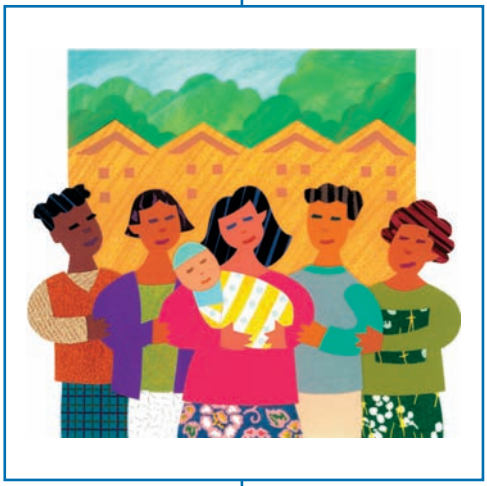
HIV and Infant Feeding

Update



based on the Technical Consultation

held on behalf of the Inter-agency Task Team (IATT) on Prevention of HIV Infection in Pregnant Women, Mothers and their Infants

Geneva, 25–27 October 2006

World Health Organization

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Table of contents

Introduction

Researchers, programme implementers, infant feeding experts and representatives of the Inter-agency Task Team (IATT) on Prevention of HIV Infection in Pregnant Women, Mothers and their Infants[1], United Nations agencies, the WHO Regional Office for Africa and six WHO headquarters departments[2] gathered in Geneva from 25–27 October 2006 in order to review the substantial body of new evidence and experience regarding HIV and infant feeding that had been accumulating since a previous technical consultation in October 2000[3], and since the Glion[4] and Abuja[5] calls to action on the prevention of mother-to-child transmission of HIV. The aim was to establish whether it was possible to clarify and refine the existing United Nations guidance[6], which was based on the recommendations from the previous meeting.

After three days of technical and programmatic presentations and intensive discussion, the group endorsed the general principles underpinning the October 2000 recommendations and, based on the new evidence and experience presented, reached consensus regarding a range of issues and their implications. A statement available at http://www.who.int/child-adolescent-health/New_Publications/NUTRITION/consensus_statement.pdf presents the consensus achieved at the end of the meeting, and a full report of the meeting is available at http://www.who.int/child-adolescent-health/NUTRITION/HIV_infant.htm.

The purpose of this document is to provide the full list of updated recommendations and an explanation of key points. This information is aimed at programme managers and decision-makers, and those who will be in charge of revising national guidelines on prevention of mother-to-child HIV transmission and infant and young child feeding.

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1 Academy for Educational Development, Catholic Medical Mission Board, Columbia University, Elizabeth Glaser Pediatric AIDS Foundation, UNAIDS, UNFPA, UNICEF, US Agency for International Development and the US Centers for Disease Control and Prevention.

2 Child and Adolescent Health and Development, Nutrition for Health and Development, HIV/AIDS, Reproductive Health Research, Making Pregnancy Safer and Food Safety, Zoonoses and Foodborne Diseases.

3 WHO. New data on the prevention of mother-to-child transmission of HIV and their policy implications. Conclusions and recommendations. WHO technical consultation on behalf of the UNFPA/UNICEF/WHO/UNAIDS Inter-agency Task Team on mother-to-child transmission of HIV. Geneva, 11-13 October 2000. Geneva, WHO, 2001, WHO/RHR/01.28.

4 UNFPA and WHO. The Glion Call to Action on Family Planning and HIV/AIDS in Women and Children, 3-5 May 2004.

5 Call to Action: Towards an HIV-free and AIDS-free Generation. Prevention of mother-to-child transmission. High-level global partners forum, Abuja, Nigeria, December 3, 2005.

6 For current guidance, please see documents and tools at *http://www.who.int/child-adolescent-health/NUTRITION/HIV_infant.htm*; and Guidelines for the Safe Preparation, Storage and Handling of Powdered Infant Formula at *http://www.who.int/foodsafety/publications/micro/pif_guidelines.pdf*.

