

# HIV Voluntary Counseling and Testing: An Essential Component in Preventing Mother-to-Child Transmission of HIV

The positive results from clinical trials of the anti-retroviral medications zidovudine and nevirapine created the possibility of offering an affordable and feasible intervention worldwide to reduce HIV transmission from an infected pregnant woman to her infant. Governmental and nongovernmental health services in many highly affected areas of Africa, Asia, Latin America, and Eastern Europe have responded by piloting and rapidly expanding programs for the prevention of mother-to-child HIV transmission (PMTCT).

Since their inception in 1999, programs have offered voluntary HIV counseling and testing (VCT) to more than 800,000 pregnant women around the world.<sup>1</sup> An important objective of VCT is to identify which pregnant women are HIV-positive so that they can receive a short course of antiretroviral drugs to prevent transmitting HIV to their infants. HIV counseling and testing also offer an opportunity to promote HIV prevention, encourage serostatus disclosure, and foster couple communication on HIV and PMTCT.

This research summary focuses on VCT in the antenatal care (ANC) setting, examining specifically service utilization by pregnant women, their perceptions of services, client outcomes as a result of undergoing HIV counseling and testing, and strategies for improving quality and coverage of VCT as a key component of PMTCT programs. The



LOUIS APICELLA/HORIZONS

data come from a four-year intervention study conducted by Horizons, the Network of AIDS Researchers in East and Southern Africa (NARESA) in Kenya, the MTCT Working Group in Zambia, and UNICEF.

The aim of the research was to examine the introduction of a package of PMTCT services within existing maternal and child health (MCH) programs in low-resource settings. To assess the feasibility, acceptability, and impact of these interventions and to explore operational issues, the research teams in both countries collected service statistics and conducted a cohort study, using pre-intervention comparison groups for reference. In Kenya, 1,300 women at Karatina District Hospital and 800 women at Homa Bay

District Hospital, as well as 1,002 women at the Chipata Clinic in Lusaka, Zambia, participated in the study. Chipata Clinic serves a densely populated, poor, peri-urban settlement in Lusaka, where service statistics show that one out of four antenatal clients is HIV-positive. At Homa Bay District Hospital, which serves a very poor area in western Kenya, HIV prevalence among antenatal clients is about 33 percent, one of the highest in Kenya. In contrast, less than 10 percent of pregnant women seen at the District Hospital in Karatina, a town in the relatively prosperous central highlands about two hours north of Nairobi, are HIV-positive.

Additional information for this summary comes from rapid assessments of PMTCT sites in 11 countries<sup>2</sup> carried out as part of a recent evaluation of United Nations-supported PMTCT pilot projects (Rutenberg et al. 2003).

### PMTCT Counseling and Testing Services

HIV counseling is routinely offered to all ANC clinic attendees at the study sites in order to maximize the opportunities to prevent mother-to-child HIV transmission. The VCT process aims to equip pregnant women with information and support to enable them to make decisions that will favor a healthy pregnancy and delivery, as well as to prevent sexual transmission of HIV. Each of the sites has allocated staff and space for education and counseling on sexual risk reduction and PMTCT. Designated health workers who have been trained to provide counseling at the sites include staff working in MCH clinics (e.g., antenatal care, family planning, and pediatric services) and in labor, maternity, and pediatric hospital wards.

Education and counseling activities at the study sites include:

- Clinic-based education sessions on HIV prevention and PMTCT provided to groups of women waiting for services.

Horizons conducts global operations research to improve HIV/AIDS prevention, care, and support programs. Horizons is implemented by the Population Council in partnership with the International Center for Research on Women (ICRW), the Program for Appropriate Technology in Health (PATH), the International HIV/AIDS Alliance, Tulane University, Family Health International, and Johns Hopkins University.

- Individual pre-test counseling that specifically focuses on providing information about the HIV test and its implications for the woman and her family, and on clearing up myths and misinformation. Should a woman opt to be tested, HIV testing can be done the same day and results given during an individual post-test counseling session, usually scheduled for a different day.
- Individual post-test counseling that focuses on both cognitive and emotional understanding of the results helps the client cope with immediate reactions and addresses disclosure of HIV test results to partners and others. Ongoing risk reduction for both HIV-negative and -positive women is also addressed.

