



Prevention of HIV in infants and young children



Review of evidence and WHO's activities

A major public health problem

HIV among children is a growing problem, particularly in the countries hardest hit by the AIDS epidemic. The overwhelming majority of infected children acquire the infection through mother-to-child transmission. Prevention of HIV infection in infants and young children is now a high priority and has been the rallying point for enhanced prevention efforts.

HIV/AIDS among children in the year 2001

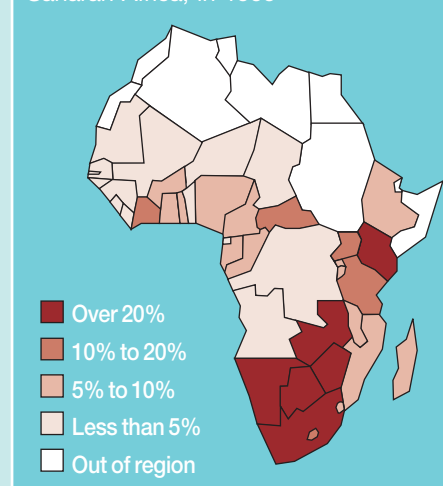
	Total
Children living with HIV/AIDS	2.7 million
Children who died of HIV/AIDS	580,000
Children newly infected with HIV	800,000

Source: UNAIDS/WHO (2001).

While HIV infection among infants is a problem all over the world, it is most acute in sub-Saharan Africa, where almost 90% of all HIV-infected children live.

Impact of HIV/AIDS on child survival in Africa

Proportion of under-5 mortality attributable to HIV/AIDS in sub-Saharan Africa, in 1999



Source: Walker, Lancet (2002).

HIV/AIDS is wiping out years of progress in improving child survival. It is already responsible for substantially increasing the mortality rates of children under 5 years of age, which could double in some countries by the year 2010 due to the impact of AIDS.

Timing and risks of transmission

In the absence of any intervention, rates of mother-to-child transmission of HIV can vary from 15% to 30% without breastfeeding and can reach from 30% to 45% with prolonged breastfeeding. Studies have shown that transmission can take place during pregnancy, labour or delivery and can affect infants and young children as long as breastfeeding continues. Rates of transmission have been estimated, as follows:

	Transmission Rate
During pregnancy	5 - 10%
During labour and delivery	10 - 20%
During breastfeeding	5 - 20%
Overall without breastfeeding	15 - 30%
Overall with breastfeeding till 6 months	25 - 35%
Overall with breastfeeding till 18 to 24 months	30 - 45%

Source: de Cock, JAMA (2000).

The UNGASS Declaration of Commitment

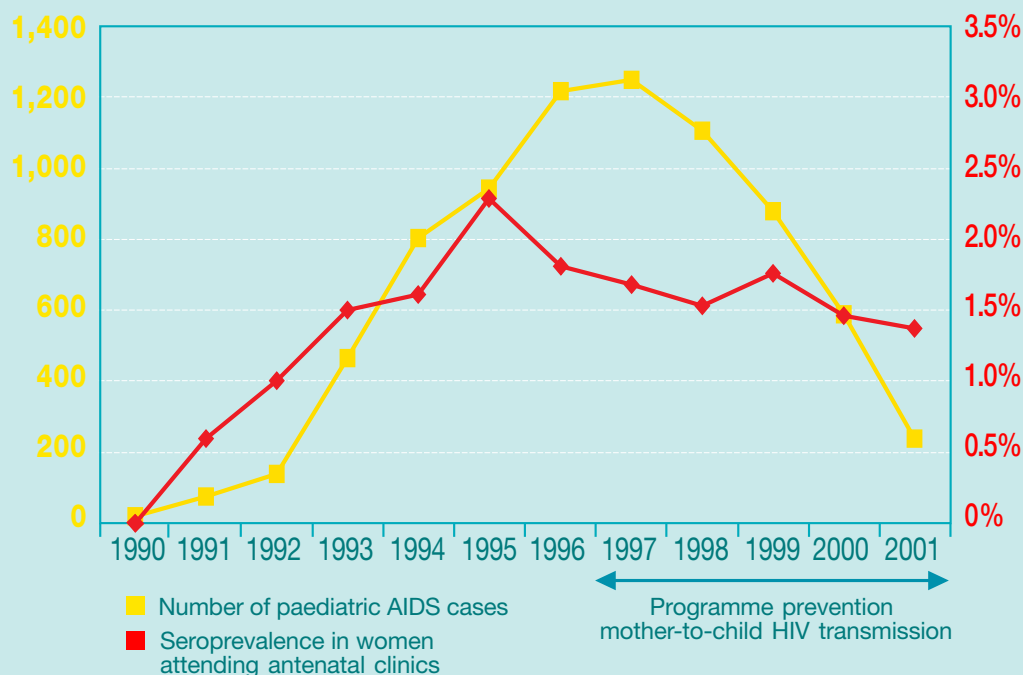
In June 2001, during the United Nations General Assembly Special Session (UNGASS) on HIV/AIDS, 189 Member States declared their commitment to take action to:

"By 2005, reduce the proportion of infants infected with HIV by 20 per cent, and by 50 per cent by 2010 ... "

A public health solution that works

The rate of transmission of HIV from infected pregnant women to their infants has decreased to less than 2% in industrialized countries through the use of highly effective antiretroviral drug regimens for the prevention of vertical transmission (or for treating the mother) combined with elective Caesarean section and replacement feeding from birth. Some other countries, such as Thailand, have also succeeded in reducing the number of children infected with HIV. Achieving similar results in other developing countries, some of which are severely affected by the AIDS epidemic, will require addressing many challenges and solving some key problems.

Decline in paediatric AIDS cases in Thailand



A rapid decline in the number of AIDS cases among children under 5 years of age has been observed in Thailand since programmes to prevent mother-to-child transmission of HIV were first introduced in 1997. This decline in the number of paediatric cases is also associated to a reduction in the prevalence of HIV among women attending antenatal clinics, as a result of intensive HIV prevention efforts.

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

A framework for action to prevent HIV infection in infants and young children

All women —————> prevent HIV infection

HIV-infected women —————> prevent unintended pregnancy

HIV-infected women —————> prevent transmission to infants and young children

HIV-infected women, their infant and family —————> provide care and support

To meet the UNGASS goal, a number of interventions need to be in place; they address the following aims:

- **Primary prevention of HIV infection.** Avoiding infection in women will contribute significantly to the prevention of HIV transmission to infants and young children, as well as to other prevention goals. HIV prevention programmes need to be directed at a broad range of women at risk – and their partners. A particular effort is required to reach young people with relevant services. Because primary HIV infection during pregnancy and breastfeeding poses an increased threat of mother-to-child transmission, HIV prevention efforts should also address the needs of pregnant and lactating women, especially in high prevalence areas.
- **Prevention of unintended pregnancies among HIV-infected women.** Most HIV-infected women in the developing world are unaware of their serostatus. Family planning services need to be strengthened so that all women, including those infected, can receive support and services to prevent unintended pregnancies. Women known to be infected with HIV should receive essential care and support services, including family planning and other reproductive health services, so that they can make informed decisions about their future reproductive lives.
- **Prevention of HIV transmission from HIV-infected women to their infants.** A package of specific interventions has been identified to prevent HIV transmission from an infected mother to her child. It includes antiretroviral drug use, safer delivery practices, and infant-feeding counselling and support. Here too, counselling and testing plays a key role so that HIV-infected women can learn their status in good time to draw the full benefits of this package.
- **Provision of care and support to HIV-infected women, their infants and family.** Programmes for the prevention of HIV in infants and young children will help identify large numbers of HIV-infected women who need special attention. Strengthening the linkages among those programmes and programmes for the care and support services of HIV-infected women, their infant and their families will ensure that the women themselves also get access to the services they need. Such services might include the prevention and treatment of opportunistic infections, the use of antiretroviral drug therapy, psychosocial and nutritional support, and reproductive health care, including family planning. With improvements in the mother's survival and quality of life, the child too will accrue important benefits. Access to care and support should also enhance community support for programmes to prevent mother-to-child transmission and increase the uptake of critical interventions, such as HIV testing.

