

Session 4: The scientific basis for the “Ten steps to successful breastfeeding” for settings with high HIV prevalence

Note: This alternate Session 4 has been prepared for use in settings with high HIV prevalence. Some HIV-related content is included in the basic Session 4, since it is important to consider the effects of the epidemic in all settings. This version of the Session is identical to Session 4, except that additional content concerning HIV and infant feeding have been added, wherever useful.

Additional handouts, transparencies, and slides related to HIV and infant feeding have been prepared for this version of the Session. The additional handouts and transparencies are included with this version of the Session. The basic handouts and transparencies are presented with the basic Session and should be used with this one as well. The additional slides have been integrated into the basic slide set and included all together with this Session, for ease of use.

Objective

At the conclusion of this session, participants will be able to:

- Describe the scientific basis for the “Ten steps to successful breastfeeding”.
- Discuss current scientific evidence concerning the advantages and risks of breastfeeding versus replacement feeding in settings with high HIV prevalence and how this should influence the approach to the “Ten steps”.

Duration

Total: 90 minutes

Teaching methods

Lecture and discussion

Preparation for session

- Review the WHO document, *Evidence for the ten steps to successful breast-feeding*. Geneva, World Health Organization, 1998 (WHO/CHD/98.9) (http://www.who.int/child-adolescent-health/publications/NUTRITION/WHO_CHD_98.9.htm).
- Review all handouts and research summaries which follow the Session 4 outline as well as the additional handouts and summaries in this Session Plan. (Be sure to have the most up-to-date

statement from the Joint United Nations Programme on HIV/AIDS (UNAIDS) on HIV and infant feeding).

- Review video, *Delivery, Self Attachment*. (Time: 6 minutes). (See the *Course Guide* for information on how to order the video.)
- Review all PowerPoint slides and/or transparencies from both the basic Session Plan and this version and choose *for each step* about three slides or transparencies most appropriate for your audience. If desired, you may change the order of the slide/transparency presentation. Review the generic photo slides and use them and/or your own slides, to illustrate points as needed.
- Review locally available breastfeeding and HIV and infant feeding training courses and list them on an overhead or flipchart.
- If available, display poster of the Ten Steps where the speaker can easily refer to it.

Training materials

Summaries

Summaries of research studies

Note: Only the additional summaries of studies related to HIV are included with this session. The other summaries are included with the basic Session 4.

Handouts

Protecting, Promoting and Supporting Breast-feeding, The Special Role of Maternity Services, A Joint WHO/UNICEF Statement (booklet, same as Session 3).

4.1 (HIV) Presentation for Session 4 HIV

4.2 National policy on infant and young child feeding (for health institutions), Sultanate of Oman

4.3 Baby and Mother Friendly Hospital Programme, Ministry of Health, Mexico.

4.4 UNICEF UK Baby Friendly Initiative: Sample combined maternity/community services policy on breastfeeding

4.5 Acceptable medical reasons for supplementation (draft)

4.6 (HIV) Infant and young child feeding in the context of HIV

4.7 (HIV) Infant feeding policy: Rusape Hospital, Zimbabwe

Slides/Transparencies

4.1.1-4.11.7 and photo slides 4.a-4.z

4 Intro. 1 HIV, 4 Intro. 2 HIV, 4.3.5-11 HIV, and 4.6.10-14 HIV

The website featuring this Course contains links to the slides and transparencies for this session in two Microsoft PowerPoint files. The photo slides are included in the “slides” file in the order in which they are listed in the Session Plan. When possible, trainers should substitute appropriate photos taken locally or in situations that are similar to local conditions. The slides (in colour) can be used with a laptop computer and LCD projector, if available.

Alternatively, the transparencies (in black and white) can be printed out and copied on acetates and projected with an overhead projector. The photos are not included in the transparency file, as they do not reproduce well in black and white. The transparencies are also reproduced as the first handout for this session, with 6 transparencies to a page.

Other training materials

Flipchart
Video
Poster with the Ten Steps

References

Note: Some of the references related to HIV and infant feeding in the list below are included in the basic Session 4 reference list. Additional HIV-related references that have been added here are asterisked and have been placed at the beginning of this reference list.

* *Breastfeeding and HIV/AIDS Frequently Asked Questions (FAQ Sheet 1)*. Washington D.C., LINKAGES Project, Academy for Educational Development, Updated May 2001 (http://linkagesproject.org/FAQ_Html/FAQ_HIV.htm).

* *HIV and Infant Feeding Counselling: A Training Course. Participants' Manual*. Geneva, World Health Organization, 2000 (WHO/FCH/CAH/00.4).

* *HIV in Pregnancy: A Review*. Geneva, World Health Organization, 1999 (WHO/CHS/RHR/99.15).

* *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 Interagency Task Force Team on Mother-to-Child transmission of HIV, Geneva, 11-13 October 2000*. Geneva, World Health Organization, 2001.

* Piwoz EG, Llif PJ, Tavengwa N, Gavin L, Marinda E, Lunney K, Zunguza C, Nathoo KJ, the ZVITAMBO Study Group, Humphrey JH. An Education and Counseling Program for Preventing Breast-Feeding-Associated HIV Transmission in Zimbabwe: Design and Impact on Maternal Knowledge and Behavior. (Symposium: Women's Voices, Women's Choices: The Challenge of Nutrition and HIV/AIDS) *American Society for Nutritional Sciences*, 2005, 950-955.

* Richardson BA, John-Stewart GC, Hughes JP, Nduati R, Mbori-Ngacha D, Overbaugh J, Kreiss JK. Breast-milk Infectivity in Human Immunodeficiency Virus Type 1 – Infected Mothers. *JID*, 2003, 187:736-740.

* Ross JS, Labbok MH. Modeling the Effects of Different Infant Feeding Strategies on Young Child Survival and Mother-to-Child Transmission of HIV. *Am J Public Health*. 2004; 94(7):1174-80.

* Walley J, Whitter S, Nicholl A. Simplified antiviral prophylaxis with or and without artificial feeding to reduce mother-to-child transmission of HIV in low and middle income countries: modeling positive and negative impact on child survival. *Med Sci Monit*, 2001, 7(5): 1043-1051.

* *World Linkages: Zambia* (including “Country Profile” and description of the “Ndola Demonstration Project”), Washington D.C., LINKAGES Project, Academy for Educational Development, 2000 (<http://www.linkagesproject.org/media/publications/world-linkages/worldzambia.pdf>).

Albernaz E, Giugliani ERJ, Victora CG. Supporting breastfeeding: a successful experience. *J Hum Lact*, 1998, 14(4):283-285.

Breastfeeding and the use of water and teas. Division of Child Health and Development, Update, No. 9. Geneva, World Health Organization, reissued November 1997.

Cattaneo A, Buzzetti R. Effect on rates of breast feeding of training for the Baby Friendly Hospital Initiative. *BMJ*, 2001, 323:1358-1362.

Coutsoudis A, Kubendran P, Kuhn L, Spooner, E, Tsai W, Coovadia, HM. 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 Feb 16: 15(3):379-87.

Christensson K, Siles C, Moreno L, et al. Temperature, metabolic adaptation and crying in healthy full-term newborns cared for skin-to-skin or in a cot. *Acta Paediatr*, 1992, 81:481-493.

DeCarvalho M, Klaus MH, Merkatz RB. Frequency of breast-feeding and serum bilirubin concentration. *Am J Dis Child*, 1982, 136:737-738.

DeCock KM, Fowler MG, Mercier E et al. Prevention of mother-to-child HIV transmission in resource poor countries. *JAMA*, 2000, 238 (9):175-82.

DeChateau P, Wiberg B. Long term effect on mother-infant behavior of extra contact during the first hour postpartum. *Acta Paediatr*, 1977, 66:145-151.

Evidence for the ten steps to successful breastfeeding. Geneva, World Health Organization, 1998 (WHO/CHD/98.9).

Guidelines concerning the main health and socioeconomic circumstances in which infants have to be fed on breast-milk substitutes. In: *Thirty-Ninth World Health Assembly* [A39/8 Add. 1- 10 April 1986], pp. 122-135, Geneva, World Health Organization, 1992.

Guisse, J-M, Palda V, Westhoff C, Chan BKS, Helfand M, Lieu T. The effectiveness of primary care-based interventions to promote breastfeeding: Systematic evidence review and meta-analysis for the US preventive services task force. *Annals of Family Medicine*, 2003 1(2):70-78.

Haider R et al. Breast-feeding counselling in a diarrhoeal disease hospital. *Bulletin of the World Health Organization*, 1996, 74(2):173-179.

Haider R, Kabir I, Huttly S and Ashworth A. A training peer counselors to promote and support exclusive breastfeeding in Bangladesh. *J Hum Lact*, 2002, 18:7-12.

HIV and infant feeding: A policy statement developed collaboratively by UNAIDS, WHO and UNICEF. Geneva, UNAIDS, 1997.

HIV transmission through breastfeeding: A review of available evidence. Geneva, World Health Organization, 2004.

Jayathilaka AC. *A study in breastfeeding and the effectiveness of an intervention in a district of Sri Lanka*. [DM thesis]. Sri Lanka, University of Colombo, 1999.

Jelliffe DB, Jelliffe EFP. The role of the support group in promoting breastfeeding in developing countries. *J Trop Pediatr*, 1983, 29:244.

Kramer MS, Chalmers B, Hodnett E et al. Promotion of Breastfeeding Intervention Trial (PROBIT) A randomized trial in the Republic of Belarus. *JAMA*, 2001, 285:413-420.

Lu M, Lange L, Slusser W et al. Provider encouragement of breast-feeding: evidence from a national survey. *Obstetrics and Gynecology*, 2001, 97:290-295.

Martens PJ. Does Breastfeeding education affect nursing staff beliefs, exclusive breastfeeding rates, and Baby-Friendly Hospital Initiative compliance? The experiences of a small, rural Canadian hospital. *J Hum Lact*, 2000, 16:309-318.

Merten S et al. Do Baby-Friendly Hospitals Influence Breastfeeding Duration on a National Level? *Pediatrics*, 2005, 116: e702 – e708.

Morrow A, Guerrereo ML, Shultis J et al. Efficacy of home-based peer counselling to promote exclusive breastfeeding: a randomized controlled trial. *Lancet*, 1999, 353:1226-31.

Nielsen B, Hedegaard M, Thilsted S, Joseph A, Liliestrand J. Does antenatal care influence postpartum health behaviour? Evidence from a community based cross-sectional study in rural Tamil Nadu. South India. *British Journal of Obstetrics and Gynaecology*, 1998, 105: 697-703.

Nylander G, Lindemann R, Helsing E, Bendvold E. Unsupplemented breastfeeding in the maternity ward. *Acta Obstet Gynecol Scand*, 1991, 70: 205-209.

Philipp BL, Merewood A, Miller LW et al. Baby Friendly Hospital Initiative improves breastfeeding initiation rates in a US hospital setting. *Pediatrics*, 2001, 108:677-681.

Pipes PL. *Nutrition in Infancy and Childhood*. Boston, Massachusetts, Times Mirror/Mosby, 1989.

Powers NG, Naylor AJ, Wester RA. Hospital policies: crucial to breastfeeding success. *Semin Perinatol*, 1994, 18(6): 517-524.

Righard L, Alade MO. Effect of delivery room routines on success of first breast-feed. *Lancet*, 1990, 336: 1105-1107.

Righard L, Alade MO. Sucking technique and its effect on success of breastfeeding. *Birth*, 1992, 19(4):185-189.

