

IBFAN Asia
Position Statement on
HIV and
Infant Feeding



Introduction

IBFAN Asia developed a “Position Statement on HIV and Infant Feeding” in the year 2001 and revised it in 2008 based on the scientific evidence available at that time including guidelines of WHO and other key international documents (1-6), envisaging that it would be useful for policy makers, programme managers, NGOs and international organizations working on maternal and child health and prevention of HIV infection. IBFAN Asia and BPNI also developed a consensus call to national child health programs in April 2008 titled “Drop mixed-feeding” to emphasize the

need to avoid mixed feeding, thereby reducing chances of mother to child transmission of HIV.(7)

In the last few years, a significant amount of new research evidence and programmatic experience on infant feeding in HIV+ women has emerged, which has led to a major shift in policies on infant feeding counseling to these women.

This has prompted IBFAN Asia to revise its earlier statement document incorporating current research findings, protocols, and guidelines.

Infant & Young Child Feeding Practices and Child Survival

The first two years of life provide a critical window of opportunity for ensuring children’s appropriate growth and development through optimal feeding. The Bellagio Child Survival Study Group, provides sufficient grounds to believe that estimated under-five deaths can be prevented by 13% with universalization of breastfeeding and additional 6% by appropriate complementary feeds(8).

According to the Global Strategy for Infant and Young Child Feeding adopted by the World Health Assembly in 2002, two thirds of all deaths under the age of five occur during the first year of life and are related to inappropriate feeding practices (6). Under-nutrition is rampant among infants and this can be prevented to a significant extent by optimal breastfeeding and timely appropriate and adequate complementary feeding.

A WHO study of infant feeding patterns and risk of death and hospitalization in the first half of infancy, confirms that risk of death is 10 times higher in non-breastfed infants and 2.5 times higher in partially-breastfed infants (9). Diarrhea and pneumonia are more common and more severe in children who are artificially fed and are responsible for many of these deaths. Diarrheal illness is more common in artificially-fed infants even in situations with adequate hygiene. Other acute infections, including otitis media, Haemophilus influenzae meningitis and urinary tract infection are less common and less severe in breastfed infants (10). Relevance of early initiation of breastfeeding to

prevent neonatal mortality is well established and approximately 22% of all neonatal deaths could be prevented if in all women; breastfeeding is initiated within one hour of birth (11).

A global ecological risk assessment of deaths and years of life lost due to sub optimal breastfeeding among children in the developing world revealed that as many as 1.45 million lives (117 million years of life) are lost due to sub optimal breastfeeding in developing countries (10). The World Health Organization in a systematic meta-analysis reported that subjects who were breastfed experienced lower mean blood pressure and total cholesterol, as well as higher performance in intelligence tests. Prevalence of overweight/obesity and type-2 diabetes was lower among breastfed subjects (12).

The preventive effect of exclusive breastfeeding on major childhood morbidities like diarrhea and pneumonia and also on mortality due to these diseases has been amply highlighted in the Lancet series on maternal and child undernutrition (13). The series concluded that:

1. The relative risk for all cause mortality for predominant (breastfeeding plus water) as compared to exclusive breastfeeding was 1.48 while for partial breastfeeding it was 2.85.
2. The relative risk of diarrhea mortality were 2.28 and 4.62 while pneumonia mortality were 1.75 and 2.49 for predominant (breastfeeding plus water) and partial breastfeeding as compared to exclusive breastfeeding.

HIV Transmission and Breastfeeding

Parents to child transmission of HIV may occur during pregnancy, delivery or postnatally. In the absence of any interventions to prevent or reduce transmission, about 5-10% of HIV-infected women pass the virus to their infants during pregnancy; between 10-20% during labour and delivery; and another 10-20% post-natally through breastfeeding over a period of 24 months(14). If we imagine 100 HIV+ve women, taking midpoint of ranges of transmission, one would expect 7 of their infants to be infected with HIV during pregnancy, another 15 during labour and delivery, and another 15 over a period of 2 years of breastfeeding; 63 infants would not get HIV infection, even if breastfed for 2 years and without any intervention in place to prevent transmission (15).