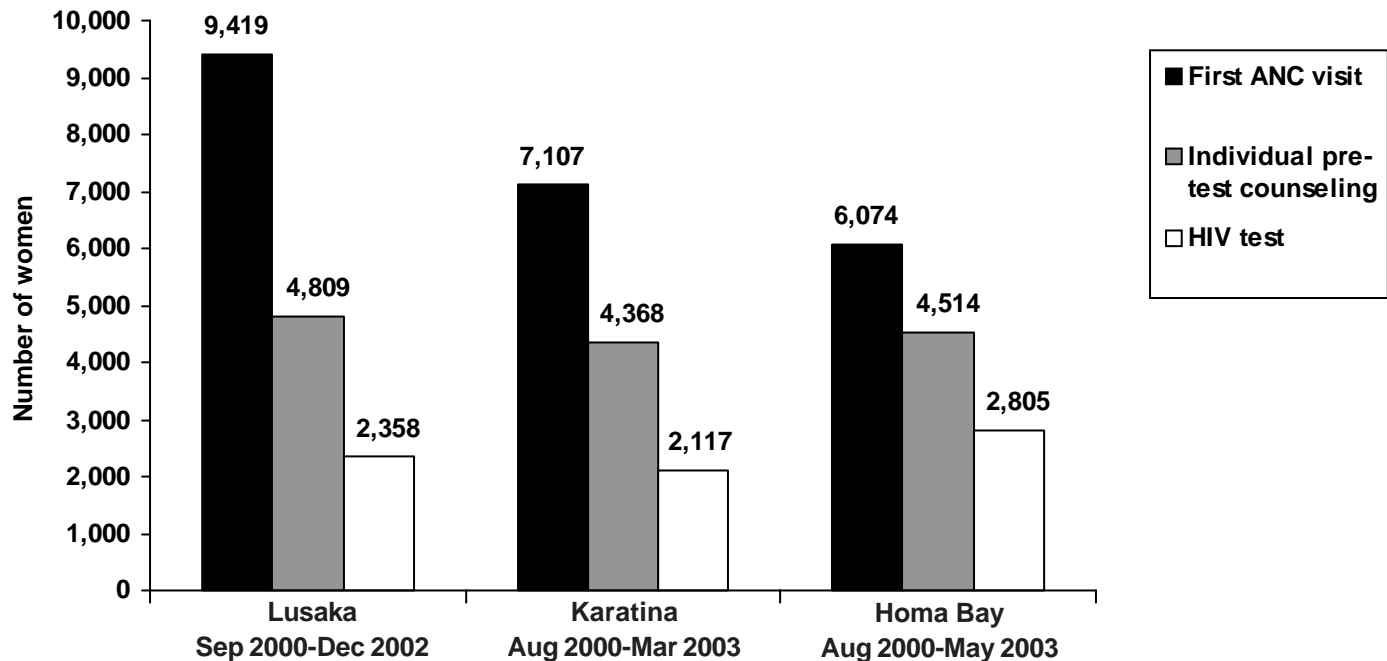
Women who receive an HIV-positive test result are helped to examine and absorb the wider implications of the results, including social and economic aspects of their lives and discussion of PMTCT options. The aim is to enable HIV-positive mothers to decide how to reduce the chances of infecting their infants and to examine options to meet future care and support needs. Women who receive an HIV-negative test result receive counseling to help them develop individualized risk-reduction strategies and to reinforce the benefits of breastfeeding. Further counseling is provided during subsequent ANC and postnatal visits to support adherence to intentions discussed during post-test counseling.

### Key Findings

#### Coverage of VCT within PMTCT programs is increasing.

As shown in Figure 1, more than 22,000 women sought antenatal care as new clients at the three sites in Kenya and Zambia where the cohort study was implemented during the approximately 27-month-long study period. Slightly more than

**Figure 1 Service utilization by site**



Source: Service statistics

13,000 women (61 percent) received individual pre-test HIV counseling, where women had a chance to learn more about the advantages and disadvantages of HIV testing and ask questions in a confidential setting. Overall, 7,280 women, or less than one-third, of new antenatal care clients went on to have an HIV test.

