-positive women with information and support to empower them to make fully informed decisions about how to feed their babies. All mothers who choose to breastfeed, including HIV-positive mothers, should be encouraged and supported to breastfeed exclusively for about 6 months, meaning that no other liquids, milks, or solid foods are introduced during that period.

Examples of USAID support for safe infant feeding include:

- AED's SARA and Linkages projects have developed

## What About the Mother?

### Linking HIV/AIDS Care and Support Services to MTCT Interventions

Invariably, those who intervene to prevent MTCT are confronted with the care and support needs of HIV-infected mothers and their families. Linking MTCT interventions to psychosocial and medical services is a critical component of any successful intervention. However, meeting those needs in resource-poor settings is a monumental challenge. Providing long-term antiretroviral therapy to infected mothers may become feasible in the coming years as prices of drugs decline and the infrastructure to deliver them is strengthened. Even in the absence of antiretroviral drugs, however, much can be done to improve the quality and duration of life for HIV-infected mothers in developing countries through effective management of opportunistic infections, particularly tuberculosis.

Pilot projects have found that the psychosocial needs of HIV-infected mothers often surpass their medical needs because many of these women are still in the asymptomatic stage of HIV infection. HIV-positive mothers' more urgent needs include psychological support for themselves and family members, and increased knowledge of HIV/AIDS. Such support is best delivered through peer-led support groups called "post-test clubs" or "positive living groups." These groups receive support from a wide range of sources—from NGOs to charitable organizations to donors, including USAID. USAID is committed to taking a holistic approach to MTCT interventions, ensuring that the needs of families are addressed.



and tested a formative research protocol to adapt United Nations guidelines on HIV and infant feeding to specific developing country settings such as South Africa and Zambia.

- The ZVITAMBO (Zimbabwe Vitamin A for Mothers and Babies) Project in Zimbabwe is a large clinical trial being conducted in Harare with the Canadian International Development Agency and USAID. The purpose of this study is to assess the impact of a large dose of vitamin A provided to mothers and/or their newborn babies on infant mortality, new HIV infections among postnatal women, and HIV transmission through breastfeeding. The study has provided information about the cost associated with different feeding options, the availability of replacement feeds, the stigmatization of women who choose not to breastfeed, and caregivers' ability to properly feed their infants. In addition, ZVITAMBO is developing and evaluating an intervention to inform and counsel Zimbabwean women about HIV transmission through breastfeeding, with technical assistance from the SARA project.

### ***Strengthen reproductive health, family planning, and safe motherhood programs***

Avoiding unsafe obstetrical practices is also believed to help to reduce the risk of MTCT during delivery by reducing the infant's contact with the mother's HIV-infected blood and amniotic fluid. Improving delivery techniques in general continues to be important for child health, since infants whose mothers die as a result of complications related to pregnancy have a much greater chance of early death themselves.

Increased mortality caused by HIV/AIDS has not reduced the unmet need for family planning services. Instead, the rapid and extensive spread of HIV in Africa and the problem of MTCT have made the provision of family planning counseling and voluntary, safe, and effective methods of contraception even more critical. Making safe and effective contraception and high-quality reproductive health counseling available can help a woman practice safer sex; determine her future child-

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**Photo courtesy of Andrew Petkun**



bearing decisions; and potentially reduce the numbers of HIV-infected births. The Population Office of USAID has, for decades, supported programs that help prevent unwanted and unplanned pregnancies. These programs now contribute to the prevention of MTCT, especially when linked with HIV/AIDS services.

Using appropriate funding sources, specific MTCT-oriented reproductive health and family planning efforts funded by USAID include:

- In *South Africa*, Johns Hopkins University's Population Communication Services (PCS) Project trains hotline operators for the AIDS Help line. The curriculum includes education on MTCT and referral information to HIV testing and service delivery sites for pregnant women.
- JSI, in *Zambia*, has trained reproductive health trainers in the Zambia Integrated Health Program (ZIHP) to develop skills to minimize MTCT during delivery through the avoidance of unnecessary episiotomy and early, instrumental rupture of membranes. Plans are now underway to take this project to scale.
- In *Nepal, Ghana, and Nigeria*, the ENABLE Project, managed by the Centre for Development and Population Activities (CEDPA), is updating training materials for traditional birth attendants (TBAs) and community-based distributors (CBDs) regarding safe delivery and other MTCT prevention practices.
- In *Uganda*, the DISH project supports training of family planning providers to provide counseling about HIV to their clients and to discuss STIs, which facilitate HIV.