- Saadeh RJ, Akre J. Ten steps to successful breast-feeding: a summary of the rationale and scientific evidence. *Birth*, 1996, 23(3):154-160.
- Saadeh RJ, ed. *Breast-Feeding: The Technical Basis and Recommendations for Action*. Geneva, World Health Organization, 1993.
- Savage-King FS. *Helping Mothers to Breastfeed*, Revised Edition. Nairobi, Kenya, African Medical Research Foundation, 1992.
- Soetjiningsih, Suraatmaja S. The advantages of rooming-in. *Pediatrica Indonesia*, 1986, 26:229-235.
- WHO/UNICEF/UNFPA/UNAIDS/World Bank/UNHCR/EFP/FAO/IAEA. *HIV and infant feeding: Framework for priority action*. Geneva, World Health Organization, 2003 (http://www.who.int/child-adolescent-health/publications/NUTRITION/HIV_IF_Framework.htm).
- Victora C, Behague D, Barros F et al. Pacifier use and short breastfeeding duration: cause, consequence, or coincidence? *Pediatrics*, 1997, 99:445-453.
- WHO Technical Consultation on Infant and Young Child Feeding, Themes, Discussion and Recommendations, WHO, Geneva, 13-17 March, 2000*. Geneva, World Health Organization, 2000 (WHO/NHD/00.8, WHO/FCH/CAH/00.22).
- WHO/UNICEF/UNFPA/UNAIDS. *HIV and infant feeding: A guide for health-care managers and supervisors* (revised). Geneva, World Health Organization, 2003 (http://www.who.int/child-adolescent-health/New_Publications/NUTRITION/HIV_IF_MS.pdf).
- WHO/UNICEF/UNFPA/UNAIDS. *HIV and infant feeding: guidelines for decision-makers* (revised). Geneva, World Health Organization, 2003 (http://www.who.int/child-adolescent-health/publications/NUTRITION/ISBN_92_4_159122_6.htm).
- Woolridge M. The “anatomy” of infant sucking. *Midwifery*, 1986, 2:164-171.
- Worthington-Roberts B, Williams SR. *Nutrition in Pregnancy and Lactation*, 5th Edition. St. Louis, MO, Mosby, 1993.
- Yamauchi Y, Yamanouchi I. Breast-feeding frequency during the first 24 hours after birth in full-term neonates. *Pediatrics*, 1990, 86 (2):171-175.
- Yamauchi Y, Yamanouchi I. The relationship between rooming-in/not rooming-in and breast-feeding variables. *Acta Paediatr Scand*, 1990, 79:1017-1022.

Outline

Content	Trainer's Notes
	<p>This session will review selected studies to illustrate the physiological and sociological basis for the Ten Steps. All steps are interrelated. The first 2 steps provide the foundation for implementing the remaining eight. Refer participants to the handout (booklet), "Promoting, Protecting, and Supporting Breast-feeding..."</p> <p>Invite participants to comment or ask questions during the presentation. Write down problems, barriers or solutions that come up during the presentation so they can be addressed in Session 5 (HIV). Try to allow some discussion during this presentation but postpone major discussions until Session 5 (HIV) due to time constraints.</p> <p>Mention that a mini-version of the presentation is reproduced in Handout 4.1 (HIV) and included in the participants' folder.</p> <p>Begin the session by briefly presenting some background information related to HIV and infant feeding, tailoring your brief overview to the needs of the participants.</p> <p>Show and describe the data in slides 4 Intro 1 HIV, 4 Intro 2 HIV, and 4 Intro 3 HIV.</p> <p>Refer the participants to Handout 4.6 (HIV). Summarize the information in this handout and/or present information of your own concerning HIV and infant feeding.</p>
<p>1. Step 1: Have a written breastfeeding policy that is routinely communicated to all health-care staff.</p>	<p><i>Slides</i></p> <p>4.1.4 Step 1</p> <p>4.1.5 Why have a policy?</p> <p>4.a Mention the "Joint Statement" and fact that it serves as the background document for BFHI and the "Ten Steps"</p> <p>4.1.6 What should it cover? In some HIV prevalent countries there has been a shift to an "infant feeding policy" that includes breastfeeding as well as replacement feeding guidelines and a</p>

Content	Trainer's Notes
	<p>support framework.</p> <p>4.1.7 How should it be presented? Pass out handout 4.7 (HIV) or your own policy example and discuss it. Policies need to be adapted to your own settings and should be based on the Ten Steps. Mention that issues related to development of appropriate policies for settings with high HIV prevalence will be discussed further in Session 5 (HIV).</p> <p>4.b Show photo of health professionals consulting a written policy during on-the-job training (optional).</p> <p>4.1.8 Graph: Rates of exclusive breast-milk feeds improved while in the birth hospital after implementing the Baby Friendly Hospital Initiative. (<i>Philipp et al. See summary.</i>)</p>
<p>2. Step 2: Train all health-care staff in the skills necessary to implement this policy.</p>	<p><i>Slides</i></p> <p>4.2.1 Step 2</p> <p>4.c Show photo of health professionals attending a classroom session (optional).</p> <p>4.d. Show photo of group discussion during training (optional).</p> <p>4.2.2 Areas of knowledge to be included in staff education (may ask participants to answer before showing)</p> <p>4.2.3 Additional topics for training in the context of HIV</p> <p>4.2.4 Hospital staff breastfeeding training had a significant effect on exclusive breastfeeding rate at discharge, which increased from 41% to 77%. (<i>Cattaneo et al. See summary.</i>)</p> <p>4.2.5 In several studies health professionals trained in breastfeeding counselling provided counselling and/or trained support groups to assist mothers in a variety of circumstances (prenatally, postnatally, after admission for diarrhoea). In each of the studies there was a significant increase in exclusive breastfeeding, when compared to the</p>

Content	Trainer's Notes
	<p>control group. (<i>WHO/CAH. See summary</i>)</p> <p>4.2.6 Ask participants to give examples of health professionals - other than perinatal staff - who influence breastfeeding success. Consider other staff in the institution coming into contact with mothers such as cleaning staff, clerks, or other specialty groups.</p>
<p>3. Step 3: Inform all pregnant women about the benefits and management of breastfeeding.</p>	<p><i>Slides</i></p> <p>4.3.1 Step 3</p> <p>4.3.2 Antenatal education content (can be adapted to reflect individual country needs). In settings where there is high HIV there are additional considerations in the antenatal period including voluntary counselling and testing for HIV. After learning one's HIV status there are additional areas for counselling during pregnancy.</p> <p>4.e-f Show photos of an antenatal group class and individual counselling (optional).</p> <p>4.3.3 Antenatal care can significantly impact breastfeeding practices related to colostrum feeding and early breastfeeding initiation within 2 hours of birth. (<i>Nielsen et al. See summary.</i>)</p> <p>4.3.4 Antenatal education can lead to significant increases in initiation rates (23%) and duration of short-term breastfeeding (up to 3 months) (39%), as shown by a meta-analysis of studies of education and support. (<i>Guise et al. See summary.</i>)</p> <p>4.3.5 (HIV) Why test for HIV in pregnancy? There are several reasons why a woman may want to consider learning her HIV status. Mothers may want to be assured of privacy and confidentiality before testing as in some cases there is stigma associated with having a test.</p> <p>4.3.6 (HIV) Replacement feeding. It's important to review the definition of "replacement</p>

Content	Trainer's Notes
	<p>feeding” in the context of HIV.</p> <p>4.3.7 (HIV) Risk of mother-to-child transmission of HIV. This graphic illustrates the risk of mother-to-child transmission of HIV if there is a 20% prevalence of HIV infection among mothers, 20% transmission rate during pregnancy/delivery and 15% transmission rate during breastfeeding. With these rates, for every 100 mothers, 20 would be HIV+, 4 of their babies infected during pregnancy and delivery, and 3 of their babies infected via breastfeeding.</p> <p>4.3.8 (HIV) HIV positive mothers need to be counselled concerning the risks of breastfeeding versus replacement feeding. The WHO recommendations on infant feeding for HIV+ women presents key issues to consider.</p> <p>4.3.9 – 11 (HIV) These slides summarize the key recommendations to give if a mother’s HIV status is unknown, if her HIV status is negative, if her HIV status is positive, if her HIV status is positive and she decides to breastfeed, and if her HIV status is positive and she chooses replacement feeding. These recommendations can help guide health providers at the facility that counsel pregnant women facing decisions concerning how they will feed their infants. WHO has recently published a series of counseling cards that can be very useful in this process. Health providers need to receive special training through the WHO HIV and infant feeding course or something similar, to gain the knowledge and skills needed for this work.</p>
<p>4. Step 4: Help mothers initiate breastfeeding within a half-hour of birth.</p>	<p><i>Slides</i></p> <p>4.4.1 Step 4 (may have discussions relating to timing of first breastfeed. Could elaborate on issues relating to this step, i.e. drugs during delivery, cesarean sections, etc.)</p> <p>4.4.2 The revised BFHI Global Criteria interpret this step as “Place babies in skin-to-skin contact with their mothers immediately following birth for at least an</p>

Content	Trainer's Notes
	<p>hour and encourage mothers to recognize when their babies are ready to breastfeed, offering help if needed.” Discuss reasons for this change, including research on the time it takes babies to start breastfeeding without assistance (see photos 4h-j and slide 4.4.8 below).</p> <p>4.4.3 Why encourage early initiation? The points in this list are illustrated in the following transparencies.</p> <p>4.4.4 How to encourage early initiation?</p> <p>4.g-j Show one or more photos illustrating early initiation. The first photo shows a nurse assisting a mother to position her baby just after delivery. The next three photos illustrate how the baby will find the mother’s nipple and begin to suck on his own, if time is allowed for this process.</p> <p>4.4.5 Graph: Study demonstrates how contact within the first hour after delivery increased duration of breastfeeding at 3 months. (<i>DeChateau et al. See summary.</i>)</p> <p>4.4.6 Graph: Study concluded that skin-to-skin care as compared to care in a bed during the unique period just following birth is associated with higher body and skin temperatures and more rapid metabolic adaptation. Maternal body is an efficient heat source for the baby. (<i>Christensson et al. See summary.</i>)</p> <p>4.4.7 Table: This summary of when immune factors are produced in the infant demonstrates the importance of colostrum and mature milk’s role in compensating for the relative absence of immunity in the infant. (<i>Worthington-Roberts</i>)</p> <p>4.4.8 Graph: Study concluded that in order to promote successful suckling patterns naked infants should be left undisturbed on their mothers’ abdomens until the first suckling is accomplished and the infants’ efforts to take the breast actively should be promoted. (<i>Righard et al. See summary.</i>)</p>

Content	Trainer's Notes
	<p>Show “<i>Delivery, Self Attachment</i>” video if available, as an alternative to photo slides g, h, and i. Note the infant’s suckling pattern when there is no interference with the mother and newborn.</p>
<p>5. Step 5: Show mothers how to breastfeed and how to maintain lactation even if they are separated from their infants.</p>	<p><i>Slides</i></p> <p>4.5.1 Step 5</p> <p>4.5.2 Quote (Woolridge)</p> <p>4.k-1 Show photos of staff showing mothers how to breastfeed (optional)</p> <p>4.5.3 Graph: Study demonstrates that if at hospital discharge a mother is breastfeeding her infant with good technique, or if 5-10 minutes of instruction time is spent correcting faulty technique, the duration of breastfeeding is almost doubled compared to mothers discharged with uncorrected faulty breastfeeding technique. (<i>Righard et al. See summary.</i>)</p> <p>4.5.4 Graph: Breastfeeding initiation occurred among 75% of women who were encouraged to breastfeed compared to only 43% who were not encouraged to breastfeed by a health professional. (<i>Lu et al. See summary.</i>)</p> <p>4.5.5 Graph: breastfeeding duration rates were significantly higher among mothers whose babies roomed in postpartum and whose mothers received breastfeeding guidance during the hospital stay compared to mothers whose babies did not room in and did not receive any breastfeeding guidance while in the hospital. (<i>Perez-Escamilla et al. See summary.</i>)</p> <p>4.5.6 Supply and demand</p> <p>4.m Show photo of milk expression.</p>
<p>6. Step 6: Give newborn infants no food or drink other than breast milk unless medically indicated.</p>	<p><i>Slides</i></p> <p>4.6.1 Step 6</p> <p>4.n Show photo of breast-milk substitute and water bottles, <u>not</u> to be given unless</p>