Broad averages mask significant differences in the coverage of PMTCT counseling across the 11 countries involved in the evaluation of UN-supported PMTCT pilot projects. The percent of women who come to clinics for antenatal care and receive individual HIV pre-test counseling ranges from less than 25 percent in Zambia (across the six pilot sites) to more than 90 percent in Burundi and Rwanda. An examination of the time trend in service statistics since the introduction of pilot programs shows that for many countries there has been a significant increase in the proportion of women who are offered pre-test counseling. This was the case in such countries as India, Kenya, and Uganda, where, by the end of the evaluation period, antenatal clinics were counseling more than 90 percent of clients.

**Client use of services declines substantially during the VCT process.**

Uptake of HIV counseling services is negatively affected by staff shortages and the organization of service delivery, which influences both the supply and demand for HIV counseling. Probably the single most important hurdle to providing pre-test counseling is a shortage of staff. Good counseling takes time, which is in short supply at many busy clinics where workers already provide antenatal, well-child, and family planning services. At some sites, lack of privacy, long waits, or rules that require clients to return another day for counseling further discourage women from being counseled. As demonstrated by the sites that have made pre-test counseling routine, adaptations to the staffing and organization of service delivery can achieve high levels of coverage. Successful strategies have included hiring additional medical staff, utilizing professional or lay counselors, reassigning some MCH staff to become dedicated counselors, and reorganizing staff work hours.



MELISSA MAY/POPULATION COUNCIL

The percentage of women who accept an HIV test after counseling ranges between 64 and 83 percent in the 11 countries with UN-supported pilot sites. The quality of counseling is undoubtedly one key factor motivating women to take the HIV test. Another variable is whether the blood drawn for the HIV test is part of the collection of blood drawn for syphilis and other routine antenatal tests or whether a second blood draw, for example, a finger prick, is required for the HIV test.

Many programs in the evaluation used a testing algorithm that required women to come back on another day to receive their results. Findings show that women do not receive their results for a variety of reasons: results may not be ready when women return, women change their minds or were never sure about the benefit of taking the test and thus do not return for results, women do not return for additional antenatal care visits, and women's partners are opposed to testing. Programs do not routinely report the proportion of women who collect their test results, but the operations research studies in Kenya and Zambia suggest that, on average, 20 to 50 percent of women do not get their results, though there is large variation depending on the setting. For example, in a large urban health center in Lusaka, Zambia, which used rapid tests but often

did not have results available the same day as the test, only 37 percent of women collected their test results; by contrast, at a rural clinic in Zambia, where the counselors offered antenatal care through outreach services at health posts and performed rapid HIV tests that were completed as part of their one-day visit, almost all clients received their results.

### **Pregnant women value information received through HIV counseling and testing.**

Interviews with clients reveal that overall, HIV counseling and testing during antenatal care provide information to clients that is tailored to their concerns and context about their own risk, the health of their partner and children, and their relationship with their partner. Although sometimes the information is confusing or incomplete, in most cases women found the discussions to be empowering because they learn they are not helpless. Many women at PMTCT sites in Zambia felt, as these clients did, that the information was useful and positive:

*"... I got information I did not know."*

*"I liked the advice on whether I should be tested or not."*

*"I liked the message about MTCT to avoid infecting my baby."*

Another advantage noted by respondents was that women no longer have to fearfully guess about their status but can instead choose to have an HIV test. Women pointed out that a negative result is an enormous relief and that a positive result is delivered in the context of services to help them have a healthy baby as well as information about living positively with HIV. As one woman said:

*"I now know even if I was HIV-positive I could still live a normal life unlike when I only knew HIV is death."*

**Information and counseling promote couple communication about HIV and PMTCT.**

In Lusaka, pregnant women hear about and discuss HIV issues, including PMTCT, through various mechanisms, including a group talk for clients waiting for ANC services, and during pre- and post-test counseling. Findings from this site indicate that women who have gone through the education, counseling, and testing process as part of the PMTCT program are increasingly broaching sensitive HIV-related topics with their partner. As shown in Figure 2, the proportion of women who discussed sexually transmitted infections, PMTCT, and VCT rose significantly following exposure to the PMTCT program ( $p < .05$ ), with the greatest increases seen in discussion of PMTCT and VCT.