Updated recommendations

The October 2006 technical consultation generally endorsed the recommendations from the October 2000 technical consultation, but clarified and updated some of them, and identified a few as no longer relevant. The full list of current recommendations on HIV and infant feeding, including the new ones and those remaining valid from 2000, is in Annex 1.

Technical background to recommendations

A draft update of HIV transmission through breastfeeding: A review of available evidence was presented at the October 2006 consultation, and the final version is now available at http://www.who.int/child-adolescent-health/NUTRITION/HIV_infant.htm.

A summary of the key data considered in updating the recommendations, taken from the Consensus Statement, is in Annex 2.

Clarifications of key points

Risk of transmission

The general range of HIV transmission through breastfeeding of any kind without any interventions is 5-20% (WHO et al., 2004). However, many health workers, even those with relevant training, over-estimate the risk of transmission (Chopra and Rollins, 2007). Figures lower than this range have been reported:

- Exclusive breastfeeding from about six weeks to six months was found to carry a risk of about 4% in South Africa (Coovadia et al., 2007). In Zimbabwe, the HIV transmission rate between six weeks and six months among infants exclusively breastfed for at least three months was about 1.3% (Iliff et al., 2005). The reason the period measured starts from about six weeks and not birth is because this is the time at which it is usually possible to differentiate HIV transmission during delivery from transmission during breastfeeding.
- Since breastfeeding as commonly practised carries a risk of transmission of between 0.8 and 1.2 per child-month (BHITS, 2004), breastfeeding for a shorter period than usual reduces the cumulative risk.
- Women who need anti retrovirals (ARVs) for their own health should receive them. These women are most likely to transmit HIV through breastfeeding

because of high viral load or low CD4+ count. Comparative studies in women who do not yet require treatment on the safety and efficacy of ARVs taken during breastfeeding to reduce transmission are ongoing. There is increasing evidence from observational studies presented as abstracts (Arendt et al., 2007; Kilewo et al., 2007) that such women are likely to have a low risk of transmission.

- Prevention of HIV infection of the mother during the breastfeeding period, and prevention and prompt treatment of mastitis and other breast problems, also lower the risk of transmission.

Exclusive breastfeeding

At the time of the October 2000 technical consultation, the main reason for recommending exclusive breastfeeding for HIV-infected women who choose to breastfeed was the many well-documented benefits of exclusive over predominant[1] or partial[2] breastfeeding on infant health. The consultation was also aware of the possible benefits of exclusive breastfeeding in relation to HIV transmission suggested by the work of Coutsoudis and colleagues (1999). Since then, other studies have shown that exclusive breastfeeding carries a lower risk of HIV transmission than mixed breastfeeding (Iliff et al., 2005; Coovadia et al., 2007), and these findings support the earlier recommendation.

Health workers should be reminded that exclusive breastfeeding for the first six months is the gold standard for babies.

Mixed feeding

As explained above, mixed feeding carries a higher risk of HIV transmission than exclusive breastfeeding. The risk with mixing breastfeeding with formula milk or solids is substantially higher than the risk from adding water or other non-food fluids (Coovadia et al., 2007). However, for *HIV-negative* women the risk of mixed feeding in terms of HIV transmission does not exist. Therefore, for HIV-negative women who do not wish to exclusively breastfeed, encouraging any breastfeeding at all is better than not breastfeeding.

Duration of breastfeeding

In the general population, women are recommended to exclusively breastfeed for the first six months of their child's life (WHO, 2002; WHA, 2001). This recommendation now also applies to those HIV-infected women who choose to breastfeed because replacement feeding is not acceptable, feasible, affordable, sustainable and safe (AFASS).

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[1] Predominant breastfeeding means that the infant's predominant source of nourishment has been breast milk. However, the infant may also have received water and water-based drinks; fruit juice; Oral Rehydration Salts solution; and ritual fluids (in limited quantities).

[2] Partial breastfeeding means giving an infant some breastfeeds and some artificial feeds, either milk or cereal, or other food.