There are number of factors which affect transmission of HIV positive women to baby:

- 1. Immune status of the mother:** This is one of the most important predictors of HIV transmission risk at all times. Low CD4 T-lymphocyte counts have been associated with a greater risk of postnatal HIV transmission. In an analysis of pooled data from two West African trials, maternal CD4 cell count below 500 cells per mm³ in plasma close to the time of delivery was associated with a 3 fold increase in the risk of late postnatal transmission compared to women with CD4 cell count equal to or greater than 500 per mm³(16). In another meta-analysis of nine intervention trials, the risk of late postnatal acquisition of infection increased eightfold when CD4 cell counts were below 200 , and 3.7 fold where CD4 cell counts were between 200 and 500 per mm³(17).
- 2. RNA viral load in plasma and breast milk:** Increased maternal RNA viral load in plasma and breast milk are strongly associated with increased risk of transmission through breastfeeding. The rate of late postnatal transmission increased 2.6 fold for every one log₁₀ increase in plasma RNA viral load. In another study the risk of transmission increased fivefold when RNA virus had been detected in breast-milk samples taken at six weeks postpartum (18).
- 3. ART / ARV prophylaxis to HIV+ women and their babies:** There is now enough evidence that the risk of acquiring HIV infection through breast milk is significantly reduced by concurrent ARV interventions (ART to the mother for her own health, ARV prophylaxis to mother if ART is not indicated and/ ARV to the infant). (19, 20) ART/ARV intervention will improve CD4 count of the mother and decreases RNA viral load in the plasma and breast milk.
- 4. Type of Infant Feeding:** The chance of transmission of HIV is maximum if the baby receives mixed feeding i.e. breastfeeding and top feeding both. According to the studies, the risk of transmission is double in mixed feeding in comparison to exclusive breastfeeding (21).
- 5. Breast Conditions:** Cracked or bleeding nipples, mastitis or breast abscess is known to increase the risk of HIV transmission through breastfeeding. In an analysis comparing 92 infected infants with 187 infants who were infected at two years, maternal plasma RNA, mastitis and breast abscess were associated with late transmission. According to available data, 11-13 percent of HIV+ve women experience one or more breast pathologies during breastfeeding. The conditions are usually more common during the first weeks of lactation and they are preventable. (22)
- 6. Recent infection with HIV:** A woman who has been infected with HIV during pregnancy or while breastfeeding is more likely to transmit the virus to her infant. Viral load in maternal blood is high in first few weeks after new infection until the body begins to manufacture antibodies that suppress the virus.
- 7. Infection with Sexually Transmitted Diseases (STDs):** Maternal STD infection during pregnancy may increase the risk of HIV transmission to the unborn baby.
- 8. Obstetrical antenatal interventions:** Chorion villus aspiration, amniocentesis, amnioinfusion etc increase risk of HIV transmission.
- 9. Intervention during delivery:** ARM, episiotomy, instrumentation, and version increase HIV transmission.
- 10. Duration of breastfeeding:** The longer the duration of breastfeeding, the longer the infant is exposed to the risk of HIV infection, especially where breastfeeding is mixed with other foods/drinks.
- 11. Nutritional status of HIV + women:** A good nutritional status of mother is important as it boosts the mother's immune system and lessens progression of HIV.
- 12. Infant's oral health:** Breach in the mucosal linings of the oral cavity increases the risk of HIV transmission. Vigorous suction of the mouth after birth, cheilitis, stomatitis and oral thrush are some of the conditions carrying higher risk of transmission.

Infant Feeding Choices for HIV Positive Women

The fact that the HIV virus can pass through breastfeeding, and that breastfeeding has life saving implications, is the dilemma faced by all, including health personnel and women who are HIV positive, on what to choose to feed their babies: exclusive breastfeeding or replacement feeding.