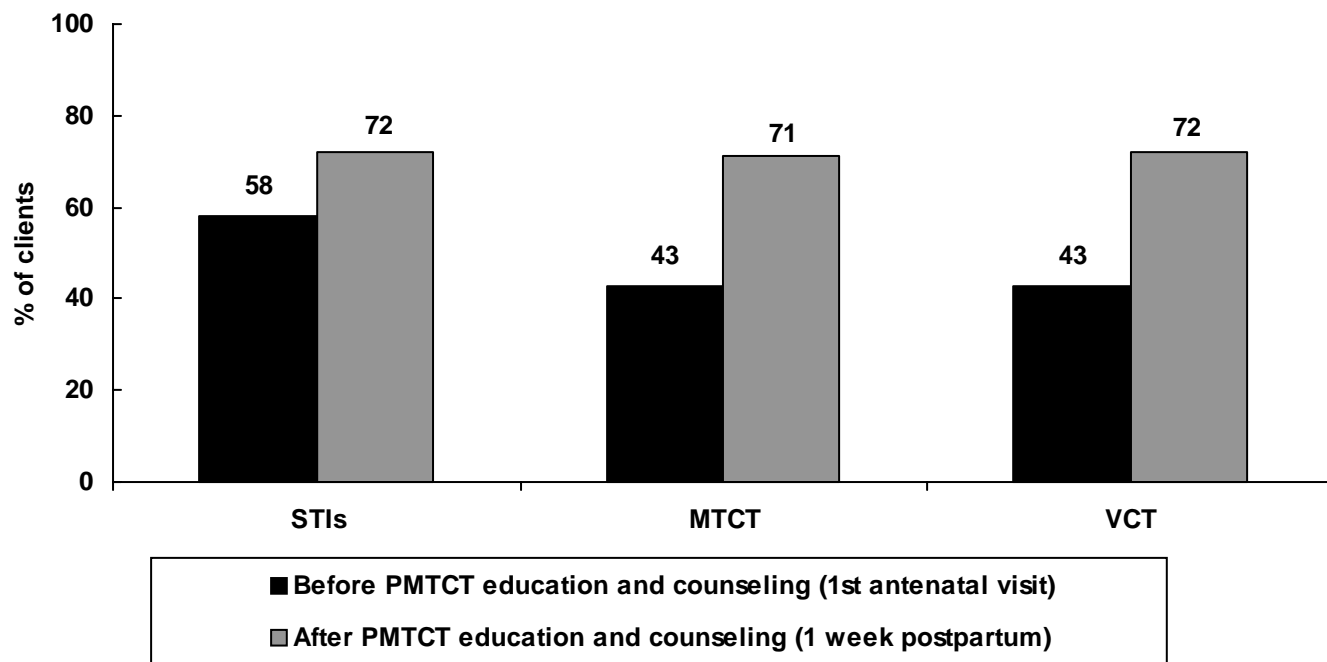
**Serostatus disclosure is high, although HIV-positive women are significantly less likely to disclose than HIV-negative women.**

Discussing the HIV testing experience and sharing results with a partner is a key step to

eliciting support and involvement. More than 70 percent of respondents in Lusaka shared their test result with their partner (this was measured between two weeks and five months after the HIV test). Data from Kenya show similar results. After being counseled and tested as part of the PMTCT program, more than half of women (58 percent in Karatina and 64 percent in Homa Bay) shared their HIV result with their partner. Overall, 81 percent, 74 percent, and 69 percent of women in Lusaka, Karatina, and Homa Bay, respectively, shared their HIV test result with someone (partner, family member, friend, etc.). As seen in Table 1, disclosure varied with HIV status, with HIV-positive women significantly less likely to disclose to anyone than HIV-negative women ( $p < .05$ ).