Any benefits of shortening the exclusive breastfeeding period in terms of HIV transmission are unlikely to overcome the risks of morbidity and mortality from early cessation before six months. However, the recommendations recognize that there may be some HIV-infected women whose circumstances will change during the first six months of their babies' lives, such that they can safely transition to replacement feeding if it becomes AFASS at an earlier time. They also recognize that for some infants, the risk of malnutrition after six months is great if the family does not have adequate good-quality food to replace breast milk. For them, the risk of HIV transmission from mixed feeding after six months may be less than the risk of severe malnutrition from stopping breastfeeding completely.

Cessation of breastfeeding

For HIV-infected women who choose to exclusively breastfeed, early cessation of breastfeeding (before six months) is no longer recommended, unless their situation changes and replacement feeding becomes AFASS.

Abrupt or rapid cessation even at six months is not generally recommended because of possible negative effects on the mother and infant, including mastitis and breast pain (Sinkala et al., 2007). The optimal duration for the cessation process is not known, but for most women and babies a period of about two to three days up to two to three weeks would appear to be adequate, based on expert opinion and programmatic experience.

Breastfeeding for HIV-infected infants

Previous guidance stated that infants confirmed to be HIV-infected who were still breastfed should continue up to two years or beyond (as per the general population), based on the consensus of experts. There are now data from Zambia to support this recommendation (Sinkala et al., 2007). This issue has become more relevant with the wider availability of PCR testing for determining infant HIV status at about six weeks, much earlier than previously possible.

Counselling

Infant feeding counselling and support is recommended for HIV-infected women during pregnancy, in the first days after delivery, and at various points throughout the first two years of the infant's life. Initial counselling on feeding choices to prepare a woman for making a decision is time consuming. The group recommended simplifying the counselling process, and thereby often reducing the time needed, so that only the two main options (replacement feeding and exclusive breastfeeding) are discussed. Only if a woman expresses interest in another option (expression and heat treatment, wet-nursing or, in some countries, breast-milk banks), would the counsellor discuss it in detail.

After an infant feeding decision is made by the mother, the content of the counselling may vary depending on the context at the time. This would apply in particular for counselling at six months for women who are still breastfeeding. While AFASS criteria

should be taken into account in deciding whether to stop, the most important consideration will be whether the family is able to provide milk or other animal-source foods as well as complementary foods suitable for an infant at that age. If the family does not have appropriate foods available to replace the breast milk, then the risk of severe malnutrition may be greater than the risk of HIV transmission, even during a short period of mixed feeding.

PCR testing

WHO recommends virological testing of infants from six weeks of age. Extra support on infant feeding for the mothers of these infants will be required at this time. A breastfeeding woman whose child tests negative may understandably react to this knowledge by deciding to stop breastfeeding. However, counselling based on AFASS criteria should be used to help her consider if stopping is appropriate for her circumstances.

Home-modified animal milk

Home-modified animal milk is no longer recommended as a replacement feeding option to be used for all of the first six months of life. It does not provide all the nutrients that an infant needs, and the micronutrient mix originally recommended to be added to it is not available. For women who choose replacement feeding, home-modified animal milk should only be used for short times when commercial infant formula is not available.

For infants six months of age and older, undiluted animal milks can be added to the diet, and serve as a suitable substitute for breast milk. The recommended volumes are 200–400 ml per day if adequate amounts of other animal source foods are consumed regularly, otherwise 300–500 ml per day.

Provision of infant formula

WHO has no recommendation on whether governments should provide commercial infant formula for free or at a subsidized price to HIV-infected mothers. However, if a government chooses to provide formula, United Nations agencies recommend that basic conditions are in place to ensure that it is distributed and used appropriately. These are listed in HIV and infant feeding: Guidelines for decision-makers (WHO et al., 2003a) (see Annex 3).

Experience to date on the use of commercial infant formula in national programmes and in research projects in Africa has not demonstrated expected reductions in HIV-transmission or increases in HIV-free survival, and has sometimes had undesirable spill-over to the general population (Creek et al., 2007; Thior et al., 2006).