## Country Case Studies of MTCT Support in Africa

### KENYA

In Kenya, UNAIDS estimates that over 1 million women aged 15-49 and about 78,000 children aged 0-14 were living with HIV/AIDS in 1999. In that same year, between 27,000 and 41,000 child deaths occurred.

USAID currently supports MTCT prevention projects in three sites in Kenya: Kenyatta National Hospital, Karatina District Hospital, and Homa Bay District Hospital. This effort involves collaboration between the government of Kenya, the USAID-funded Horizons

Project, UNICEF, UNAIDS, WHO, African researchers and program managers, and the USAID Mission. USAID's input measures both the use-effectiveness and cost-effectiveness of a comprehensive package of MTCT interventions that are offered in MCH services (VCT, ARV drugs, and infant feeding counseling and formula).

This study will measure the impact of MTCT interventions on child survival and the impact of antenatal clinic-based VCT on incidence of HIV and the quality of life among women. Key African collaborators include the Network of AIDS Researchers in East and Southern Africa, the District Health Management Teams (DHMT) of Nyeri and Homa Bay, and the Kenyan Ministry of Health.

Closely monitoring this implementation in Kenya has illustrated the multiple, interrelated steps that must be completed before introducing specific interventions to reduce the risk of MTCT. These steps include advocacy and policy development; needs assessments of sites; studies of the knowledge, attitudes, and practices of workers and communities regarding HIV-infected women; development of treatment guidelines; communications strategies; upgrading of health clinics; MTCT-specific health worker training; provision of services; community mobilization; and monitoring and evaluation.

The Kenyan sites started screening women in June 2000. As of January 1, 2001, approximately 2,000 women had been counseled regarding MTCT and more than 1,000 had been tested. USAID's investment in Kenya totals over US\$3 million for this effort.

### ZAMBIA

In Zambia, at the end of 1999, UNAIDS estimated that 450,000 women and 40,000 children under the age of 15 were living with HIV/AIDS, and that one out of every five persons between the ages of 15-49 was infected with HIV. Zambia has the fourth highest adult prevalence rate in the world. Approximately 25,000 infants, representing over one-third of Zambian infants born to HIV-infected women, will become infected each year in the absence of effective MTCT prevention programs.

**The Ndola Demonstration Project:** USAID, through the Linkages and SARA projects, has supported MTCT prevention demonstration projects in Lubuto and surrounding communities in Ndola District in the Copperbelt Province. These projects form a critical part of a national effort to address MTCT and highlight the importance of both clinic and community interventions. The approach will soon be adapted or replicated in other parts of Zambia and sub-Saharan Africa.

The objective of the Ndola project is to integrate improved counseling on infant feeding practices; maternal nutrition; and HIV VCT into health and community services. Strategies include strengthening MTCT services (antenatal, labor and delivery, and postnatal care); improving counseling on maternal nutrition and infant feeding; introducing VCT; strengthening existing links between clinic and community to improve breastfeeding and HIV-related support for women and families; and documenting project experiences.

Ongoing assistance with monitoring and evaluating project results has been provided by the Horizons Project, which collects valuable baseline data on the capacity for community-based counseling and referral, knowledge and practice of VCT, infant feeding, and maternal nutrition.

To initiate the activities mentioned above, implementers have undertaken formative research; consensus building among partners; enhancement of the physical environment for counseling; comprehensive training and skills development; behavior change communication; referral services; and promotion of safer sexual behavior.

Project collaborators in Zambia include the Central Board of Health (CBOH), the National Food and Nutrition Commission (NFNC), the multisectoral District HIV/AIDS Task Force, the nongovernmental organization Hope Humana, and the ZIHP.

The Zambia projects are actively sharing their experience with counterparts in other parts of Africa and the world through presentations at international conferences, technical consultations, and numerous publications.

**Comprehensive MTCT services:** USAID is collaborating with The National AIDS/STD/TB and Leprosy Control Program and the Zambian Central Board of

Health to provide a comprehensive package of services to prevent MTCT. The goal is to offer a package of high-quality antenatal care and improved obstetric practices to prevent MTCT; VCT in the antenatal care setting; availability of antiretrovirals for reducing HIV transmission from mother to child; counseling on infant feeding; and breast milk substitutes for HIV-positive women who choose not to breastfeed. The Zambian HIV MTCT working group spearheads this effort. UNICEF also provides financial and technical support for the interventions.

Three sites started screening women in September 2000. As of January 2001, approximately 650 women had been counseled and more than 230 women had been tested. USAID's investment in Zambia totals over US\$3 million for these efforts.

