



Preventing HIV Infections in Infants and Young Children

at a glance

Why address transmission of HIV in infants and young children?

HIV infection among children is an increasingly serious public health problem, threatening previous gains in reducing child mortality. In 2002, 800,000 children under the age of 15 contracted HIV, most live in Sub-Saharan Africa. **Mother-to-child transmission (MTCT) causes more than 90% of all HIV infections in children under 15 years.** The risk of a mother transmitting HIV to her infant is estimated to be 5-10% during pregnancy, 10-20% during labor and delivery and 5-20% through breastfeeding. Without preventive interventions, rates of mother to child transmission of HIV vary from 15% to 30% without breastfeeding and 30% to 45% with prolonged breastfeeding.

Preventing mother-to-child-transmission of HIV has become an essential element of the worldwide HIV/AIDS control strategy. The Declaration of Commitment adopted at the UN General Assembly Special Session on AIDS (UNGASS) set a goal of reducing the proportion of infants infected with HIV by 20% by 2005, and by 50% by 2010.

A comprehensive approach to prevent HIV infection in infants and young children

To reach the UNGASS goal, the UN has developed a comprehensive approach which includes comprehensive HIV/AIDS prevention measures and a continuum of appropriate care for mothers and their children. The four-prong strategy includes:

1: Primary prevention of HIV infection. The most effective strategy in preventing HIV infection in infants and young children is to help women and their partners remain uninfected. Key interventions are behavior change communication to increase awareness and promote safe sexual behavior; ensuring access to reproductive health services including increasing condom availability and acceptability; treatment of sexually transmitted infections; and assuring blood safety (See HIV/AIDS at a glance). Because primary HIV infection during pregnancy and breastfeeding poses an increased threat of mother-to-child transmission, HIV prevention efforts should address the

needs of pregnant and lactating women, especially in high prevalence areas.

2: Prevention of unintended pregnancies among HIV-infected women. Reproductive health and family planning services should be improved and made widely available to all women, including those with HIV infection, to provide support and appropriate services to avoid unintended pregnancies. Increased availability of counseling and testing services would enable women to find out their sero-status and then obtain essential care and support services, including reproductive health and family planning services, and make informed decisions about their future reproductive lives.

3: Prevention of HIV transmission from an infected-mother to her child. Specific interventions to prevent mother-to-child transmission of HIV include:

- **Increasing access to HIV Testing and Counseling.** HIV Testing and Counseling is a critical entry point to prevent HIV infection in infants and young children. A woman's knowledge of her sero-status is essential for her to benefit from MTCT interventions and care and support services.
- **Antiretroviral (ARV) therapy.** A number of antiretroviral drug regimens have been shown to reduce mother-to-child transmission of HIV significantly. Current antiretroviral regimens include zidovudine alone, nevirapine alone, or a combination of zidovudine and lamivudine or combinations used in highly active antiretroviral therapy (HAART). The choice of ARV regimen should be made locally, taking into account feasibility, efficacy and cost.
- **Safe delivery practices** include avoiding invasive obstetrical procedures such as artificial rupture of membranes, fetal scalp monitoring and episiotomy. Although elective caesarean section has been shown to reduce the risk of MTCT by 50%, it is often unavailable, costly and impractical, with a risk of post-operative complications, especially in resource-constrained settings.
- **Counseling and support on infant-feeding methods.** Breastfeeding may add a 10-20% risk of MTCT, but not breastfeeding exclusively can expose children to increased risk of malnutrition and other infectious diseases besides HIV. It is recommended that when replacement feeding is acceptable, feasible, affordable, sustainable and safe, HIV-positive mothers should avoid

Indicators¹ –the UNAIDS Inter-agency team on PMTCT has agreed on a set of core indicators² (in blue) and additional indicators³ (in bold)