The challenge of providing an adequate diet to non-breastfed infants does not stop at six months. Where resources exist, the infants of HIV-infected mothers who have exclusively breastfed for up to six months should be eligible for receiving some kind of replacement milk from the time they stop breastfeeding.

Heat-treatment of expressed breast milk

While no longer considered a main infant feeding option, heat-treatment of expressed breast milk may be feasible for some women, especially after the baby is a few months old and during the transition from exclusive breastfeeding to replacement feeding. The only method recommended by WHO at home is boiling. However, other methods that may be easier and quicker, while still safe, are currently being tested for feasibility.

The way forward

WHO and its partners will be revising and re-issuing some of their current guidance on the basis of the Consensus Statement. Countries are recommended to review their current guidelines, job aids and training materials related to HIV and infant feeding and prevention of mother-to-child transmission of HIV in light of the information and recommendations in this document, and to consider updating them as appropriate.

In the process of this work, it would be opportune for countries to review the status of implementation of the areas outlined in the HIV and infant feeding: Framework for priority action (WHO et al., 2003b) (in summary: policy on infant and young child feeding; status of the Code of marketing of breast-milk substitutes; breastfeeding protection, promotion and support for the general population; infant feeding counselling and support for HIV-positive mothers; and monitoring and evaluation).

Most countries would also benefit from developing appropriate local recommendations and support to HIV-infected mothers and their infants after breastfeeding stops, particularly during the critical growth and development period of about six months to two years.

Countries are also reminded that good quality counselling by adequately trained and supervised counsellors is key to preventing post-natal HIV transmission and ensuring improved HIV-free child survival. Several training courses and job aids are available to promote good counselling.

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ANNEX 1

Updated HIV and Infant Feeding recommendations, based on 2000 and 2006 technical consultations

1. The most appropriate infant feeding option for an HIV-infected mother depends on her individual circumstances, including her health status and the local situation, but should take consideration of the health services available and the counselling and support she is likely to receive.

2. Exclusive breastfeeding is recommended for HIV-infected mothers for the first six months of life unless replacement feeding is acceptable, feasible, affordable, sustainable and safe for them and their infants before that time.

3. When replacement feeding is acceptable, feasible, affordable, sustainable and safe, avoidance of all breastfeeding by HIV-infected mothers is recommended.

4. At six months, if replacement feeding is still not acceptable, feasible, affordable, sustainable and safe, continuation of breastfeeding with additional complementary foods is recommended, while the mother and baby continue to be regularly assessed. All breastfeeding should stop once a nutritionally adequate and safe diet without breast milk can be provided[1].

5. All HIV-infected mothers should receive counselling which includes provision of general information about the risks and benefits of various infant feeding options, and specific guidance in selecting the option most likely to be suitable for their situation. Whatever a mother decides, she should be supported in her choice.

6. Adequate numbers of people who can counsel HIV-infected women on infant feeding should be trained, deployed, supervised and supported. Such support should include updated training as new information and recommendations emerge.

7. When HIV-infected mothers choose not to breastfeed from birth or stop breastfeeding later, they should be provided with specific guidance and support for at least the first two years of the child's life to ensure adequate replacement feeding. Programmes should strive to improve conditions that will make replacement feeding safer for HIV-infected mothers and families.

8. Information and education on mother-to-child transmission of HIV should be urgently directed to the general public, affected communities and families.

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[1] For information on a nutritionally adequate and safe diet, see WHO. Guiding principles for feeding non-breastfed infants 6-24 months. Geneva, 2005.

9. HIV-infected mothers who breastfeed should be:

   a. assisted to ensure that they use a good breastfeeding technique to prevent breast problems, which should be treated promptly if they occur;

   b. provided with specific guidance and support when they cease breastfeeding to avoid harmful nutritional and psychological consequences and to maintain breast health.

10. Whatever the mother's decision on infant feeding, health services should follow up all HIV-exposed infants, and continue to offer infant feeding counselling and support, particularly at key points when feeding decisions may be reconsidered, such as at the time of early infant HIV diagnosis and at six months of age.