Specific interventions to reduce mother-to-child transmission of HIV

Antiretroviral drug use. A number of antiretroviral drug regimens – based on zidovudine, zidovudine and lamivudine or nevirapine, or combinations used in highly active antiretroviral therapy (HAART) – have been shown to be effective in reducing mother-to-child transmission of HIV. The choice of antiretroviral regimen should be made locally, taking into account issues of feasibility, efficacy and cost.

Safer delivery practices. It has been shown that elective Caesarean section can help to reduce the risk of mother-to-child HIV transmission. This, however, may not be an appropriate intervention in resource-constrained settings, because of limited availability, cost and the risk of complications. Invasive obstetrical procedures, such as artificial rupture of membranes, fetal scalp monitoring and episiotomy, may increase the risk of transmission of HIV to the infant. Their use in HIV-infected women should be limited to cases of absolute necessity.

Infant-feeding counselling and support. Breastfeeding can add to the risk of HIV transmission by 10-20%. Lack of breastfeeding, however, can expose children to an increased risk of malnutrition or infectious diseases other than HIV. While avoiding breastfeeding would seem logical when the mother is HIV-infected, striking the necessary balance of risks is in fact more complicated. All HIV-infected mothers should receive counselling that includes information about the risks and benefits of various infant feeding options, and guidance in selecting the most suitable option for their situation. When replacement feeding is acceptable, feasible, affordable, sustainable and safe, avoidance of all breastfeeding by HIV-infected mothers is recommended. Otherwise, exclusive breastfeeding is recommended during the first months of life and should then be discontinued as soon as it is feasible.

More than the cost of drugs alone

For many years now, the cost of antiretroviral drugs has been seen as the key hurdle to implementing interventions that can prevent HIV infection in infants and young children in resource-constrained countries. Now, with the negotiation of more advantageous pricing agreements, as well as large-scale donations of some drugs, the possibility of pregnant women in these countries having access to antiretroviral drugs has increased enormously.

Even with the cost barrier removed, many hurdles to implementing interventions remain. The most important may be the inability of health systems in some of the worst affected countries to deliver the necessary services. In many of these countries, the use of antenatal care is too limited at present to provide efficient and widespread interventions that prevent HIV infection in infants and young children.

Moreover, antenatal care must be used effectively. It is often restricted to one visit only (or happens late in pregnancy) and may not be associated with skilled assistance by a health care worker at the time of delivery. Furthermore, in many of the countries where the need is greatest, access to voluntary counselling and testing – essential if women seeking antenatal care are to know their HIV status and make use of specific prevention and care interventions – seldom exists. To enable wide delivery of the interventions needed to prevent HIV infection in infants and young children, these issues must be addressed.

Based on WHO estimates, the percentage of women receiving antenatal care, defined as at least one visit, ranges from 20% to 99% in Africa, with an average of 62%. The percentage of women having a professionally attended delivery ranges from 2% to 99%, with an average of 36%.

What WHO is doing

The task of helping countries prepare to engage in this effort is enormous, and WHO is committed to working with its traditional partners – ministries of health, international agencies, nongovernmental organizations and people living with HIV/AIDS – to make the prevention of HIV in infants a reality, especially in the hardest hit developing countries.

Highlighting the importance of prevention

WHO is committed to keeping the focus on the best and most humane ways to prevent transmission of HIV to infants and young children – that is, keeping young women free from infection. HIV prevention, in general, is a key focus for WHO's Department of HIV/AIDS.

Including HIV in family planning programmes

Through the efforts of its Department of Reproductive Health and Research, WHO will build on its long history of supporting countries to improve the quality and coverage of their family planning and other reproductive health services. It will also continue to advocate for a shift in emphasis in family planning programmes, with greater attention being given to simultaneously preventing infection and pregnancy (dual protection). In some cases, this will entail greater emphasis being placed on the use of condoms, both male and female, as a primary family planning method.