Content	Trainer's Notes
	<p>medically indicated (<i>optional</i>).</p> <p>4.0 Show photo of nurse giving baby a bottle (<u>not</u> appropriate unless medically indicated) (<i>optional</i>).</p> <p>4.6.2 Graph: This study suggests a correlation between a more “physiologic” start of breastfeeding and the overall duration of the lactation period. (<i>Nylander et al. See summary.</i>)</p> <p>4.6.3 To address the concern that colostrum alone is “not enough”, this graphic illustrates that newborn and infant stomach capacities are perfectly matched to the amount of colostrum (about 200 ml/24 hours at day two) and mature milk (about 800-900 ml/24 hours at 1 year).</p> <p>4.6.4 Impact of routine formula supplementation</p> <p>4.6.5 This study shows that early introduction of a bottle is inversely associated with breastfeeding duration. (<i>Perez-Escamilla et al. See summary.</i>)</p> <p>4.6.6 The data in this table shows there is no need for water supplementation for infants exclusively breastfed no matter what temperature and humidity, as reflected in normal urine osmolarity.</p> <p>4.6.7 There are rare exceptions during which infants may require other fluids or food in addition to, or in place of, breast milk.</p> <p>4.6.8- 10 Acceptable medical reasons for supplementation (draft) (Distribute Handout 4.5). If questions arise concerning HIV and breastfeeding refer participants to Handout 4.6 (HIV): Infant and young child feeding in the context of HIV.)</p> <p>4.6.11 (HIV) Risk factors for HIV transmission during breastfeeding. Review the risk factors for both mothers and infants that affect the likelihood of HIV transmission during breastfeeding.</p> <p>4.6.12 (HIV) Graph (<i>Richardson et al. 2003</i>) One important maternal risk factor for HIV transmission through breastfeeding is maternal blood viral load. If the viral load is low the risk is 4 times less than if it is</p>

Content	Trainer's Notes
	<p>high.</p> <p>4.6.13 (HIV) Graph (<i>Coutsoudis et al 2001</i>). Shows the probability of an HIV positive test at various months of age among babies that were never breastfed (always fed breast-milk substitutes), exclusively breastfed, and mixed fed. The probability of an HIV positive test is higher for mixed feeders at all months of age. It is lowest for babies exclusively breastfed until six months and then in lower for those never breastfed. (<i>Coutsoudis et al. See summary.</i>)</p> <p>4.6.14 (HIV) (<i>Piwoz et al. 2005</i>) A recent HIV and infant feeding trial in Zimbabwe (ZVITAMBO) included an education and counseling program for new mothers in Harare. Mothers of unknown or negative HIV status or HIV positive mothers who chose to breastfeed were counseled to exclusively breastfeed and practice other elements of “safer breastfeeding”.</p> <p>4.6.15 (HIV) Graph (<i>Piwoz et al. in preparation, 2005</i>) Exposure to the safer breastfeeding intervention in the above study in Zimbabwe was associated with reduced postnatal transmission (through breastfeeding) among mothers who did not know their status. The more educational exposures to the concepts of “safer breastfeeding” that the women received, the greater the likelihood that they followed the recommendations and the less chance of HIV transmission to their infants. This type of education and counseling can begin both during pregnancy and before discharge, as well as during postnatal contacts after the mothers return home.</p>
<p>7. Step 7: Practice rooming-in—allow mothers and infants to stay together—24 hours a day.</p>	<p><i>Slides</i></p> <p>4.7.1 Step 7</p> <p>4.7.2 Definition (Describe bedding-in if relevant. “Bedding-in” is when infant and mother stay in the same bed.)</p>

Content	Trainer's Notes
	<p>4.p-q Show one or more photos of rooming-in and bedding-in.</p> <p>4.7.3 Why institute rooming-in? (points discussed in slides to follow)</p> <p>4.7.4 Graph: Positive impact of rooming-in policy on prevention of infectious disease when infants rooming-in were compared to newborns not rooming-in with their mothers. (<i>Soetjningsih et al. See summary.</i>)</p> <p>4.7.5 Graph: Positive effect of infants rooming-in with their mothers on frequency of breastfeeding in the first 6 days of life compared to infants not rooming-in. (<i>Yamauchi et al. See summary.</i>)</p>
<p>8. Step 8: Encourage breastfeeding on demand.</p>	<p><i>Slides</i></p> <p>4.8.1 Step 8</p> <p>4.8.2 Definition of “on-demand”</p> <p>4.8.3 Why feed on demand?</p> <p>4.r-s Show one or more photos of feeding on demand</p> <p>4.8.4 Table: Study demonstrates the positive impact of on-demand, frequent breastfeeding (number of times during the first 24 hours) on bilirubin levels of 6 day-old full-term healthy infants. (<i>Yamauchi et al. See summary.</i>)</p> <p>4.8.5 This data shows that the greater the frequency of feeds, the lower the level of serum bilirubin. (<i>DeCarvalho et al. See summary.</i>)</p>
<p>9. Step 9: Give no artificial teats or pacifiers (also called dummies and soothers) to breastfeeding infants.</p>	<p><i>Slides</i></p> <p>4.9.1 Step 9</p> <p>4.t Show photo of various nipples/teats – should <u>not</u> be used (optional).</p> <p>4.u Show photo of various pacifiers/dummies/soothers – should <u>not</u> be used (optional).</p> <p>4.9.2 Alternatives to artificial teats or pacifiers</p>

Content	Trainer's Notes
	<p>4.9.3 Illustration of cup feeding. It is recommended to use an ordinary small 50-100 ml glass or polypropylene plastic “cup”. The rim of the “cup” should be smooth and not sharp and the “cup” should be boiled or sterilised.</p> <p>4.v Show photo of cup feeding (optional).</p> <p>4.9.4 Early weaning was associated with daily pacifier use even when confounding factors were accounted for. (<i>Victoria et al. See summary.</i>)</p> <p>Stress the fact that no artificial teats or pacifiers are recommended for any babies, including those with HIV positive mothers who have chosen not to breastfeed.</p>
<p>10. Step 10: Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from hospital or clinic.</p>	<p><i>Slides</i></p> <p>4.10.1 Step 10</p> <p>4.10.2 Quote</p> <p>4.10.3 Examples of support</p> <p>4.10.4 Summary of types of breastfeeding support. A “doula” is a woman caregiver of another woman who provides support during the perinatal period. HIV positive mothers need extra support. Health providers and volunteers need training in how to provide this support. If HIV+ mothers decided to breastfeed they must do so exclusively and safely. If they replacement feed this also must be done exclusively and safely.</p> <p>4.w-z Show photos illustrating various types of mother support (home visiting by nurse, mother support groups, and mothers dancing in a community breastfeeding meeting).</p> <p>4.10.5 Trained peer counselors positively effected the duration of exclusive breastfeeding. (<i>Haider et al. See summary.</i>)</p> <p>4.10.6 Home visits improved exclusive breastfeeding at 2 weeks and 3 months.</p>

Content	Trainer's Notes
	<i>(Morrow et al. See summary.)</i>
<p>11. Effects of combined steps</p>	<p>In addition, it is highly effective to combine the steps since by applying all steps or some in combination the hospital and the administration obtain better results. This is illustrated in many of the previous studies presented above. To further elaborate on this point the following series of slides are presented.</p> <p>4.11.1 In a randomised trial in Belarus 17,000 mother-infant pairs, with mothers intending to breastfeed, were followed for 12 months. In 15 control hospitals & associated polyclinics that provide care following discharge, staff members were asked to continue their usual practices. In 16 experimental hospitals & associated polyclinics staff received baby-friendly training & support. <i>(Kramer et al. See summary.)</i></p> <p>4.11.2 Differences following intervention between control and intervention hospitals</p> <p>4.11.3 Effect of baby-friendly changes on breastfeeding at 3 & 6 months</p> <p>4.11.4 Impact of baby-friendly changes on selected health conditions</p> <p>4.11.5 In a study in Switzerland, data was analyzed for 2861 infants aged 0 – 11 months in 145 health facilities. Breastfeeding data was compared with both the progress towards Baby-friendly status of each hospital and the degree to which designated hospitals were successfully maintaining the Baby-friendly standards. <i>(Merten et al. See summary.)</i></p> <p>4.11.6 The proportion of babies exclusively breastfed for 5 months for those born in Baby-friendly hospitals compared to those born elsewhere.</p> <p>4.11.7 The median duration of exclusive breastfeeding for babies born in Baby-friendly hospitals if the hospital showed</p>

Content	Trainer's Notes
	good compliance with the 10 steps, and if it did not. This result illustrates the importance of maintaining Baby-friendly standards.
12. Conclusion	Acknowledge differences in opinion, perceived barriers, and innovative solutions relating to this subject matter. These areas of interest will be covered in the remaining sessions.

Summaries of research studies presented during Session 4

Note: The summaries for the slides that are asterisked (featuring additional information related to HIV and infant feeding) are presented in this Session Plan. The summaries for the rest of the slides may be found in the basic Session Plan 4.

<i>Slide:</i>	<i>Study:</i>
4.1.5	Philipp BL, Merewood A, Miller LW et al. Baby Friendly Hospital initiative improves breastfeeding initiation rates in a US hospital setting. <i>Pediatrics</i> , 2001, 108:677-681.
4.2.4	Cattaneo A, Buzzetti R. Effect on rates of breast feeding of training for the Baby Friendly Hospital Initiative. <i>BMJ</i> , 2001, 323:1358-1362.
4.2.5	Albernaz E, Giugliani ERJ, Victora CG. Supporting breastfeeding: a successful experience. <i>Journal of human lactation</i> , 1998, 14(4):283-285.
	Haider R et al Breast-feeding counselling in a diarrhoeal disease hospital. <i>Bulletin of the World Health Organization</i> , 1996, 74(2):173-179
4.3.3	Nielsen B, Hedegaard M, Thilsted S, Joseph A and Liliestrand J. Does antenatal care influence postpartum health behaviour? Evidence from a community based cross-sectional study in rural Tamil Nadu, South India. <i>British Journal of Obstetrics and Gynaecology</i> , 1998, 105: 697-703.
4.3.4	Guisse, J-M, Palda V, Westhoff C, Chan BKS, Helfand M, and Lieu T. The effectiveness of primary care-based interventions to promote breastfeeding: Systematic evidence review and meta-analysis for the US preventive services task force. <i>Annals of Family Medicine</i> , 2003, 1(2):70-78.
*4.3.7 (HIV)	WHO. HIV and infant feeding counselling: A training course. Participants' Manual. Geneva, Switzerland, 2000 (WHO/FCH/CAH/00.4).
4.4.4	DeChateau P and Wiberg B. Long term effect on mother-infant behavior of extra contact during the first hour postpartum. <i>Acta Paediatr</i> , 1977, 66:145-151.
4.4.5	Christensson K, Siles C, Moreno L, Belaustequi A, De La Fuente P, Lagercrantz H, Puyol P, and Winberg J. Temperature, metabolic adaptation and crying in health full-term newborns cared for skin-to-skin or in a cot. <i>Acta Paediatr</i> , 1992, 81: 488-93.
4.4.7	Righard L and Alade MO. Effect of delivery room routines on success of first breastfeed. <i>Lancet</i> , 1990, 336: 1105-1107.
4.5.3	Righard L & Alade O. Sucking technique and its effect on success of breastfeeding. <i>Birth</i> , 1992,19 (4): 185-189.
4.5.4	Lu M, Lange L, Slusser W et al. Provider encouragement of breast-feeding: Evidence from a national survey. <i>Obstetrics and Gynecology</i> , 2001, 97:290-295.