11. Breastfeeding mothers of infants and young children who are known to be HIV-infected should be strongly encouraged to continue breastfeeding as per the recommendations for the general population, that is up to two years or beyond.

12. National programmes should provide all HIV-exposed infants and their mothers with a full package of child survival and reproductive health interventions[2] with effective linkages to HIV prevention, treatment and care services. In addition, health services should make special efforts to support primary prevention for women who test negative in antenatal and delivery settings, with particular attention to the breastfeeding period.

13. Governments should ensure that the package of interventions referenced above, as well as the conditions described in current guidance[3], are available before any distribution of free commercial infant formula is considered.

14. Governments, other stakeholders and donors should greatly increase their commitment and resources for implementation of the Global Strategy for Infant and Young Child Feeding and the United Nations HIV and Infant Feeding Framework for Priority Action in order to effectively prevent postnatal HIV infections, improve HIV-free survival and achieve relevant United Nations General Assembly Special Session goals.

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[2] See: WHO. Antiretroviral drugs for treating pregnant women and preventing HIV infection in infants in resource-limited settings. Geneva, 2006; WHO. The World Health Report: Make every mother and child count. Geneva, 2005.

[3] See *http://www.who.int/child-adolescent-health/NUTRITION/HIV_infant.htm*.

ANNEX 2

Summary of new evidence and programmatic information considered at the HIV and Infant Feeding Technical Consultation, Geneva, 2006

New evidence on HIV transmission through breastfeeding

- Exclusive breastfeeding for up to six months was associated with a three- to four-fold decreased risk of transmission of HIV compared to non-exclusive breastfeeding[1] in three large cohort studies conducted in Côte d'Ivoire, South Africa and Zimbabwe.
- Low maternal CD4+ count, high viral load in breast milk and plasma, maternal seroconversion during breastfeeding and breastfeeding duration were confirmed as important risk factors for postnatal HIV transmission and child mortality.
- There are indications that maternal HAART for treatment-eligible women may reduce postnatal HIV transmission, based on programme data from Botswana, Mozambique and Uganda; follow-up trial data on the safety and efficacy of this approach, and on infant prophylaxis trials are awaited.

New evidence on morbidity and mortality related to HIV and infant feeding

- In settings where antiretroviral prophylaxis and free infant formula were provided, the combined risk of HIV infection and death by 18 months of age was similar in infants who were replacement fed from birth and infants breastfed for three to six months (Botswana and Côte d'Ivoire).
- Early cessation of breastfeeding (before six months) was associated with an increased risk of infant morbidity (especially diarrhoea) and mortality in HIV-exposed children[2] in completed (Malawi) and ongoing (Kenya, Uganda and Zambia) studies.
- Early breastfeeding cessation at four months was associated with reduced HIV transmission but also with increased child mortality from 4 to 24 months in preliminary data presented from a randomized trial in Zambia.
- Breastfeeding of HIV-infected infants beyond six months was associated with improved survival compared to stopping breastfeeding in preliminary data presented from Botswana and Zambia.

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1 In Côte d'Ivoire, non-exclusive breastfeeding included any other liquids or foods; in South Africa, it included non-human milks or other liquids, with or without solids; in Zimbabwe, it included feeding non-breast milk foods and liquids.

2 HIV-exposed refers to children born or breastfed by women living with HIV.

Improving infant feeding practices

- Improved adherence and longer duration of exclusive breastfeeding up to six months were achieved in HIV-infected and HIV-uninfected mothers when they were provided with consistent messages and frequent, high quality counselling in South Africa, Zambia and Zimbabwe.