In many developed countries mothers with HIV infection were counseled not to breastfeed to prevent HIV infection but it did not reduce child mortality, babies were dying of diarrhea and pneumonia. However in developing countries, where the majority of mothers with HIV infection live, complete avoidance of breastfeeds are often not feasible, resulting in mixed feeds and consequent increase risk of HIV. For HIV infected mother living in a poor household, it is important to consider carefully the risks related with not breastfeeding. Promotion of replacement formula feeding to prevent HIV infection in such situations might increase infant malnutrition, morbidity and mortality. Thus mortality among HIV exposed infants on replacement feeds has been high and has negated the decrease risk of HIV transmission in such babies (23, 24). Higher early infancy hospitalization was seen in replacement-fed infants born to HIV-infected mothers in

Pune, India (25). Balancing the risk of infants acquiring HIV infection through breast milk with the risk of death from causes other than HIV, particularly malnutrition and diarrhea is the key principle for choosing feeding option now. Moreover the last decade has seen accumulation of a significant amount of research evidence and programmatic experience on antiretroviral (ARV) prophylaxis to prevent mother to child transmission of HIV infection. Risk of acquiring HIV infection through breast milk is significantly reduced by concurrent ARV interventions (ART to the mother for her own health, ARV prophylaxis to mother and/or infant) (19,26).

Various research studies have shown that IYCF counseling through the PMTCT programme helps HIV-positive mothers to under take safer infant feeding practices (27-29). It has been found that to achieve success in exclusivity of replacement feeding, awareness campaigns are needed with adequate support for the mother (30-31). Various gaps have been identified in PMTCT knowledge and infant feeding practices which seem to affect appropriate infant feeding, thus giving way to practice of mixed feeding, and pre-lacteal feeding (32-35)

What are the International Guidelines?

WHO in their updated guidelines has given following key principles for guidance regarding HIV and infant feeding (36).

- **Balancing HIV prevention with protection from other causes of child mortality**
Infant feeding practices recommended to mothers known to be HIV-infected should support the greatest likelihood of HIV-free survival of their children and not harm the health of mothers.
- **Integrating HIV interventions into maternal and child health services**
National authorities should aim to integrate HIV testing, care and treatment interventions for all women into maternal and child health services. Such interventions

should include access to CD4 count testing and appropriate antiretroviral therapy or prophylaxis for the woman's health and to prevent mother-to-child transmission of HIV.

- **Setting national or sub-national recommendations for infant feeding in the context of HIV**
National or sub-national health authorities should decide whether health services will principally counsel and support mothers known to be HIV-infected to either:
 - ▶ *Breastfeed and receive ARV interventions, or*
 - ▶ *avoid all breastfeeding,*as the strategy that will most likely give infants the greatest chance of HIV-free survival The group concluded that a more directive approach to counseling

about infant feeding— in which practitioners make a clear recommendation for or against breastfeeding, rather than simply presenting different options without expressing an opinion – is fully consistent with an individual rights framework. In reaching this conclusion, they noted that there is no single approach to counseling and consent that is appropriate in all situations.

- **When antiretroviral drugs are not (immediately) available, breastfeeding may still provide infants born to HIV-infected women with a greater chance of HIV-free survival**

Every effort should be made to accelerate access to ARVs for both maternal health and also prevention of HIV transmission to infants. While ARV interventions are being scaled up, national authorities should not be deterred from recommending that HIV-infected mothers breastfeed as the most appropriate infant feeding practice in their setting.

- **Informing women known to be HIV-infected about infant feeding alternatives**

Pregnant women and mothers known to be HIV-infected should be informed of the infant feeding practice recommended by the national or sub-national authority to improve HIV-free survival of HIV-exposed infants and the health of HIV-infected mothers, and informed that there are alternatives that mothers might wish to adopt.

- **Providing services to specifically support women to appropriately feed their infants**

Skilled counselling and support in appropriate infant feeding practices and ARV interventions to promote HIV-free survival of infants should be available to all pregnant women and mothers.

- **Avoiding harm to infant feeding practices in the general population**

Counselling and support to mothers known to be HIV-infected, and health message to the general population, should be carefully delivered so as not to undermine optimal breastfeeding practices among the general population.