The proportion of women disclosing their HIV status to partners and others within these cohorts is notably higher than the figures described in the literature on PMTCT in sub-Saharan Africa that draws heavily on studies of clinical trials. It may be that women in routine PMTCT services receive more support for disclosure during their counseling sessions than women participating in

**Figure 2 Percent of women (n = 419) discussing HIV topics with their partners before and after participation in the Lusaka PMTCT program**



Source: Cohort interviews



**Table 1 Percent disclosing HIV test result**

	Percent disclosing to:		Percent disclosing to anyone by HIV status of respondent:	
	Partner	Anyone	HIV+	HIV-
Lusaka	72	81	49	86
Karatina	58	74	53	70
Homa Bay	64	69	35	83

Source: Cohort interviews

trials focusing on the efficacy of preventive antiretroviral therapies.

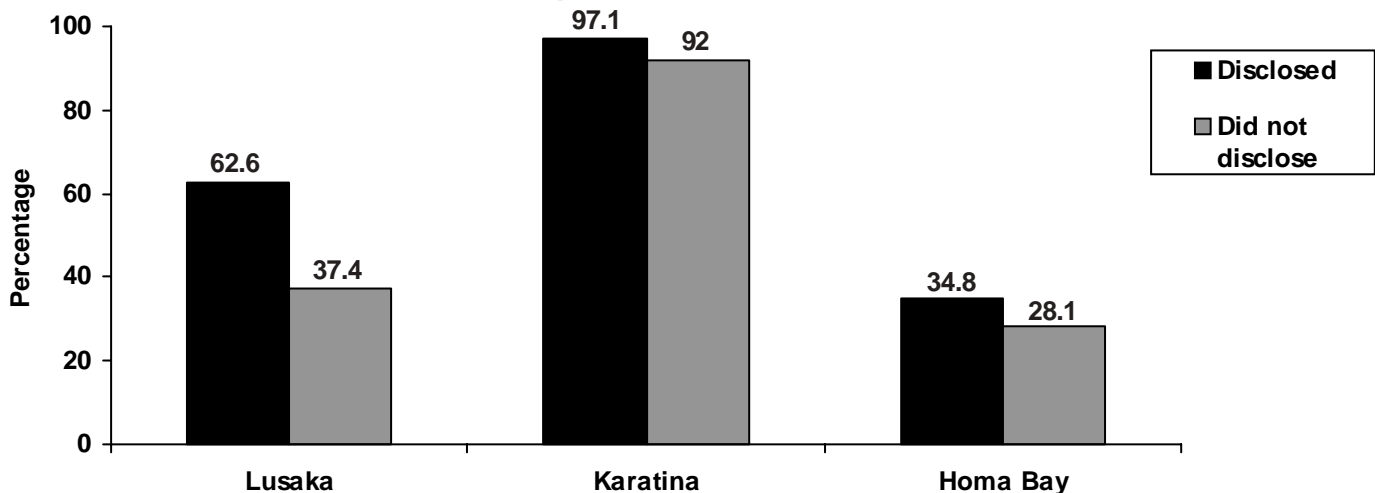
**The study found both positive and negative outcomes of serostatus disclosure to partners.**

Disclosure of an HIV test result to a partner can be an important step for HIV-positive women in accessing care and support, because women can

then more openly seek medical care and support services. HIV-negative women can also benefit by disclosing to partners that they've had an HIV test and sharing the topics discussed during counseling, since this can be an entry point to enlisting support for behavioral changes that reduce infection risk. Disclosure can also have a positive effect on personal relationships, for both HIV-positive and HIV-negative women. For example, as seen in Figure 3, in the two to three months after HIV testing during pregnancy, women in Lusaka who disclosed to their partner were significantly more likely than women who did not disclose to report that they had experienced a strengthening in their relationship in the previous three months ( $p < .05$ ). Although the proportion of HIV-negative women who disclosed and reported a strengthened relationship was greater than the figure for HIV-positive women, this difference was not statistically significant.