## Collaboration with Other Partners

In addition to the examples of collaboration provided above, USAID's cooperating agencies provide technical assistance to, and collaborate with, a number of other U.S. government agencies and international partners. USAID contributes to partnerships in areas where USAID has a comparative advantage, such as with provision of VCT and technical assistance to training programs. Examples include:

- The SARA project, with USAID Africa Bureau funding, has assisted *WHO*, *UNICEF*, and *UNAIDS* with the development of global tools for measuring infant feeding in the context of MTCT research and monitoring programs.
- USAID participated in the October 2000 meeting at *WHO* where revised guidelines on the use of Nevirapine were crafted. At this meeting, donors agreed to expand the use of this drug from limited pilot and research settings to broader general use.
- USAID is collaborating with the *Centers for Disease Control and Prevention (CDC)* on the Leadership and Investment in Fighting an Epidemic (LIFE) initiative. This initiative was initiated in July 1999 to provide additional resources and opportunities to help sub-Saharan African countries prevent the further spread of AIDS, including MTCT prevention.
- The *Elizabeth Glaser Pediatric AIDS Foundation*, a

nonprofit organization dedicated to identifying, funding and conducting pediatric AIDS research, has embarked on a "Call to Action" project to implement interventions to prevent MTCT in developing countries. USAID staff participate in the review process for evaluating grants. USAID has provided support to Foundation personnel in Uganda.

### Future Plans

Other USAID-supported cooperating agencies are now reviewing their comparative advantages and potential roles in MTCT prevention and are developing strategies to identify country programs where MTCT prevention might be added. Lessons learned, documented, and disseminated from activities that USAID has already supported, particularly in Africa, will serve to guide and accelerate MTCT prevention activities in other regions where MTCT is a growing problem.

In *Africa*, many USAID Missions will scale up MTCT prevention efforts in 2001. For example, in *Rwanda*, the PRIME project has proposed to support

three MTCT centers in 2001. This would follow the direction of the South Africa model, which provides Nevirapine for mother and infant, and which promotes exclusive breastfeeding.

Taking advantage of the significant experience gained in comprehensive, USAID-funded MTCT prevention in the Ndola District of Zambia, USAID facilitated cross-border links between Zambia and Malawi to accelerate Malawi's MTCT prevention efforts. USAID inputs included technical assistance (by USAID contractors and Zambians), a study tour for Malawians to Zambia, and consultations in Malawi to determine the best course of action in MTCT prevention. Partnerships have been established within Malawi with the Ministry of Health and Population (MOHP)'s Nutrition Unit, UNICEF, and other development projects and organizations. Recently, at an MOHP workshop supported by USAID, national and district-level program managers and policy makers learned about the

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Photo courtesy of Andrew Petkun





integrated MTCT prevention approach. Subsequently, they planned to incorporate this model into AIDS programs in selected districts across Malawi.

In the *Europe and Eurasia* region, USAID staff will participate in a regional meeting in Minsk, *Belarus*, in early 2001 where MTCT prevention guidelines will be discussed. Interventions will be undertaken in close collaboration with UNICEF.

In *Asia*, MTCT efforts are gearing up to meet a fast-moving epidemic. In *India*, for example, USAID is the lead bilateral donor for HIV/AIDS activities. USAID funds the Avert project in Maharashtra State, one of the highest prevalence areas in the country. MTCT components of Avert include capacity building in prenatal clinics, working with Indian drug companies that are doing research in drug therapy, and working with NGOs that serve HIV-infected women. In *Cambodia*, the USAID Mission is currently exploring programming options and will tailor its assistance to meet the Cambodian government's strategy. That strategy includes developing a national MTCT policy and guidelines, establishing pilot programs, selecting and training program teams, carrying out field testing, and evaluating and expanding MTCT prevention models.

In *Latin America* and the *Caribbean*, USAID has assisted the *Dominican Republic* and *Panama* in assessing the cost-effectiveness of introducing services to prevent MTCT. In both cases, based on the findings of these assessments, both governments are moving forward with programs.

## Conclusion

Today, USAID's initial operations research is bearing fruit, which will better inform programs in safe and effective delivery of emerging MTCT prevention services. The results of these USAID investments are helping to expand high-quality, sustainable, and effective MTCT prevention programs in many countries. As the HIV/AIDS epidemic continues to escalate, increased USAID investments in prevention of MTCT will be even more critical in saving the lives of children made vulnerable to HIV/AIDS around the world.





**U.S. Agency for International Development**

1300 Pennsylvania Avenue, NW  
Washington, DC 20523-1817  
[www.usaid.gov](http://www.usaid.gov)