- **Advising women who is HIV uninfected or whose HIV status is unknown**

Mothers who are known to be HIV uninfected or whose HIV status is unknown should be counselled to exclusively breastfeed their infants for the first six months of life and then introduce complementary foods while

continuing breastfeeding for 24 months or beyond. Mothers whose status is unknown should be offered HIV testing. Mothers who are HIV uninfected should be counseled about ways to prevent HIV infection and about the services that are available, such as family planning, to help them to remain uninfected.

- **Investing in improvements in infant feeding practices in the context of HIV**

Governments, other stakeholders and donors should greatly increase their commitment and resources for implementation of the Global strategy for infant and young child feeding, the United Nations HIV and infant feeding framework for priority action and Guidance on the global scale-up of the prevention of MTCT in order to effectively prevent postnatal HIV infections, improve HIV-free survival and achieve relevant United Nations General Assembly Special Session goals.

- **Status of HIV and IF programmes and policies**

The UN framework for priority action on infant feeding and activities accords the highest priority to the development of a comprehensive national infant and young child feeding that includes HIV and infant feeding. The World Breastfeeding Trends Initiative assessment of 33 countries revealed that by 2010 only 12 countries had included infant feeding and HIV in their infant and young child feeding policy. All African countries except Cape Verde in general had adequate programmes for integrating infant feeding issues in HIV/AIDS than those in Asian or Latin American countries. Some Asian countries who have adequately included infant feeding & HIV in their policies are Bangladesh, China, Maldives, Mongolia, and Vietnam. Unfortunately India, Indonesia and Taiwan have not integrated infant feeding and HIV in their national policies. (37)



Recommendations

In view of latest WHO Guidelines (2010) on HIV and Infant Feeding, proved role of exclusive breastfeeding as an evidence based intervention to improve child survival, prevention of life threatening diseases later on in life and its' role in preventing transmission of HIV via breast milk to the child vis a vis mixed feeding; International Baby Food Action Network Asia (IBFAN Asia) and Breastfeeding Promotion Network of India (BPNI) make following recommendations:

Programs and Policies

1. Countries should develop a national policy on infant feeding and young child feeding that should include infant feeding by mother LHV along with an operational guideline to implement the programme.
2. The general principle of protecting, promoting and supporting breastfeeding should be followed irrespective of the HIV situation in a nation/state.
3. Priority should be given to policies and programs, which aim to prevent women of reproductive age, particularly adolescents and their partners from becoming infected with HIV in the first place.
4. Voluntary and confidential counseling and HIV testing should be made available for women of childbearing age and their partners. Investments should be made in health workers acquiring skills about HIV and testing HIV infection. This opportunity must be utilized for promoting exclusive breastfeeding during the first six months irrespective HIV status.
5. Infant feeding practices by HIV infected women should support the greatest likelihood of HIV free survival of their children & should not harm the health of the mother. Exclusive replacement feeding is not a viable strategy for majority of HIV exposed infants due to increased chances of non-HIV related morbidity and mortality negating the benefits of reduced HIV transmission. Thus, it cannot be recommended & promoted as the optimal infant feeding strategy for HIV-infected mothers
6. Breastfeeding with concurrent ARV intervention offers the greatest chance of HIV-free survival for babies born to HIV

positive mothers. Risk of acquiring HIV infection through breast milk is significantly reduced by concurrent ARV interventions (ART to the mother for her own health, ARV prophylaxis to mother and/or infant).

7. All HIV positive women should be informed about advantages of breastfeeding & individual pregnant women should also be informed about the alternatives which they might wish to adopt depending upon their individual circumstances.