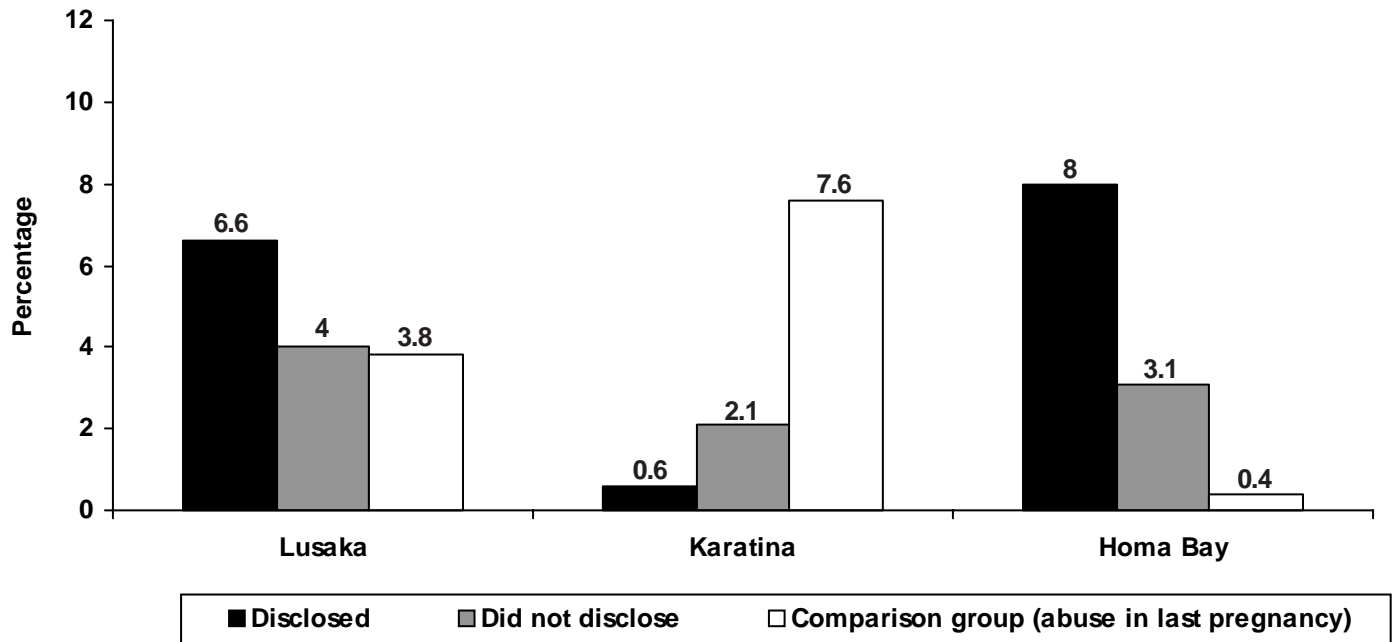
Yet the benefits that women may receive from sharing HIV test results with their partners need to be balanced against the potential risks that an individual woman may face when she discloses that she had an HIV test and what her HIV status is. Two negative outcomes of disclosure were investigated among the Zambian and

**Figure 3 Percentage of women experiencing stronger relationship in last 3 months, by whether disclosure had been made to partner**



Source: Cohort interviews with women one week postpartum

**Figure 4 Percentage of women experiencing physical abuse in last 3 months, by whether disclosure had been made to partner**



Source: Interviews with women one week postpartum

Kenyan cohorts: physical abuse and the break-up of the marriage.

Figure 4 shows the proportion of women at one week postpartum who had disclosed their HIV status to their partners and experienced physical abuse in the last three months, compared to the proportion of women who did not disclose their HIV status but had also experienced physical abuse. Both groups are compared to a control group of postpartum women who reported physical abuse in their last pregnancy, which served as a proxy measure for the underlying levels of physical abuse in pregnancy across the three sites. The findings are not consistent across the three sites. There is no statistically significant effect of disclosure on physical abuse in Lusaka. Study participants at the Karatina site are substantially less likely than the comparison group to have experienced physical violence in the preceding three months, regardless of partner disclosure. In contrast, in Homa Bay, women who disclosed their serostatus were more likely to experience physical abuse in the preceding three months, compared to women who did not disclose their HIV status and to the baseline

group. The differences in proportions found in Karatina and Homa Bay are statistically significant ( $p < .05$ ).