Core Interventions	Beneficiaries	Indicators¹ –the UNAIDS Inter-agency team on PMTCT has agreed on a set of core indicators² (in blue) and additional indicators³ (in bold)
1: Primary prevention of HIV infection (see HIV/AIDS at a glance)		
Increase condom availability, acceptability and quality: Conduct condom promotion activities, subsidize male and female condoms, assure quality and availability of condoms	General population	<ul style="list-style-type: none"> ✓ Total number of condoms distributed nation-wide ✓ Average number of days condoms are out of stock in antenatal care (ANC) clinics ✓ % of retail outlets with condoms in-stock
Provide behavior-change communication, including tailoring messages to pregnant women and their partners	General population, with focus on high-risk groups	<ul style="list-style-type: none"> ✓ Indicators of behavior change (eg condom use) in groups with high-risk behavior ✓ % of people aged 15-49 who know that MTCT can be prevented
Establish/expand voluntary counseling and testing services offering anonymous VCT to anyone who needs it, publicize the VCT system	General population	<ul style="list-style-type: none"> ✓ % of people aged 15-49 who have voluntarily requested an HIV test and received their results ✓ % of districts with VCT services
2: Prevent unintended pregnancies		
Expand family planning services	HIV-positive women and those at risk	<ul style="list-style-type: none"> ✓ # women, by sero-status, referred to family planning services for postpartum contraception from ANC services that offer the minimum package to prevent HIV in infants and young children
3: Prevent HIV transmission from mother to child		
Provide access to quality voluntary counseling and testing in antenatal clinics	Pregnant women	<ul style="list-style-type: none"> ✓ % of all pregnant women who attend at least one ANC visit who received an HIV test result and post-test counseling
Provide antiretroviral therapy – Offer short course ARV drugs to prevent MTCT – Train healthcare workers to administer ARV drugs – Strengthen infrastructure to deliver ARV therapy	HIV-infected mothers and their infants	<ul style="list-style-type: none"> ✓ % of HIV positive pregnant women receiving a complete course of ARV prophylaxis to reduce MTCT in accordance with nationally approved treatment protocol (or WHO/UNAIDS standards) in last 12 months ✓ % of infants born to HIV-infected women in last 12 months who are HIV positive
Provide counseling and support on infant feeding methods – Empower HIV-positive mothers, by providing information and support, to make informed decisions about how to feed their infants	HIV-infected mothers and their infants	<ul style="list-style-type: none"> ✓ # of HIV infected women receiving infant feeding counseling at their first infant follow-up visit, as % of all HIV infected women attending their first infant follow-up visit
4: Care and support for HIV infected women and their families		
Provide care and support to HIV-infected women, their infants, partners and families – Link HIV/AIDS care and support services to MTCT interventions – Strengthen referral systems – Train medical personnel in the care of HIV-related conditions	HIV infected mothers and their infants	<ul style="list-style-type: none"> ✓ % of all possible public, missionary, and workplace venues (family planning and primary health care clinics, ANC/MCH, and maternity hospitals) offering the minimum package of services to prevent HIV infection in infants and young children in the past 12 months ✓ % of HCWs newly trained or re-trained in the minimum package of services to prevent HIV infection in infants and young children in the preceding 12 months ✓ % of venues offering the minimum package of services for that level that have written guidance on making referrals for HIV positive women to facilities offering long term care and support for HIV infected women ✓ Existence of national guidelines (either approved or in draft) for the prevention of HIV and care of infants and young children, in line with international or commonly agreed upon standards

Sources: World Bank, UNAIDS Inter-agency Task Team on PMTCT

¹ For specifications on numerators and denominators, what indicators measure, and how to measure them refer to UNAIDS IATT on PMTCT “National Guide to Monitoring and Evaluating Programmes for the Prevention of HIV in Infants and Young Children”, 2003 (draft)

² Indicators that all national programs to prevent HIV infection in infants and young children should be collecting regardless of the type of epidemic

³ For countries experiencing specific epidemic types and if resources allow

all breastfeeding. Otherwise exclusive breastfeeding (no other fluids or food) is recommended during the first months of life because of its general health advantages over mixed feeding. The conditions for successful replacement feeding are rarely met in low income settings. All HIV-infected mothers should receive counseling on risks and benefits of various infant feeding options, and guidance in making an informed choice of the best option for their situation.

4: Provision of care and support for HIV infected mothers, their infants, partners and families. Programs for preventing HIV infection in infants and young children will identify large numbers of HIV-infected women who need special attention. Strengthening linkages with programs for the care and support of HIV-infected women, their infants and their families will help ensure that these women access the services that they need. Care and support should include identification, treatment, and palliative care for AIDS-related conditions; antiretroviral drugs for the mother-child pair and spouses; reproductive health care; social support for families and communities affected by HIV/AIDS especially orphans and vulnerable children; and support to carry out infant feeding decisions, including attention to adequate nutrition for mothers and their infants.

How much will it cost?