Role and training of Health Professionals /Counselors

8. Infant feeding is influenced by community practices and family preferences. Therefore, attitudinal changes are required to empower mother to be able to exclusively and safely breastfeed. To ensure successful adherence to the practice of exclusive feeding (breastfeeding or replacement feeding) by HIV positive mothers, counseling based training of health workers in breastfeeding/lactation management as well as replacement feeding is necessary. The training must be up-to-date and skill oriented to help prevent breast pathologies like breast engorgement and cracked nipples as well to be able to manage these conditions if they arise. Since the pre-service and in-service curriculum of doctors and nurses, as well as those appointed counselors is found to be weak, national level programme budgets should be identified by the AIDS control organizations to ensure training for HIV and

Women known to be HIV-infected should give RF to their infants only when ALL of the following conditions are met:

1. safe water and sanitation are assured at the household level and in the community, and
2. the mother, or other caregiver can reliably afford to provide sufficient RF (milk), to support normal growth and development of the infant, and
3. the mother or caregiver can prepare it frequently enough in a clean manner so that it is safe and carries a low risk of diarrhoea and malnutrition, and
4. the mother or caregiver can, in the first six months exclusively give RF, and
5. the family is supportive of this practice, and
6. the mother or caregiver can access health care that offers comprehensive child health services.

Infant feeding counseling.

9. Counseling about the option of replacement feeding should be provided only to individual HIV positive women who have opted for replacement feeds and fulfills 6 criteria for replacement feeds.

Commercial Promotion of Substitutes

10. Emphasis must be placed on complete adherence to the International Code of Marketing of Breastmilk Substitutes (1981) and the relevant World Health Assembly resolutions (WHA 45.34, 1992; WHA 47.5, 1994; WHA 55.25, 2002; WHA 58.32, 2005, WHA 63.23, 2010). Countries should ensure a strict compliance of the international code / national legislation.

This includes a complete ban on any form of promotion in the health care system including sponsorship of lunch or other inducements, ban on donations or low cost supplies of commercial infant formula or infant foods within any part of the health care system. This protection assumes greater importance in light of the HIV situation. Allowing more babies to be mixed fed because of promotion of infant formula would be against any country's interests in child health. The commercial infant food industry has no role other than the one they had before the HIV-epidemic started: manufacturing and

making available through normal marketing channels, safe products that meet an existing demand, as well as providing scientifically accurate information about these products to health workers on request. Any practice aimed at artificially increasing that demand, including offering inducements to the health professionals, lobbying, and other interference in national, regional and international infant feeding policy making, is ethically abhorrent and should continue to be counteracted by all organizations concerned with maternal and infant health.

Research in the field of HIV and Infant feeding

11. Independent research is urgently needed to fill gaps in existing knowledge about transmission of HIV from mother to infant. Research should also address other health outcomes in infants of HIV-infected mothers provided with different feeding regimes and how to improve nutritional status of HIV-infected mothers and children.
12. Research teams doing studies on such issues should include expertise not only in virology and research design, but also in breastfeeding management. Those who have no commercial interest in the outcome should finance research on infant feeding in a transparent and independent manner. Financing of both research and program activity should not create 'conflicts of interest'.

References

1. Position statement on HIV and Infant feeding. BPNI New Delhi. February 2001.
2. Infant feeding options in the context of HIV, LINKAGES, 2004. Available at: www.linkagesproject.org
3. HIV and Infant Feeding Framework for Priority Action, WHO, 2003 Available at: <http://www.who.int/nutrition/publications/hiv aids/9241590777/en/index.html>
4. HIV and Infant Feeding: Guidelines for Decision-Makers, WHO, 2003. Available at: <http://www.who.int/nutrition/publications/hiv aids/9241591226/en/index.html>
5. HIV and Infant Feeding: A guide for health care managers and supervisors, WHO, 2003. Available at: http://www.who.int/maternal_child_adolescent/documents/9241591234/en/index.html
6. WHO/UNICEF Global Strategy for Infant and Young Child Feeding, World Health Organization (WHO), 2002. Available at: <http://www.who.int/nutrition/publications/infantfeeding/9241562218/en/index.html>
7. A consensus call to national child health programs "Drop mixed-feeding". BPNI/IBFAN Asia Information Sheet No. 26 (April 2008)
8. Jones G, Steketee RW, Black RE, Bhutta ZA, Morris SS. How many child deaths can we prevent this year. *Lancet* 2003; 362 (9377): 65-71.
9. Bahl R, Frost C, Kirkwood BR et al. Infant feeding patterns and risks of death and hospitalization in the first half of infancy: multicentre cohort study. *Bull WHO* 2005; 83:418-426.
10. Lauer JA, Betran AP, Barros AJ, de Onis M. Deaths and years of life lost due to suboptimal breast-feeding among children in the developing world: a global ecological risk assessment. *Public Health Nutr* 2006; 9(6):673-85.
11. Edmond KM., Zandoh C, Quigley MA., Amenga-Etego S, Owusu-Agyei S, Kirkwood BR. Delayed Breastfeeding Initiation Increases Risk of Neonatal Mortality. *Pediatrics* 2006; 117:380-386.
12. Evidence on the long-term effects of breastfeeding. Systematic review and meta-analysis. World Health Organization, 2007. Horta BL, Bahl R., Martines JC., Victora CG (Eds.) (Available at: http://www.who.int/child-adolescent-health/New_Publications/NUTRITION/ISBN_92_4_159523_0.pdf)
13. Black RE, Allen LH, Bhutta ZA et al. Maternal and child undernutrition: global and regional exposures and health consequences. *Lancet* 2008; 371(9608):243-260.
14. De Cock KM, Fowler MG, Mercier E, De Vincenzi I, Saba J, Hoff E, Alnwick DJ, Rogers M, Shaffer N. Prevention of mother-to-child HIV transmission in resource-poor countries; translation research into