- 4.5.5 Perez-Escamilla R, Segura-Millan S, Pollitt E, Dewey KG. Effect of the maternity ward system on the lactation success of low-income urban Mexican women. *Early Hum Dev*, 1992, 31 (1): 25-40.
- 4.6.2 Nylander G, Lindemann R, Helsing E, Bendvold E Unsupplemented breastfeeding in the maternity ward. *Acta Obstet Gynecol Scand*, 1991, 70; 205-209.
- 4.6.5 Perez-Escamilla, Sergura-Millan S, Pollitt E, Dewey KG. Determinants of lactation performance across time in an urban population from Mexico. *Soc Sci Med*, 1993, 37 (8): 1069-1078.
- *4.6.12 (HIV) Richardson BA, John-Stewart GC, Hughes JP, Nduati R, Mbori-Ngacha D, Overbaugh J and Kreiss JK, Breast-milk Infectivity in Human Immunodeficiency Virus Type 1 – Infected Mothers. *JID*, 2003, 187:736-740.
- *4.6.13 (HIV) Coutoudis A, Kubendran P, Kuhn L, Spooner, E, Tsai W, Coovadia HM.; 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 Feb 16: 15(3):379-87.
- *4.6.14 (HIV) Piwoz EG, Llif PJ, Tavengwa N, Gavin L, Marinda E, Lunney K, Zunguza C, Nathoo KJ, the ZVITAMBO Study Group, and Humphrey JH, An Education and Counseling Program for Preventing Breast-Feeding-Associated HIV Transmission in Zimbabwe: Design and Impact on Maternal Knowledge and Behavior. (Symposium: Women’s Voices, Women’s Choices: The Challenge of Nutrition and HIV/AIDS) *American Society for Nutritional Sciences*, 2005, 950-955.
- 4.7.4 Soetjiningsih and Suraatmaja S. The advantages of rooming-in. *Pediatrica Indonesia*, 1986, 26:229-235.
- 4.7.5 Yamauchi Y and Yamanouchi I. The relationship between rooming-in/not rooming-in and breast-feeding variables. *Acta Paediatr Scand*, 1990, 1017-1022.
- 4.8.4 Yamauchi Y and Yamanouchi I. Breast-feeding frequency during the first 24 hours after birth in full-term neonates. *Pediatrics*, 1990, 86 (2):171-175.
- 4.8.5 De Carvalho M, Klaus MH, Merkatz RB. Frequency of breast-feeding and serum bilirubin concentration. *Am J Dis Child*, 1982, Aug;136(8):737-8.
- 4.9.4 Victora C, Behague D, Barros F et al. Pacifier use and short breastfeeding duration: cause, consequence, or coincidence? *Pediatrics*, 1997, 99:445-453.
- 4.10.5 Haider R, Kabir I, Huttly S and Ashworth. Training peer counselors to promote and support exclusive breastfeeding in Bangladesh. *J Hum Lact*, 2002, 18:7-12.
- 4.10.6 Morrow A, Guerrereo ML, Shultis J, et al. Efficacy of home-based peer counselling to promote exclusive breastfeeding: a randomised controlled trial. *Lancet*, 1999;353:1226-31.
- 4.11.1-4 Kramer MS, Chalmers B, Hodnett ED et al. Promotion of Breastfeeding Intervention Trial (PROBIT): a randomized trial in the Republic of Belarus. *JAMA*, 2001, Jan 24-31; 285(4):413-20.
- 4.11.5-7 Merten S et al. Do Baby-Friendly Hospitals Influence Breastfeeding Duration on a National Level? *Pediatrics*, 2005, 116: e702 – e708.

Risk of mother-to-child transmission of HIV

Refers to slide 4.3.7 (HIV)

Reference: WHO, UNICEF, USAID. *HIV and infant feeding counselling tools: Reference guide*. Geneva, World Health Organization, 2005.

The explanation of the data presented in this slide is summarized from page 14 of this reference.

- This example assumes that the prevalence of HIV infection among women is 20% (or 20 out of 100 women).
- The mother-to-child transmission rate during pregnancy and delivery is about 20-25%. A rate of 20% is used in this example. Thus about 4 of the infants of the 20 HIV-positive mothers are likely to be infected during pregnancy or delivery.
- The transmission rate through breastfeeding is about 5-20% of the infants who are breastfed by mothers who are HIV-positive. For this example we use a rate of 15%, taken as an average. 15% of 20 is 3. Thus about 3 of the infants of HIV-positive mothers are likely to be infected by breastfeeding.

In summary:

- In a group of 100 mothers in an area with a 20% prevalence of HIV infection among mothers, only about 3 babies are likely to be infected with HIV through breastfeeding.
- 97% of the babies would not get HIV in this way.

Risk factor: Maternal blood viral load

Refers to Slide 4.6.12 (HIV)

Reference: Richardson BA, John-Stewart GC, Hughes JP, Nduati R, Mbori-Ngacha D, Overbaugh J, Kreiss JK. Breast-milk Infectivity in Human Immunodeficiency Virus Type 1 – Infected Mothers. *JID*, 2003, 187:736-740.

Method: Human immunodeficiency virus type 1 (HIV-1) is transmitted through blood, genital secretions, and breast milk. The probability of heterosexual transmission of HIV-1 per sex act is .0003-.0015, but little is known regarding the risk of transmission per breast-milk exposure. The researchers evaluated the probability of breast-milk transmission of HIV-1 per litre of breast milk ingested and per day of breast-feeding in a study of children born to HIV-1-infected mothers.

Findings: The probability of breast-milk transmission of HIV-1 was .00064 per litre ingested and .00028 per day of breast-feeding. Breast-milk infectivity was significantly higher for mothers with more advanced disease, as measured by prenatal HIV-1 RNA plasma levels and CD4 counts.

Conclusion: The study provides the first quantitative estimates of breast-milk infectivity per litre of milk ingested. The probability of HIV-1 infection per litre of breast milk ingested by an infant is similar in magnitude to the lowest probability of heterosexual transmission of HIV-1 per unprotected sex act in adults.

Feeding pattern and risk of HIV transmission

Refers to Slide 4.6.13 (HIV)

Reference: Coutoudis A, Kubendran P, Kuhn L, Spooner, E, Tsai W, Coovadia HM. 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, Feb 16; 15(3):379-87.

Objective: To determine the risk of HIV transmission by infant feeding modality.

Design and setting: A prospective study in two hospitals in Durban, South Africa.

Participants: A total of 551 HIV-infected pregnant women enrolled in a randomized trial of vitamin A.

Interventions: Women self-selected to breastfeed or formula feed after being counselled. Breastfeeders were encouraged to practice exclusive breastfeeding for 3-6 months.

Main outcome measures: Cumulative probabilities of detecting HIV over time were estimated using Kaplan-Meier methods and were compared in three groups: 157 formula-fed (never breastfed); 118 exclusively breastfed for 3 months or more; and 276 mixed breastfed.

Results: The three feeding groups did not differ in any risk factors for transmission, and the probability of detecting HIV at birth was similar. Cumulative probabilities of HIV detection remained similar among never and exclusive breastfeeders up to 6 months: 0.194 (95% CI 0.136-0.260) and 0.194 (95% CI 0.125-0.274), respectively, whereas the probabilities among mixed breastfeeders soon surpassed both groups reaching 0.261 (95% CI 0.205-0.319) by 6 months. By 15 months, the cumulative probability of HIV infection remained lower among those who exclusively breastfed for 3 months or more than among other breastfeeders (0.247 versus 0.359).

Conclusion: Infants exclusively breastfed for 3 months or more had no excess risk of HIV infection over 6 months than those never breastfed. These findings, if confirmed elsewhere, can influence public health policies on feeding choices available to HIV-infected mothers in developing countries.

HIV & infant feeding study in Zimbabwe

Refers to Slide 4.6.14 (HIV)

Reference: Piwoz EG, Liff PJ, Tavengwa N, Gavin L, Marinda E, Lunney K, Zunguza C, Nathoo KJ, the ZVITAMBO Study Group, Humphrey JH. An Education and Counseling Program for Preventing Breast-Feeding-Associated HIV Transmission in Zimbabwe: Design and Impact on Maternal Knowledge and Behavior. (Symposium: Women's Voices, Women's Choices: The Challenge of Nutrition and HIV/AIDS) *American Society for Nutritional Sciences*, 2005, 950-955.

Method: International guidance on HIV and infant feeding has evolved over the last decade. In response to these changes, the researchers designed, implemented, and evaluated an education and counseling program for new mothers in Harare, Zimbabwe. The program was implemented within the ZVITAMBO trial, in which 14,110 mother-baby pairs were enrolled within 96 hours of delivery and were followed at 6 weeks, 3 months and then 3-month intervals. Mothers were tested for HIV at delivery but were not required to learn their test results. Infant feeding patterns were determined using data provided up to 3 months. Formative research was undertaken to guide the design of the program that included group education, individual counselling, videos and brochures. The program was introduced over a 2-month period: 11,362, 1311, and 1437 women were enrolled into the trial before, during and after this period. Exclusive breastfeeding was recommended for mothers of unknown or negative HIV status, and for HIV-positive mothers who chose to breastfeed. A questionnaire assessing HIV knowledge and exposure to the program was administered to 1996 mothers enrolling after the program was initiated.

Findings: HIV knowledge improved with increasing exposure to the program. Mothers who enrolled when the program was being fully implemented were 70% more likely to learn their HIV status early (<3 months) and 8.4 times more likely to exclusively breastfeed than mothers who enrolled before the program began.

Conclusion: Formative research aided in the design of a culturally sensitive intervention. The intervention increased relevant knowledge and improved feeding practices among women who primarily did not know their HIV status.

Handout 4.1 (HIV)

Presentation for Session 4 (HIV)

Global summary of the HIV & AIDS epidemic, 2005

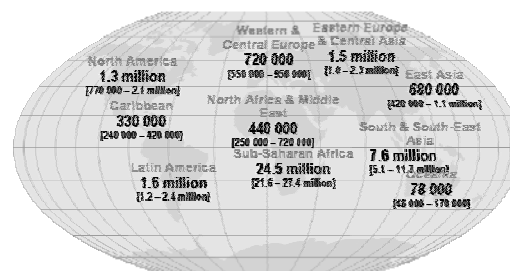
Number of people living with HIV/AIDS	Total	38.6 million (33.4 – 46.0 million)
	Adults	36.3 million (31.4 – 43.4 million)
	Women	17.3 million (14.8-20.6 million)
People newly infected with HIV in 2005	Total	4.1 million (3.4-6.2 million)
	Adults	3.6 million (3.0-5.4 million)
	Children under 15	540 000 (420 000 - 670 000)
AIDS deaths in 2005	Total	2.8 million (2.4-3.3 million)
	Adults	2.4 million (2.0-2.8 million)
	Children under 15	380 000 (290 000 - 500 000)

The ranges around the estimates in this table define the boundaries within which the actual numbers lie, based on the best available information.

From: UNAIDS/WHO. AIDS Epidemic Update, 2005.