During the three months preceding the interview, marriage break-up occurred in less than 5 percent of marriages for women in the study across the three sites. Women who did not disclose their serostatus were significantly more likely to have experienced a break-up of their marriage in the last three months at all three sites. Without further study, it is impossible to determine why marriages among women who did not disclose their HIV status broke up.

### Program Recommendations


Increasing utilization of VCT as part of antenatal care requires addressing both obstacles to service delivery and attention to the demand for services. This means expanding tested strategies, such as group pre-test counseling and using lay counselors to supplement MCH staff, and community and client education, as well as trying out new approaches.

Clinics with sufficient staff can offer individual pre-test counseling, but most sites lack counselors and face severe time constraints. A good alternative may be counseling in small groups, which facilitates the dissemination of standardized messages. It also allows women who are too shy to raise questions to learn from the questions of other women and to understand that their peers have similar concerns. Groups can also introduce opportunities for peer counseling, for example, by mothers to mothers-to-be. However, clinics must also give clients the chance to ask questions privately after a group session.

In PMTCT settings, MCH staff should carry out rapid testing in the antenatal clinic and give women their results the same day, unless they opt to wait until another visit to receive their results.

Programs should devote most of their VCT resources and time to post-test counseling. PMTCT programs need to bolster their efforts to provide supportive post-test counseling after a woman receives her results, utilizing not only PMTCT counselors in the clinic but also peer counselors in the community. Ongoing post-test counseling should help women disclose safely to partners and others. This means that training for counselors needs to acknowledge the role violence may play in the lives of some women and therefore equip counselors to facilitate but not force disclosure. Post-test counseling also needs to reinforce infant feeding counseling, help address prevention of unwanted pregnancy among HIV-infected women through family planning, and provide an entry point for care and support.

Care and support organizations have used a number of strategies for follow-up counseling and support, including facilitating support groups and using peer and lay counselors to provide ongoing counseling at the PMTCT site, at community settings, or in the home. PMTCT programs

should establish links with existing care and support organizations and test promising strategies to tap into these resources for the benefit of their clients. 

<sup>1</sup> These figures reflect the effort of the programs supported by the United Nations agencies and the Elizabeth Glaser Pediatric AIDS Foundation, for which data have been collated and disseminated.

<sup>2</sup> The 11 countries are Botswana, Burundi, Honduras, India, Ivory Coast, Kenya, Rwanda, Tanzania, Uganda, Zambia, and Zimbabwe.

## References

Rutenberg, N. et al. 2003. *Evaluation of United Nations-supported pilot projects for the prevention of mother-to-child transmission of HIV*. New York: UNICEF and Population Council. <http://www.popcouncil.org/pdfs/horizons/pmtctunicefevalovr vw.pdf>

December 2003

---

*Study investigators include Margaret Siwale and Chipepo Kankasa of the MTCT Working Group in Zambia; Ruth Nduati, Dorothy Mbori Ngacha, and Jennifer Oyieke of NARESA in Kenya; Naomi Rutenberg and Scott Geibel of Horizons/Population Council; and Sam Kalibala of the International AIDS Vaccine Initiative (formerly of Horizons).*

Suggested citation: Rutenberg, N. et al. 2003. "HIV Voluntary Counseling and Testing: An Essential Component in Preventing Mother-to-Child Transmission of HIV." *Horizons Research Summary*. Population Council: Washington, DC.



Population Council/Horizons  
Communications Unit  
4301 Connecticut Avenue, NW  
Suite 280  
Washington, DC 20008



Tel: 202-237-9400  
Fax: 202-237-8410  
[horizons@pcdc.org](mailto:horizons@pcdc.org)  
[www.popcouncil.org/horizons](http://www.popcouncil.org/horizons)



This publication was made possible through support provided by the Global Bureau of Health/HIV-AIDS, U.S. Agency for International Development, under the terms of Award No. HRN-A-00-97-00012-00. The opinions expressed herein are those of the authors and do not necessarily reflect the views of the U.S. Agency for International Development.

© 2003 The Population Council Inc.