Strengthening the infrastructure for preventing HIV infection in infants

Expanding antenatal care services. If preventing HIV infection in infants and young children is to be successful, women must have expanded access to antenatal care and must use the services more frequently and earlier in pregnancy than is currently the case. To address this issue, WHO will support maternal and reproductive health programmes in countries through its Making Pregnancy Safer Initiative.

Increasing access to voluntary counselling and testing. Even if women use antenatal care services, they must have access to voluntary counselling and testing to detect any HIV infection and must be offered specific interventions to prevent vertical transmission of HIV. Expanding access to voluntary counselling and testing is a major challenge, and WHO is contributing to address it by developing guidelines and tools for the implementation of those services, whether they be free standing or linked to antenatal care and other reproductive health services.

Extending skilled attendance to all births. Another important focus of WHO's Making Pregnancy Safer Initiative is increasing the number of pregnant women assisted by a skilled health care worker during childbirth. This is vital to ensuring the appropriate use of antiretroviral drugs for preventing perinatal transmission and to ensuring timely infant-feeding counselling and support.

Promoting the integration in health systems. To be successful on the scale that is needed and hoped for, the prevention of HIV infection among infants and young children must become an integral part of the health system of a country, especially in those countries most heavily affected by HIV. The relevant departments in WHO are working together to strengthen health systems, to facilitate this integration.

Increasing access to HIV care

WHO is intensifying efforts to increase access to HIV care in resource-limited settings, while strengthening linkages between prevention and care activities – to maximize the impact of both. Programmes for the prevention of HIV in infants and young children are identifying large numbers of women infected with HIV. WHO is developing guidance on key elements of a comprehensive approach to care, treatment and support for these women, their infants and their families.

Providing guidance

Keeping abreast of the science. WHO actively reviews developments in the science that underlies the prevention of HIV infection in infants and young children, assessing the strength of evidence and highlighting key gaps in the research base. This is an important service to countries, many of which do not have timely access to complete information on scientific developments and are thus at a disadvantage in developing and improving prevention policies and programmes.

Choice and use of antiretroviral drugs. WHO is reviewing the evidence and developing guidance that countries need to enable them to choose among a range of options for the use of antiretroviral drugs for preventing mother-to-child transmission, and for treating HIV/AIDS-related conditions. WHO has developed guidelines for a public health approach to scaling up antiretroviral therapy in resource-limited settings.

Support for infant feeding programmes. How best to feed an infant when the mother is HIV-infected is a complicated issue. WHO is supporting research that explores ways to make breastfeeding safer, which will facilitate the decisions mothers must make about feeding options. Tools that support counselling of HIV-positive mothers on replacement feeding are also being developed.

Monitoring and evaluation. The cost and complexity of the interventions for preventing mother-to-child transmission make it essential to assure that the effort and expense are justified. WHO is working with its partners to develop the indicators that will assess the performance of programmes in developing countries and will monitor the progress made towards reaching the UNGASS goal. In addition, the long-term safety of antiretroviral-drug use (for both mother and child), the possibility of developing resistance to antiretroviral drugs and the continuing efficacy of chosen regimens all require careful monitoring and evaluation. WHO is committed to helping its partners implement monitoring and evaluation systems capable of tracking these important issues.

Modelling impact. While most of the world's attention is focused on providing antiretroviral drugs to decrease perinatal transmission, it is possible that the greatest prevention impact may come from investments in preventing HIV infection in young women and in assisting HIV-positive women to prevent unintended pregnancy. WHO is developing models to assess under what conditions investments in prevention of HIV infection in infants and young children will yield the most substantial and cost-effective results.

Technical support to countries for a public health approach to prevention and care. WHO is committed to helping countries deliver both the best HIV prevention and the best HIV/AIDS-related care. In doing so, WHO hopes to elaborate the links and mutual benefits between prevention and care and to develop and strengthen a public health approach to confronting the AIDS epidemic in the future.

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