New programme data

- United Nations HIV and infant feeding guidance is available and increasingly used in policy-making in countries, but challenges in implementation remain.
- Coverage and quality of the full range[3] of interventions to prevent mother-to-child transmission of HIV, including those related to infant feeding counselling and support, is disturbingly low.
- Weak and poorly organized health services affect the quality of infant feeding counselling and support. Inaccurate, insufficient, or non-existent infant feeding counselling has led to inappropriate feeding choices by both HIV-infected and HIV-uninfected women.
- Scaling-up quality infant feeding counselling and support and related interventions needs sustained and strong commitment and support from international agencies and donors working in concert with Ministries of Health.
- The sharp increase in deaths from diarrhoea and malnutrition in non-breastfed infants and young children during a recent diarrhoeal disease outbreak in one country emphasizes the vulnerability of replacement-fed infants and young children, and the need for adequate follow-up for all infants.
- Increasing access to early infant diagnosis in the first months of life and to paediatric ARV treatment provides new opportunities for postnatal infant feeding assessment, counselling, and follow-up nutritional support.

[3] The full range of interventions includes: primary prevention of HIV infection in women; prevention of unintended pregnancies in women living with HIV; prevention of transmission from women living with HIV to their infants; and provision of care, treatment and support for women living with HIV and their families.

ANNEX 3

Necessary Considerations for Distribution and Procurement of Free or Subsidized Commercial Infant Formula[1]

Governments may decide to provide formula to the infants of HIV-positive women under specific conditions[2]:

- Formula should be provided free or at a subsidized cost only to those HIV-positive women and their infants for whom replacement feeding is acceptable, feasible, sustainable and safe. The government concerned should ensure that it can afford to supply formula with no interruption, even in the remotest areas, for as long as the child needs it. Offers of free or low-cost formula from manufacturers or distributors should not be accepted. Governments should procure formula through normal channels.
- Governments should ensure implementation of the Code (with particular emphasis on the procurement and distribution of formula and on the Code's requirements for the product and packaging).
- Staff responsible for distributing formula should have guidelines specifying the HIV-positive women who will receive it, under what conditions, how frequently and for how long, where it will be distributed, etc.
- Before commercial infant formula is made available in health facilities, counsellors trained in relation to breastfeeding, complementary feeding and HIV and infant feeding should be identified. They need to be skilled in providing non-biased counselling, guidance and support to all mothers. Counselling for HIV-positive women who opt for formula should include demonstrations on how safely to store, prepare and feed it, including cup feeding. Demonstrations should be made only to women who have chosen to formula feed.
- Before governments make infant formula available at health facilities, they should prepare plans to explain to the public the problems raised by HIV and infant feeding and the consequent reasons for making commercial infant formula available. The purpose would be that mothers who are advised to obtain and use free formula and to avoid breastfeeding are not stigmatized for failing to breastfeed. Fear of stigmatization may induce some mothers to practise mixed feeding.

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1 From Section 4.4, HIV and infant feeding: Guidelines for decision-makers.

2 The conditions below are based mainly on experiences in Africa with distribution of free formula in projects to prevent HIV transmission to infants and young children.

- Information on the health and nutritional status (especially growth) of infants fed with breast-milk substitutes should be collected and analysed to permit the monitoring of health outcomes (see section 7).
- Once begun, formula should continue to be supplied to infants for at least the first six months of life. After six months, infants can remain on formula or be given animal milk up to at least one year, and preferably up to two years. Special follow-on formulas[3] are not needed. Replacement milk should be made available to mothers who initiate breastfeeding and choose to stop it at any time in the first year of life.
- Countries that consider providing free or subsidized infant formula for HIV-positive women who choose not to breastfeed should also consider providing nutritional or related support to HIV-positive mothers who make other choices. Providing or subsidizing an option to all HIV-positive women is equitable, and creates an environment where the health system is not seen to be promoting one option over another. Moreover, it may prevent mothers from choosing replacement feeding because of the free formula, not because it can be implemented safely.

[3] A food intended for use as a liquid part of the diet for the infant from the sixth month and for young children.

This document provides the full list of updated HIV and infant feeding recommendations, and an explanation of key points. This information is aimed at programme managers and decision-makers, and those who will be in charge of revising national guidelines on prevention of mother-to-child transmission and infant and young child feeding.

For similar documents and more information on HIV and infant feeding, see http://www.who.int/child-adolescent-health/NUTRITION/HIV_infant.htm.

For further information, please contact:

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