- policy and practice. JAMA 2000;283:1175-1182.
15. Piwoz E, Ross J, HIV and Infant Feeding, Knowledge Gaps and challenges for the future, WABA HIV colloquium, Arusha, Tanzania 2002
 16. Leroy V, Karon JM, Alioum A, Ekpini ER et al. Postnatal transmission of HIV-1 after a maternal short-course zidovudine peripartum regimen in West Africa. AIDS 2003; 17(10):1493-1501
 17. Coovadia HM, Rollins NC, Bland RM et al. Mother-to-child transmission of HIV-1 infection during exclusive breastfeeding in the first 6 months of life: an intervention cohort study. Lancet 2007; 369(9567):1107-1116.
 18. Leroy V, Montcho C, Manigart O et al. Maternal plasma viral load, zidovudine and mother-to-child transmission of HIV-1 in Africa: DITRAMEANRS 049a trial. AIDS 2001; 15(4):517-522
 19. Kumwenda NI, Hoover DR, Mofenson LM et al. Extended Antiretroviral Prophylaxis to Reduce Breast-Milk HIV-1 Transmission. N Engl J Med 2008; 359:119-129.
 20. WHO: Antiretroviral drugs for treating pregnant women and preventing HIV infection in infants -2010 version. Available at: <http://www.who.int/hiv/pub/mtct/pmtct/en/>
 21. Coutoudis A, Pillay K, Kuhn L et al. South African Vitamin A Study Group. Method of feeding and transmission of HIV-1 from mothers to children by 15 months of age: prospective cohort study from Durban, South Africa. AIDS 2001; 15(3):379-387.
 22. Embree JE, Njenga S, Datta P et al. Risk factors for postnatal mother-child transmission of HI-1. AIDS 2000; 14(16):2535-2541.
 23. Coutoudis A, Pillay K, Spooner E et al. Morbidity in children born to women infected with human immunodeficiency virus in South Africa: Does mode of feeding matter? Acta Paediatr 2003; 92: 890-895.
 24. Thior I, Lockman S, Smeaton LM et al. Breastfeeding plus infant zidovudine prophylaxis for 6 months vs. formula feeding plus infant zidovudine for 1 month to reduce mother-to-child transmission in Botswana: a randomized trial: the MASHI study. JAMA 2006; 296:794-805.
 25. Suryavanshi N, Jonnalagadda S, Erande A et al. Infant feeding practices of HIV-positive mothers in India. J Nutr 2003; 133:1326-31
 26. Doherty T, Sanders D, Goga A, Jackson D. Implications of the new WHO guidelines on HIV and infant feeding for child survival in South Africa. Bulletin of World Health Organization 2011; 89: 62-67.
 27. Okong P, Namaganda PK, Bassani L et al. Maternal HIV status and infant feeding practices among Ugandan women. SAHARA: J Social Aspects HIV/AIDS 2010;7: 24-29.
 28. Katepa-Bwalya M, Kankasa C, Babaniyi O et al. Effect of using HIV and infant feeding counselling cards on the quality of counselling provided to HIV positive mothers: a cluster randomized controlled trial. Int Breastfeeding J 2011;6: 13.
 29. Goga AE, Doherty T, Jackson DJ et al. Infant feeding practices at routine PMTCT sites, South Africa: results of a prospective observational study amongst HIV exposed and unexposed infants-birth to 9 months. Int Breastfeeding J 2012;7: 4.
 30. Maru Y, Haidar J. Infant feeding practice of HIV positive mothers and its determinants in selected health institutions of Addis Ababa, Ethiopia. Ethiop J Health Dev 2009;23: 107-114.
 31. Mohammed A, Shehu AU, Aliyu AA et al. Infant Feeding options, practices and determinants of feeding practices among HIV seropositive mothers in Abuja, Nigeria. Niger Med J 2010;51: 14-17.
 32. Fadnes LT, Engebretsen IMS, Wamani H et al. Infant feeding among HIV-positive mothers and the general population mothers: comparison of two cross-sectional surveys in Eastern Uganda. BMC Public Health 2009;9:124.
 33. Oladokun RE, Brown BJ, Osinusi K. Infant-feeding pattern of HIV-positive women in a prevention of mother-to-child transmission (PMTCT) programme. AIDS Care 2010;22:1108-14.
 34. Ladzani R, Peltzer K, Mlambo MG et al. Infant-feeding practices and associated factors of HIV-positive mothers at Gert Sibande, South Africa. Acta Paediatr 2011;100: 538-42.
 35. Muluye D, Woldeyohannes D, Gizachew M et al. Infant feeding practice and associated factors of HIV positive mothers attending prevention of mother to child transmission and antiretroviral therapy clinic in Gondar town health institutions, Northwest Ethiopia. BMC Public Health 2012;12: 240.
 36. WHO: Rapid advice: infant feeding in the context of HIV, November 2009. Available at: <http://www.who.int/hiv/pub/paediatric/advice/en/>
 37. The World Breastfeeding Trends Initiative. The state of breastfeeding in 33 countries 2010. (<http://worldbreastfeedingtrends.org/report/The-state-of-breastfeeding-in-33-countries-2010.pdf>)