Slide 4.Intro.1 (HIV)

Adults and children estimated to be living with HIV, 2005



Total: 38.6 (33.4 – 46.0) million

From: UNAIDS/WHO. AIDS Epidemic Update, 2005

Slide 4.Intro.2 (HIV)

Regional HIV statistics for women, 2005

Region	# of women (15-49) living with HIV	% of HIV+ adults who are women
Sub-Saharan Africa	13.5 million	57%
N. Africa & Middle East	220,000	47%
S. & S.A. Asia	1.9 million	26%
East Asia	160,000	18%
Oceania	39,000	55%
Latin America	580,000	32%
Caribbean	140,000	50%
Eastern Europe & Central Asia	440,000	28%
W. & C. Europe	190,000	27%
North America	300,000	25%
TOTAL:	17.5 million	46%

From: UNAIDS/WHO. AIDS Epidemic Update, 2005.

Slide 4.Intro.3 (HIV)

Ten steps to successful breastfeeding

Step 1. Have a written breastfeeding policy that is routinely communicated to all health care staff.

A JOINT WHO/UNICEF STATEMENT (1989)

Transparency 4.1.4

Breastfeeding policy

Why have a policy?

- Requires a course of action and provides guidance
- Helps establish consistent care for mothers and babies
- Provides a standard that can be evaluated

Transparency 4.1.5

Breastfeeding policy

What should it cover?

- At a minimum, it should include:
 - The 10 steps to successful breastfeeding
 - An institutional ban on acceptance of free or low cost supplies of breast-milk substitutes, bottles, and teats and its distribution to mothers
 - A framework for assisting HIV positive mothers to make informed infant feeding decisions that meet their individual circumstances and then support for this decision
- Other points can be added

Transparency 4.1.6

Breastfeeding policy

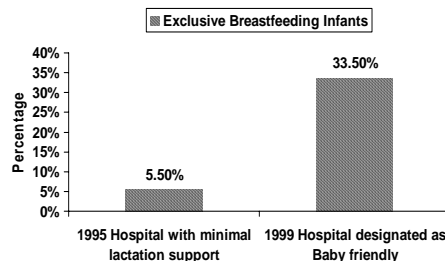
How should it be presented?

It should be:

- Written in the most common languages understood by patients and staff
- Available to all staff caring for mothers and babies
- Posted or displayed in areas where mothers and babies are cared for

Transparency 4.1.7

Step 1: Improved exclusive breast-milk feeds while in the birth hospital after implementing the Baby-friendly Hospital Initiative



Adapted from: Philipp BL, Merewood A, Miller LW et al. Baby-friendly Hospital Initiative improves breastfeeding initiation rates in a US hospital setting. *Pediatrics*, 2001, 108:677-681.

Transparency 4.1.8

Ten steps to successful breastfeeding

Step 2. Train all health-care staff in skills necessary to implement this policy.

A JOINT WHO/UNICEF STATEMENT (1989)

Transparency 4.2.1

Areas of knowledge

- Advantages of breastfeeding
- Risks of artificial feeding
- Mechanisms of lactation and suckling
- How to help mothers initiate and sustain breastfeeding
- How to assess a breastfeed
- How to resolve breastfeeding difficulties
- Hospital breastfeeding policies and practices
- Focus on changing negative attitudes which set up barriers

Transparency 4.2.2

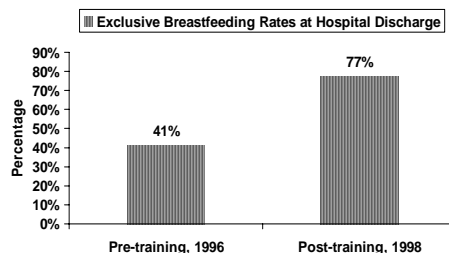
Additional topics for BFHI training in the context of HIV

Train all staff in:

- Basic facts on HIV and on Prevention of Mother-to-Child Transmission (PMTCT)
- Voluntary testing and counselling (VCT) for HIV
- Locally appropriate replacement feeding options
- How to counsel HIV + women on risks and benefits of various feeding options and how to make informed choices
- How to teach mothers to prepare and give feeds
- How to maintain privacy and confidentiality
- How to minimize the "spill over" effect (leading mothers who are HIV - or of unknown status to choose replacement feeding when breastfeeding has less risk)

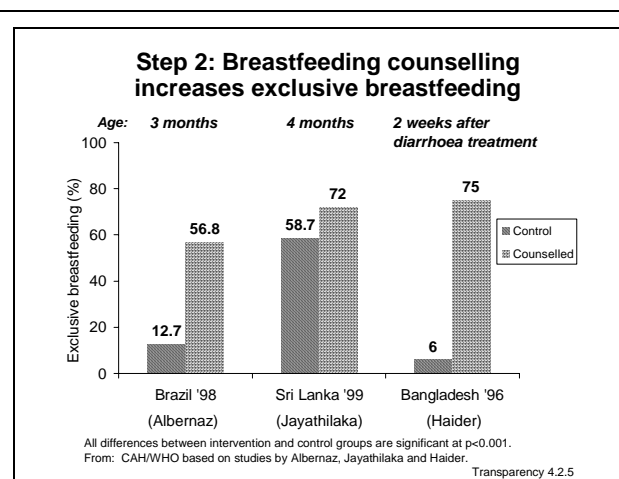
Transparency 4.2.3

Step 2: Effect of breastfeeding training for hospital staff on exclusive breastfeeding rates at hospital discharge



Adapted from: Cattaneo A, Buzzetti R. Effect on rates of breast feeding of training for the Baby Friendly Hospital Initiative. *BMJ*, 2001, 323:1358-1362.

Transparency 4.2.4



Which health professionals other than perinatal staff influence breastfeeding success?

Transparency 4.2.6

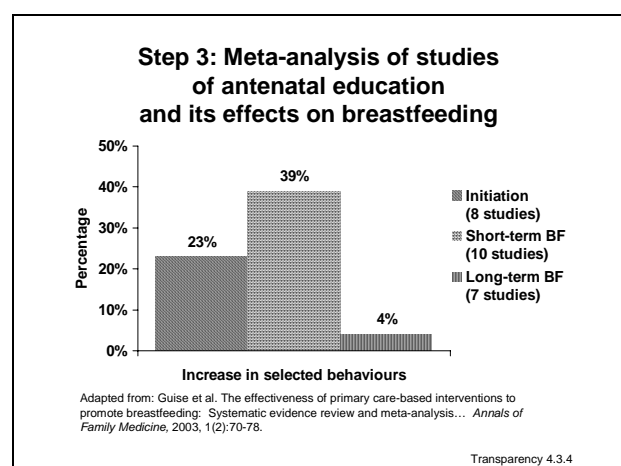
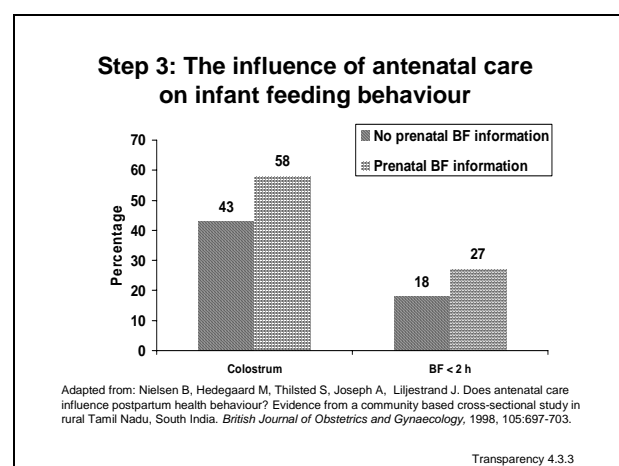
Ten steps to successful breastfeeding

Step 3. Inform all pregnant women about the benefits of breastfeeding.

A JOINT WHO/UNICEF STATEMENT (1989)

Transparency 4.3.1

- ### Antenatal education should include:
- Benefits of breastfeeding
 - Early initiation
 - Importance of rooming-in (if new concept)
 - Importance of feeding on demand
 - Importance of exclusive breastfeeding
 - How to assure enough breastmilk
 - Risks of artificial feeding and use of bottles and pacifiers (soothers, teats, nipples, etc.)
 - Basic facts on HIV
 - Prevention of mother-to-child transmission of HIV (PMTCT)
 - Voluntary testing and counselling (VCT) for HIV and infant feeding counselling for HIV+ women
 - Antenatal education should not include group education on formula preparation
- Transparency 4.3.2



Why test for HIV in pregnancy?

- If HIV negative
 - Can be counseled on prevention and risk reduction behaviors
 - Can be counseled on exclusive breastfeeding
- If HIV positive
 - Can learn ways to reduce risk of MTCT in pregnancy, at delivery and during infant feeding
 - Can better manage illnesses and strive for "positive" living
 - Can plan for safer infant feeding method and follow-up for baby
 - Can decide about termination (if a legal option) and future fertility
 - Can decide to share her status with partner /family for support



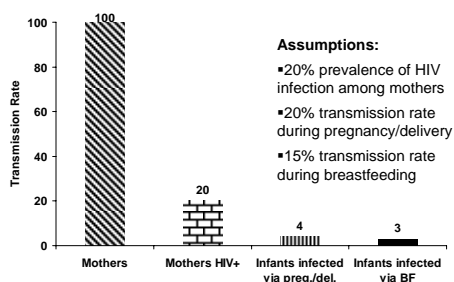
Slide 4.3.5 (HIV)

Definition of replacement feeding

- The process, in the context of HIV/AIDS, of feeding a child who is not receiving any breast milk with a diet that provides all the nutrients the child needs.
- During the first six months this should be with a suitable breast-milk substitute - commercial formula, or home-prepared formula with micronutrient supplements.
- After six months it should preferably be with a suitable breast-milk substitute, and complementary foods made from appropriately prepared and nutrient-enriched family foods, given three times a day. If suitable breast-milk substitutes are not available, appropriately prepared family foods should be further enriched and given five times a day.

Slide 4.3.6 (HIV)

Risk of mother-to-child transmission of HIV



Based on data from *HIV & infant feeding counselling tools: Reference Guide*. Geneva, World Health Organization, 2005.

Slide 4.3.7 (HIV)

WHO recommendations on infant feeding for HIV+ women

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.

To minimize HIV transmission risk, breastfeeding should be discontinued as soon as feasible, taking into account local circumstances, the individual woman's situation and the risks of replacement feeding (including infections other than HIV and malnutrition).

WHO, *New data on the prevention of mother-to-child transmission of HIV and their policy implications. Conclusions and recommendations*. WHO technical consultation ... Geneva, 11-13 October 2000. Geneva, World Health Organization, 2001, p. 12.

Slide 4.3.8 (HIV)

HIV & infant feeding recommendations

If the mother's HIV status is unknown:

- Encourage her to obtain HIV testing and counselling
- Promote optimal feeding practices (exclusive BF for 6 months, introduction of appropriate complementary foods at about 6 months and continued BF to 24 months and beyond)
- Counsel the mother and her partner on how to avoid exposure to HIV

Adapted from WHO/Linkages, *Infant and Young Child Feeding: A Tool for Assessing National Practices, Policies and Programmes*. Geneva, World Health Organization, 2003 (Annex 10, p. 137).

Slide 4.3.9 (HIV)

If the mother's HIV status is negative:

- Promote optimal feeding practices (see above)
- Counsel her and her partner on how to avoid exposure to HIV

If the mother's HIV status is positive:

- Provide access to anti-retroviral drugs to prevent MTCT and refer her for care and treatment for her own health
- Provide counselling on the risks and benefits of various infant feeding options, including the acceptability, feasibility, affordability, sustainability and safety (AFASS) of the various options.
- Assist her to choose the most appropriate option
- Provide follow-up counselling to support the mother on the feeding option she chooses

Ibid.