Economic analyses show that prevention of MTCT is cost-effective, with costs well below US\$100 per healthy life year gained. But cost-benefit and cost-effectiveness are highly context-specific and will be influenced by HIV prevalence and distribution, and the rate of uptake of MTCT interventions. Prices of ARV drugs used to prevent MTCT range from US\$0-4 for nevirapine and up to US\$300 for a short course of zidovudine. Costs for replacement feeding range from US\$50 to US\$300 for a period of six months depending on the country. Typically, about 90% of total MTCT program cost is in setting up services, including training, and strengthening health infrastructure.

Lessons learned from pilot MTCT interventions

■ Comprehensive Maternal and Child Health (MCH) services are critical for delivery of effective programs to prevent HIV infection in infants and young children. Improving access and quality of MCH services benefits all mothers and infants, irrespective of HIV-status, through: better pregnancy outcomes, significantly lower maternal and child morbidity and mortality, reduced susceptibility to opportunistic infections, timely detection and treatment of sexually transmitted infections, and improved nutritional status of both the mother and child.

- It is important to address ethical and human rights issues in preventing HIV infection in infants and young children. Women should be enabled to make informed decisions on all aspects of MTCT interventions and their decisions should be supported. As the UNGASS Declaration of Commitment states: "respect for the rights of people living with HIV/AIDS drives an effective response".
- It is important for countries to have a clear infant feeding policy that addresses HIV/AIDS. Replacement feeding may be difficult in areas with poor sanitation, limited access to breast milk substitutes, unsafe water supply or high prevalence of childhood infections. Postnatal support for the infant feeding method of choice is essential to address difficulties that the mother is having with her method of choice, to ensure that the method is practiced safely and effectively, and that the full health and nutritional benefits of the mother's method of choice are realized.
- Successful interventions to prevent HIV infection in infants and young children have worked with communities and male partners to ensure that interventions are relevant to the community and are used, support feeding options and reduce stigma associated with HIV infection.
- Disclosure of HIV test results to husbands/partners, which is to be decided upon by the women, varies considerably and is often a limiting factor. A number of effective MTCT sites advocate couple counseling and VCT services. Involvement of husbands/partners can considerably increase uptake of interventions and alleviate HIV/AIDS-related stigma and discrimination.
- Concern has been raised regarding development of resistance following single dose nevirapine, but the advantages of nevirapine in reducing HIV perinatal transmission far outweigh the disadvantages of resistance.
- The full package of interventions can be set up only where there is an efficiently functioning health system with certain key services. It is imperative to address health system constraints including human resources and infrastructure issues.
- A national policy for preventing HIV in infants and young children should help build up the necessary infrastructure for the program, enhancing health systems, providing training and setting up supply systems.
- Supervision, monitoring and evaluation are crucial for developing strong, evidence-based MTCT prevention programs and policies.
- MTCT prevention packages should be reviewed periodically for continued relevance and appropriateness.

For more information

World Bank

Debrework Zewdie, Program Director, Global HIV/AIDS Program, dzewdie@worldbank.org

Elizabeth Lule, Population and Reproductive Health Advisor, elule@worldbank.org

Useful websites

<http://www.unaids.org>

<http://www.who.int/hiv/en/>

<http://www.unicef.org>

http://www.usaid.gov/pop_health/aids/TechAreas/mtct/index.html

<http://www.cdc.gov>

Key references:

AED, Prevention of mother-to-child transmission of HIV in Africa (Asia): Practical guidance for programs, June 2001 (June 2002)

Commission on Macroeconomics and Health, The evidence base for interventions to prevent HIV infection in low and middle-income countries, August 2001.

DFID, Prevention of Mother to Child Transmission of HIV: A Guidance Note, November 2001.

ICRW, Community Involvement and the Prevention of Mother-to-Child Transmission of HIV/AIDS, 2002.

UN, United Nations General Assembly Special Session on HIV/AIDS: Declaration of Commitment on HIV/AIDS, 2001.

UNAIDS, AIDS epidemic update, December 2002.

UNAIDS, Counseling and voluntary HIV testing for pregnant women in high HIV prevalence countries, October 1999.

UNAIDS, Improving access to care in developing countries: lessons learned from practice, research, resources and partnerships, July 2002.

UNAIDS, National AIDS Programmes: A guide to monitoring and evaluation, 2000.

UNAIDS IATT on PMTCT, National guide to monitoring and evaluation of programmes for the prevention of HIV in infants and young children, August 2003 (*draft*).

WHO, Prevention of HIV in infants and young children: Review of evidence and WHO's activities. 2002

WHO, Prevention of Mother-To-Child-Transmission of HIV: Selection and Use of Nevirapine, 2001.