Editors

- Dr. J.P. Dadhich, *National Coordinator, Breastfeeding Promotion Network of India & Consultant, Breastfeeding and HIV - IBFAN Asia*
- Dr Praveen Kumar, *Associate Professor, Lady Harding Medical College, Delhi*
- Dr. Shoba Suri, *Senior Programme Officer, Breastfeeding Promotion Network of India*

Reviewers

- Dr. MMA Faridi, *Head of Department, University College of Medical Sciences & Guru Tegh Bahadur Hospital, Delhi*
- Prof. Prakash Sunder Shrestha, *Chairperson, Nepal Breastfeeding Promotion Forum (NEBPROF), Nepal*
- Dr. S.K. Roy, *Chairperson, Bangladesh Breastfeeding Foundation*

Designed by:

Amit Dahiya



International Baby Food Action Network (IBFAN), Asia

BP-33, Pitampura, Delhi 110 034 (INDIA)

Tel: +91-11-27343608, 42683059

Tel/Fax: +91-11-27343606

Email: info@ibfanasia.org, Website: www.ibfanasia.org

The International Baby Food Action Network (IBFAN) is the 1998 Right Livelihood Award Recipient. It consists of more than 200 public interest groups working around the world to save lives of infants and young children by working together to bring lasting changes in infant feeding practices at all levels. IBFAN aims to promote the health and well being of infants and young children and their mothers through protection, promotion and support of optimal infant and young child feeding practices. IBFAN works for the universal and full implementation of 'International Code of Marketing of Breastmilk Substitutes' and subsequent relevant World Health Assembly (WHA) resolutions.

IBFAN Asia/December 2012