Slide 4.3.10 (HIV)

Ten steps to successful breastfeeding

Step 4. Help mothers initiate breastfeeding within a half-hour of birth.

A JOINT WHO/UNICEF STATEMENT (1989)

Transparency 4.4.1

New interpretation of Step 4 in the revised BFHI Global Criteria (2006):

“Place babies in skin-to-skin contact with their mothers immediately following birth for at least an hour and encourage mothers to recognize when their babies are ready to breastfeed, offering help if needed.”

Transparency 4.4.2

Early initiation of breastfeeding for the normal newborn

Why?

- Increases duration of breastfeeding
- Allows skin-to-skin contact for warmth and colonization of baby with maternal organisms
- Provides colostrum as the baby's first immunization
- Takes advantage of the first hour of alertness
- Babies learn to suckle more effectively
- Improved developmental outcomes

Transparency 4.4.3

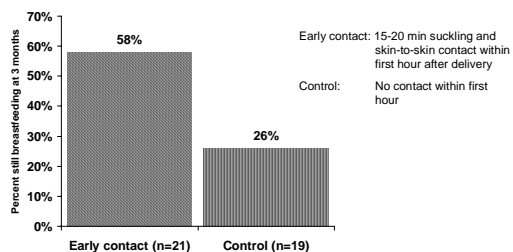
Early initiation of breastfeeding for the normal newborn

How?

- Keep mother and baby together
- Place baby on mother's chest
- Let baby start suckling when ready
- Do not hurry or interrupt the process
- Delay non-urgent medical routines for at least one hour

Transparency 4.4.4

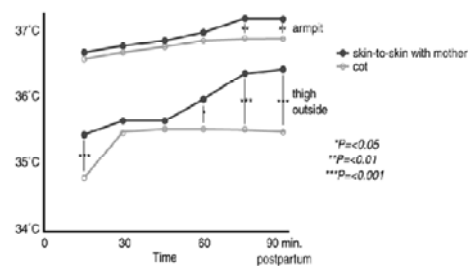
Impact on breastfeeding duration of early infant-mother contact



Adapted from: DeChateau P, Wiberg B. Long term effect on mother-infant behavior of extra contact during the first hour postpartum *Acta Paediatr*, 1977, 66:145-151.

Transparency 4.4.5

Temperatures after birth in infants kept either skin-to-skin with mother or in cot



Adapted from: Christensson K et al. Temperature, metabolic adaptation and crying in healthy full-term newborns cared for skin-to-skin or in a cot. *Acta Paediatr*, 1992, 81:490.

Transparency 4.4.6

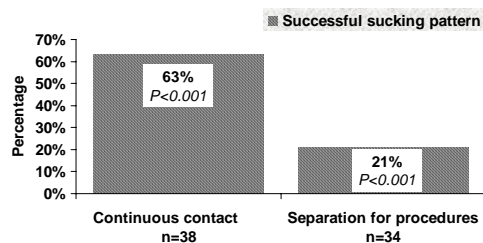
Protein composition of human colostrum and mature breast milk (per litre)

Constituent	Measure	Colostrum (1-5 days)	Mature Milk (>30 days)
Total protein	G	23	9-10.5
Casein	mg	1400	1870
α-Lactalbumin	mg	2180	1610
Lactoferrin	mg	3300	1670
IgA	mg	3640	1420

From: Worthington-Roberts B, Williams SR. *Nutrition in Pregnancy and Lactation, 5th ed.* St. Louis, MO, Times Mirror/Mosby College Publishing, p. 350, 1993.

Transparency 4.4.7

Effect of delivery room practices on early breastfeeding



Adapted from: Righard L, Alade O. Effect of delivery room routines on success of first breastfeed. *Lancet*, 1990, 336:1105-1107.

Transparency 4.4.8

Ten steps to successful breastfeeding

Step 5. Show mothers how to breastfeed and how to maintain lactation, even if they should be separated from their infants.

A JOINT WHO/UNICEF STATEMENT (1989)

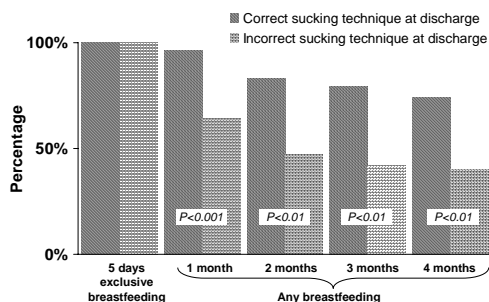
Transparency 4.5.1

“ Contrary to popular belief, attaching the baby on the breast is not an ability with which a mother is [born...]; rather it is a learned skill which she must acquire by observation and experience. ”

From: Woolridge M. The "anatomy" of infant sucking. *Midwifery*, 1986, 2:164-171.

Transparency 4.5.2

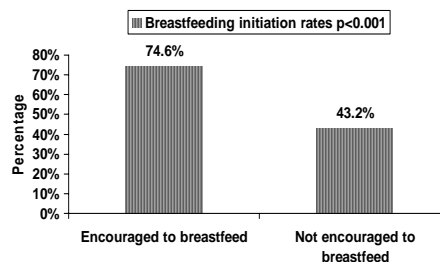
Effect of proper attachment on duration of breastfeeding



Adapted from: Righard L, Alade O. (1992) Sucking technique and its effect on success of breastfeeding. *Birth* 19(4):185-189.

Transparency 4.5.3

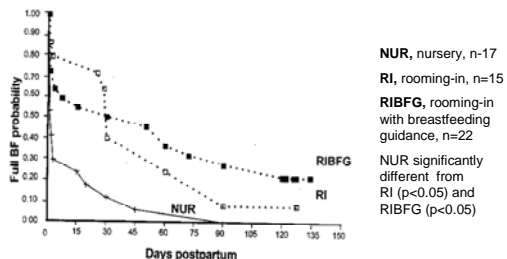
Step 5: Effect of health provider encouragement of breastfeeding in the hospital on breastfeeding initiation rates



Adapted from: Lu M, Lange L, Slusser W et al. Provider encouragement of breastfeeding: Evidence from a national survey. *Obstetrics and Gynecology*, 2001, 97:290-295.

Transparency 4.5.4

Effect of the maternity ward system on the lactation success of low-income urban Mexican women



From: Perez-Escamilla R, Segura-Millan S, Pollitt E, Dewey KG. Effect of the maternity ward system on the lactation success of low-income urban Mexican women. *Early Hum Dev.*, 1992, 31 (1): 25-40.

Transparency 4.5.5

Supply and demand

- Milk removal stimulates milk production.
- The amount of breast milk removed at each feed determines the rate of milk production in the next few hours.
- Milk removal must be continued during separation to maintain supply.

Transparency 4.5.6

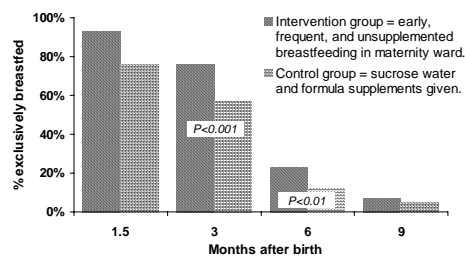
Ten steps to successful breastfeeding

Step 6. Give newborn infants no food or drink other than breast milk unless medically indicated.

A JOINT WHO/UNICEF STATEMENT (1989)

Transparency 4.6.1

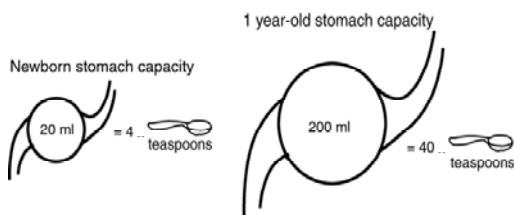
Long-term effects of a change in maternity ward feeding routines



Adapted from: Nylander G et al. Unsupplemented breastfeeding in the maternity ward: positive long-term effects *Acta Obstet Gynecol Scand*, 1991, 70:208.

Transparency 4.6.2

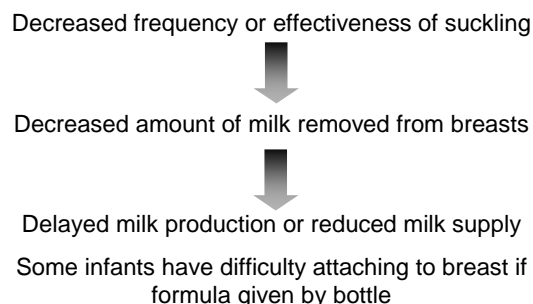
The perfect match: quantity of colostrum per feed and the newborn stomach capacity



Adapted from: Pipes PL. *Nutrition in Infancy and Childhood*, Fourth Edition St. Louis, Times Mirror/Mosby College Publishing, 1989.

Transparency 4.6.3

Impact of routine formula supplementation



Transparency 4.6.4

Determinants of lactation performance across time in an urban population from Mexico

- Milk came in earlier in the hospital with rooming-in where formula was not allowed
- Milk came in later in the hospital with nursery (p<0.05)
- Breastfeeding was positively associated with early milk arrival and inversely associated with early introduction of supplementary bottles, maternal employment, maternal body mass index, and infant age.

From: Perez-Escamilla et al. Determinants of lactation performance across time in an urban population from Mexico. *Soc Sci Med*, 1993, (8):1069-78.

Transparency 4.6.5

Summary of studies on the water requirements of exclusively breastfed infants

Country	Temperature °C	Relative Humidity %	Urine osmolarity (mOsm/l)
Argentina	20-39	60-80	105-199
India	27-42	10-60	66-1234
Jamaica	24-28	62-90	103-468
Peru	24-30	45-96	30-544

Note: Normal range for urine osmolarity is from 50 to 1400 mOsm/kg.

From: *Breastfeeding and the use of water and teas*. Division of Child Health and Development Update No. 9. Geneva, World Health Organization, reissued, Nov. 1997.

Transparency 4.6.6

Medically indicated

There are rare exceptions during which the infant may require other fluids or food in addition to, or in place of, breast milk. The feeding programme of these babies should be determined by qualified health professionals on an individual basis.

Transparency 4.6.7

Acceptable medical reasons for supplementation or replacement

Infant conditions:

- Infants who cannot be BF but can receive BM include those who are very weak, have sucking difficulties or oral abnormalities or are separated from their mothers.
- Infants who may need other nutrition in addition to BM include very low birth weight or preterm infants, infants at risk of hypoglycaemia, or those who are dehydrated or malnourished, when BM alone is not enough.
- Infants with galactosemia should not receive BM or the usual BMS. They will need a galactose free formula.
- Infants with phenylketonuria may be BF and receive some phenylalanine free formula.

UNICEF, revised BFHI course and assessment tools. 2006

Transparency 4.6.8

Maternal conditions:

- BF should stop during therapy if a mother is taking anti-metabolites, radioactive iodine, or some anti-thyroid medications.
- Some medications may cause drowsiness or other side effects in infants and should be substituted during BF.
- BF remains the feeding choice for the majority of infants even with tobacco, alcohol and drug use. If the mother is an intravenous drug user BF is not indicated.
- Avoidance of all BF by HIV+ mothers is recommended when replacement feeding is acceptable, feasible, affordable, sustainable and safe. Otherwise EBF is recommended during the first months, with BF discontinued when conditions are met. Mixed feeding is not recommended.

Transparency 4.6.9

Maternal conditions (continued):

- If a mother is weak, she may be assisted to position her baby so she can BF.
- BF is not recommended when a mother has a breast abscess, but BM should be expressed and BF resumed once the breast is drained and antibiotics have commenced. BF can continue on the unaffected breast.
- Mothers with herpes lesions on their breasts should refrain from BF until active lesions have been resolved.
- BF is not encouraged for mothers with Human T-cell leukaemia virus, if safe and feasible options are available.
- BF can be continued when mothers have hepatitis B, TB and mastitis, with appropriate treatments undertaken.

Transparency 4.6.10

Risk factors for HIV transmission during breastfeeding*

Mother

- Immune/health status
- Plasma viral load
- Breast milk virus
- Breast inflammation (mastitis, abscess, bleeding nipples)
- New HIV infection

Infant

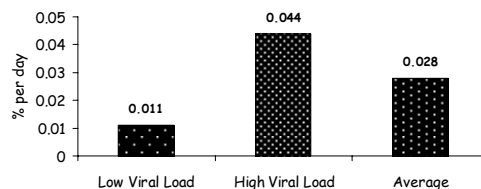
- Age (first month)
- Breastfeeding duration
- Non-exclusive BF
- Lesions in mouth, intestine
- Pre-maturity, low birth weight
- Genetic factors – host/virus

* Also referred to as postnatal transmission of HIV (PNT)

HIV transmission through breastfeeding: A review of available evidence. Geneva, World Health Organization, 2004 (summarized by Ellen Piwoz).

Transparency 4.6.11 (HIV)

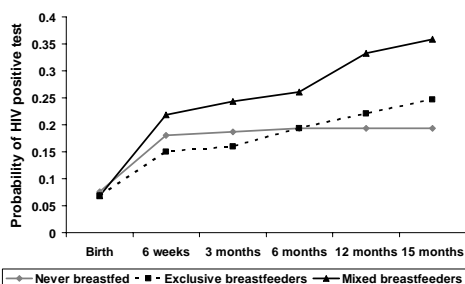
Risk factor: Maternal blood viral load Risk of HIV transmission per day of BF in Nairobi, Kenya (%)



From: Richardson et al, Breast-milk Infectivity in Human Immunodeficiency Virus Type 1 – Infected Mothers, *JID*, 2003 187:736-740 (adapted by Ellen Piwoz)

Transparency 4.6.12 (HIV)

Feeding pattern & risk of HIV transmission



From: Coutousidis et al. 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 Feb 16; 15(3):379-87.

Transparency 4.6.13 (HIV)

HIV & Infant feeding study in Zimbabwe

Elements of safer breastfeeding:

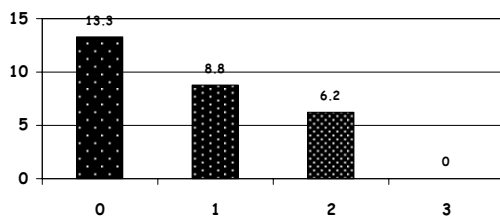
- Exclusive breastfeeding
- Proper positioning & attachment to the breast to minimize breast pathology
- Seeking medical care quickly for breast problems
- Practicing safe sex

Piwoz et al. An education and counseling program for preventing breastfeeding-associated HIV transmission in Zimbabwe: Design & Impact on Maternal Knowledge & Behavior *Amer. Soc. for Nutr Sci* 950-955 (2005)

Transparency 4.6.14 (HIV)

Exposure to safer breastfeeding intervention was associated with reduced postnatal transmission (PNT) by mothers who did not know their HIV status

Cumulative PNT HIV transmission (%) according to reported exposure to SBF program



N=365; p=0.04 in test for trend. Each additional intervention contact was associated with a 38% reduction in PNT after adjusting for maternal CD4

Piwoz et al. in preparation, 2005.

Transparency 4.6.15 (HIV)

Ten steps to successful breastfeeding

Step 7. Practice rooming-in — allow mothers and infants to remain together — 24 hours a day.

A JOINT WHO/UNICEF STATEMENT (1989)

Transparency 4.7.1

Rooming-in

A hospital arrangement where a mother/baby pair stay in the same room day and night, allowing unlimited contact between mother and infant

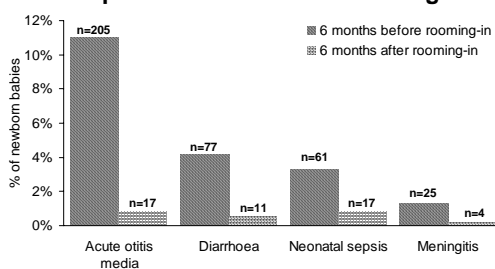
Transparency 4.7.2

Rooming-in Why?

- Reduces costs
- Requires minimal equipment
- Requires no additional personnel
- Reduces infection
- Helps establish and maintain breastfeeding
- Facilitates the bonding process

Transparency 4.7.3

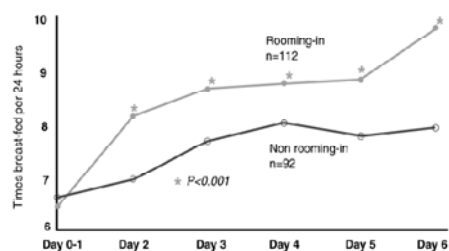
Morbidity of newborn babies at Sanglah Hospital before and after rooming-in



Adapted from: Soetjningsih, Suraatmaja S. The advantages of rooming-in. *Pediatrica Indonesia*, 1986, 26:231.

Transparency 4.7.4

Effect of rooming-in on frequency of breastfeeding per 24 hours



Adapted from: Yamauchi Y, Yamanouchi I. The relationship between rooming-in/not rooming-in and breastfeeding variables. *Acta Paediatr Scand*, 1990, 79:1019.

Transparency 4.7.5

Ten steps to successful breastfeeding

Step 8. Encourage breastfeeding on demand.

A JOINT WHO/UNICEF STATEMENT (1989)

Transparency 4.8.1

Breastfeeding on demand:

Breastfeeding whenever the baby or mother wants, with no restrictions on the length or frequency of feeds.

Transparency 4.8.2

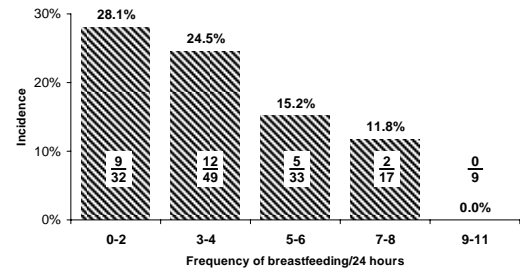
On demand, unrestricted breastfeeding *Why?*

- Earlier passage of meconium
- Lower maximal weight loss
- Breast-milk flow established sooner
- Larger volume of milk intake on day 3
- Less incidence of jaundice

From: Yamauchi Y, Yamanouchi I. Breast-feeding frequency during the first 24 hours after birth in full-term neonates. *Pediatrics*, 1990, 86(2):171-175.

Transparency 4.8.3

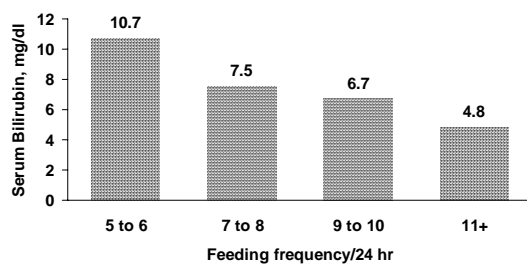
Breastfeeding frequency during the first 24 hours after birth and incidence of hyperbilirubinaemia (jaundice) on day 6



From: Yamauchi Y, Yamanouchi I. Breast-feeding frequency during the first 24 hours after birth in full-term neonates. *Pediatrics*, 1990, 86(2):171-175.

Transparency 4.8.4

Mean feeding frequency during the first 3 days of life and serum bilirubin



From: DeCarvalho et al. *Am J Dis Child* 1982; 136:737-738

Transparency 4.8.5

Ten steps to successful breastfeeding

Step 9. Give no artificial teats or pacifiers (also called dummies and soothers) to breastfeeding infants.

A JOINT WHO/UNICEF STATEMENT (1989)

Transparency 4.9.1

Alternatives to artificial teats

- cup
- spoon
- dropper
- Syringe

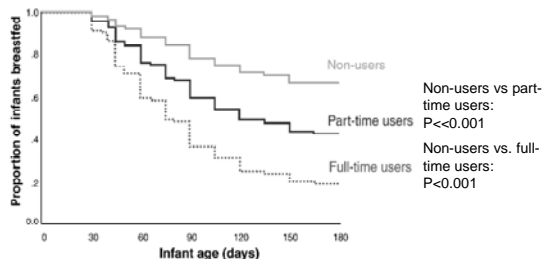
Transparency 4.9.2

Cup-feeding a baby



Transparency 4.9.3

Proportion of infants who were breastfed up to 6 months of age according to frequency of pacifier use at 1 month



From: Victora CG et al. Pacifier use and short breastfeeding duration: cause, consequence or coincidence? *Pediatrics*, 1997, 99:445-453.

Transparency 4.9.4

Ten steps to successful breastfeeding

Step 10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

A JOINT WHO/UNICEF STATEMENT (1989)

Transparency 4.10.1

“The key to best breastfeeding practices is continued day-to-day support for the breastfeeding mother within her home and community.”

From: Saadeh R.J, editor. *Breast-feeding: the Technical Basis and Recommendations for Action*. Geneva, World Health Organization, pp. 62-74, 1993.

Transparency 4.10.2

Support can include:

- Early postnatal or clinic checkup
- Home visits
- Telephone calls
- Community services
 - Outpatient breastfeeding clinics
 - Peer counselling programmes
- Mother support groups
 - Help set up new groups
 - Establish working relationships with those already in existence
- Family support system

Transparency 4.10.3

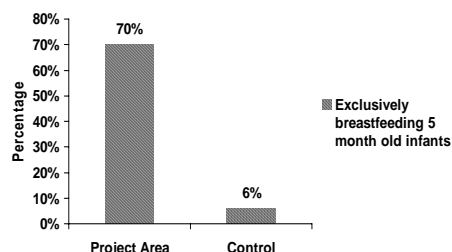
Types of breastfeeding mothers' support groups

- Traditional
 - extended family
 - culturally defined *doulas*
 - village women
- Modern, non-traditional
 - Self-initiated
 - by mothers
 - by concerned health professionals
 - Government planned through:
 - networks of national development groups, clubs, etc.
 - health services -- especially primary health care (PHC) and trained traditional birth attendants (TBAs)

From: Jelliffe DB, Jelliffe EFP. The role of the support group in promoting breastfeeding in developing countries. *J Trop Pediatr*, 1983, 29:244.

Transparency 4.10.4

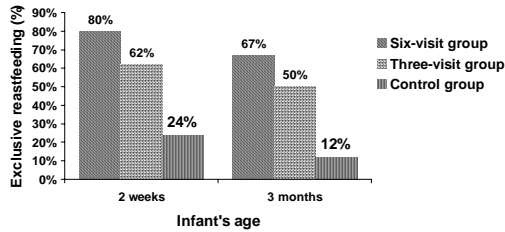
Step 10: Effect of trained peer counsellors on the duration of exclusive breastfeeding



Adapted from: Haider R, Kabir I, Huttly S, Ashworth A. Training peer counselors to promote and support exclusive breastfeeding in Bangladesh. *J Hum Lact*. 2002;18(1):7-12.

Transparency 4.10.5

Home visits improve exclusive breastfeeding



From: Morrow A, Guerrero ML, Shultis J, et al. Efficacy of home-based peer counselling to promote exclusive breastfeeding: a randomised controlled trial. *Lancet*, 1999, 353:1226-31

Transparency 4.10.6

Combined Steps: The impact of baby-friendly practices: The Promotion of Breastfeeding Intervention Trial (PROBIT)

- In a randomized trial in Belarus 17,000 mother-infant pairs, with mothers intending to breastfeed, were followed for 12 months.
- In 16 control hospitals & associated polyclinics that provide care following discharge, staff were asked to continue their usual practices.
- In 15 experimental hospitals & associated polyclinics staff received baby-friendly training & support.

Adapted from: Kramer MS, Chalmers B, Hodnett E, et al. Promotion of breastfeeding intervention trial (PROBIT) A randomized trial in the Republic of Belarus. *JAMA*, 2001, 285:413-420.

Transparency 4.11.1

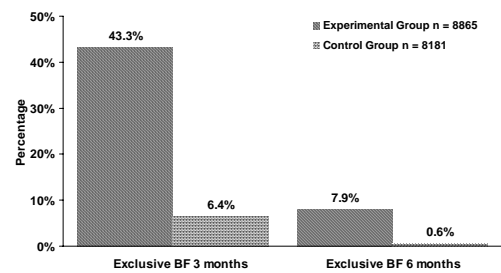
Differences following the intervention

Control hospitals:	Experimental hospitals:
▪ Routine separation of mothers & babies at birth	▪ Mothers & babies together from birth
▪ Routine tight swaddling	▪ No swaddling—skin-to-skin contact encouraged
▪ Routine nursery-based care	▪ Rooming-in on a 24-hr basis
▪ Incorrect latching & positioning techniques	▪ Correct latching & positioning techniques
▪ Routine supplementation with water & milk by bottle	▪ No supplementation
▪ Scheduled feedings every 3 hrs	▪ Breastfeeding on demand
▪ Routine use of pacifiers	▪ No use of pacifiers
▪ No BF support after discharge	▪ BF support in polyclinics

Communication from Chalmers and Kramer (2003)

Transparency 4.11.2

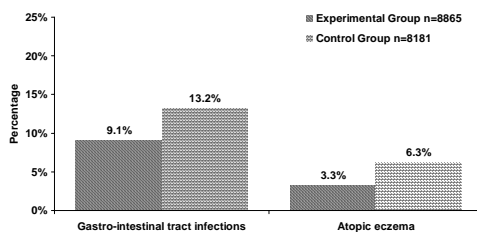
Effect of baby-friendly changes on breastfeeding at 3 & 6 months



Adapted from: Kramer et al. (2001)

Transparency 4.11.3

Impact of baby-friendly changes on selected health conditions



Note: Differences between experimental and control groups for various respiratory tract infections were small and statistically non-significant.

Adapted from: Kramer et al. (2001)

Transparency 4.11.4

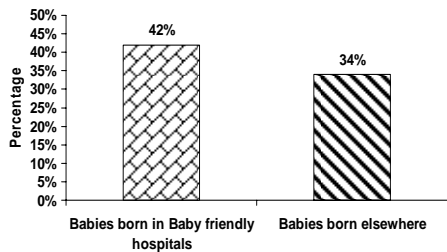
Combined Steps: The influence of Baby-friendly hospitals on breastfeeding duration in Switzerland

- Data was analyzed for 2861 infants aged 0 to 11 months in 145 health facilities.
- Breastfeeding data was compared with both the progress towards Baby-friendly status of each hospital and the degree to which designated hospitals were successfully maintaining the Baby-friendly standards.

Adapted from: Merten S et al. Do Baby-Friendly Hospitals Influence Breastfeeding Duration on a National Level? *Pediatrics*, 2005, 116: e702 – e708.

Transparency 4.11.5

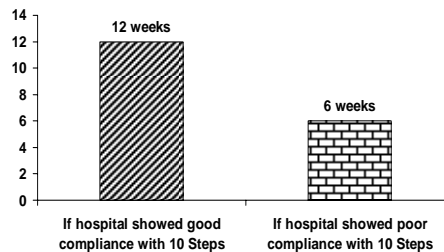
Proportion of babies exclusively breastfed for the first five months of life -- Switzerland



Adapted from: Merten S et al. Do Baby-Friendly Hospitals Influence Breastfeeding Duration on a National Level? *Pediatrics*, 2005, 116: e702 – e708.

Transparency 4.11.6

Median duration of exclusive breastfeeding for babies born in Baby-friendly hospitals -- Switzerland



Adapted from: Merten S et al. Do Baby-Friendly Hospitals Influence Breastfeeding Duration on a National Level? *Pediatrics*, 2005, 116: e702 – e708.

Transparency 4.11.7

Handout 4.6 (HIV)

Infant and young child feeding in the context of HIV¹

Background

Breastfeeding by HIV-positive women is a major means of HIV transmission, but not breastfeeding carries significant health risks to infants and young children. Breastfeeding is vital to the health of children, reducing the impact of many infectious diseases, and preventing some chronic diseases. In the face of this dilemma, the objective of health services should be to protect, promote and support breastfeeding as the best infant-feeding choice for all women in general, while giving special advice and support to HIV-positive women and their families so that they can make decisions about how best to feed infants in relation to HIV.

Achieving this objective requires the organization of services that:

- recognize the need to protect child survival and development, and not only to prevent HIV transmission.
- incorporate the interventions of the Global Strategy on Infant and Young Child Feeding (see section 2.1 and Annex 3)
- prevent HIV infection in women and their partners by providing information and promoting safer and responsible sexual behaviour and practices, including as appropriate, delaying the onset of sexual activity, practising abstinence, reducing the number of sexual partners and using condoms, and the early detection and treatment of sexually transmitted infections (STIs)
- encourage use of pre-conception, family planning and antenatal care (ANC) services by women of reproductive age, including, in particular, women and their partners in relationships in which one or both partners are HIV-infected
- include the following services as part of the basic package of ANC:
 - provision of information about breastfeeding and complementary feeding
 - prevention of HIV infection
 - STI management
 - counselling on safer sex practices
 - HIV testing and counselling
 - other interventions to reduce HIV transmission

¹ Adapted from WHO/UNICEF/UNFPA/UNAIDS. HIV and infant feeding: A guide for health-care managers and supervisors (revised). Geneva, World Health Organization, 2003, pp 3-7.

- provide and promote HIV testing and counselling for the whole population.
- for HIV-positive women, provide ongoing counselling and support to help them make their infant-feeding decisions and to carry them out.
- for HIV- negative women and women of unknown status, provide support to exclusively breastfeed for the first six months, with continued breastfeeding for up to two years and beyond, with adequate and appropriate complementary feeding from age six months.
- prevent any spillover effect of replacement feeding
- observe, implement and monitor the Code of Marketing of Breast-milk Substitutes. The Code is relevant to, and fully covers the needs of, mothers who are HIV-positive.
- consider support for infant and young child feeding as part of a continuum of care and support services for all women, especially HIV-positive women, taking into account the critical importance of the mother as a caregiver for her child
- provide care and support for pregnant women, mothers and their infants.
- promote an enabling environment for women living with HIV by strengthening community support and by reducing stigma and discrimination.

Protect, respect and fulfil human rights

Protecting, respecting and fulfilling human rights in relation to HIV implies that:

- All women and men, irrespective of their HIV status, have a right to determine the course of their sexual and reproductive lives and to have access to information and services that allow them to protect their own and their family's health
- Children have a right to survival, development and health
- A woman has a right to make decisions about infant feeding, on the basis of full information, and to receive support for the course of action she chooses
- Women and girls have a right to information about HIV/AIDS and to access to the means to protect themselves against HIV infection
- Women have the right to have access to voluntary and confidential HIV testing and counselling and to know their HIV status
- Women have a right to choose not to be tested or to choose not to be told the result of an HIV test

These principles are derived from international human rights instruments, including the Convention on the Elimination of All Forms of Discrimination Against Women (1979) and the Convention on the Rights of the Child.

Overview

Adopted in 2002, the Global Strategy on Infant and Young Child Feeding (Annex 3) clearly sets out that, as a public health recommendation, infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health. Afterwards, infants should receive nutritionally adequate and safe complementary food while breastfeeding continues for up to two years of age and beyond. However, the feeding of children living in the exceptionally difficult circumstances of being born to an HIV-positive woman merits special consideration and support.

This section sets out information on the risks of HIV transmission through breastfeeding, the risks of not breastfeeding, and goals and current approaches for the prevention of HIV infection in infants and young children. On the basis of this information managers should:

- be fully aware of the population benefits and risks of all infant-feeding options for HIV-positive women
- take into account the global goals and approaches related to the prevention of HIV infection in infants and young children
- apply these in programme planning and implementation
- keep in mind that the ultimate objective is to reduce infant and young child morbidity and mortality in the general population and specifically in the HIV-infected population.

1.1 Risk of HIV infection in infants and young children

By far the principal source of HIV infection in young children is mother-to-child transmission. The virus may be transmitted during pregnancy, labour or delivery, or through breastfeeding.

About two-thirds of infants born to HIV-infected mothers will not be infected, even with no intervention, such as anti-retroviral prophylaxis or caesarean section. About 15–30% of infants of HIV-infected women will be infected during pregnancy or during delivery, and an additional 5–20% may become infected during breastfeeding² (see table).

Estimated risk and timing of mother-to-child transmission of HIV in the absence of interventions³

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

² Few studies give information on the mode of breastfeeding (exclusive or mixed). In most cases, mixed feeding may be assumed.

³ Adapted from De Cock KM, Fowler MG, Mercier E, et al. Prevention of mother-to-child HIV transmission in resource-poor countries – Translating research into policy and practice. *JAMA* 2000; 283: 1175-82.

Evidence for HIV transmission through breast milk:

- The virus has been found in breast milk, and women with detectable virus are more likely to transmit infection compared to women who do not have detectable virus.
- HIV infection has occurred in breastfed infants of mothers who were not infected with HIV during pregnancy or at delivery but who became infected while breastfeeding, from either an infected blood transfusion or through sexual transmission.
- Infants born to HIV-uninfected mothers have been infected by breast milk from HIV-infected wet-nurses or by breast milk from unscreened donors.
- Infants born without infection to HIV-infected women, and who were diagnosed as HIV-uninfected at six months of age, have been found to be infected after this age, with breastfeeding as the only concurrent risk factor.

1.2 Risk factors for HIV transmission through breastfeeding

A number of factors increase the risk of HIV transmission through breastfeeding:

- **Recent infection with HIV** – a woman who has been infected with HIV during delivery or while breastfeeding is more likely to transmit the virus to her infant
- **HIV disease progression** – as measured by low CD4 count or high RNA viral load in plasma, with or without severe clinical symptoms
- **Breast conditions** – sub-clinical or clinical mastitis, cracked or bleeding nipples, or breast abscess
- **Oral thrush** – in the infant
- **Longer duration of breastfeeding** – infants continue to be at risk of infection as long as they are exposed to HIV-contaminated milk
- **Micronutrient deficiencies in the mother** – although evidence on this point is weak.

Mode of breastfeeding may also affect the risk of HIV transmission: exclusive breastfeeding may be less likely to transmit HIV than mixed feeding

1.3 Health risks to non-breastfed infants

The risks associated with not breastfeeding vary with the environment – for example, with the availability of suitable replacement feeds and safe water. It varies also with the individual circumstances of the mother and her family, including her education and economic status.

Lack of breastfeeding compared with any breastfeeding has been shown to expose children to increased risk of malnutrition and life-threatening infectious diseases other than HIV, especially in the first year of life, and exclusive breastfeeding appears to offer greater protection against disease than any breastfeeding. This is especially the case in developing countries, where over one-half of all under-five deaths are associated with malnutrition. Not breastfeeding during the first two months of life is also associated, in poor countries, with a six fold increase in mortality from infectious diseases. This risk drops to less than threefold by six months, and continues to decrease with time.

1.4 Current approaches to prevention of HIV transmission in pregnant women, mothers and their children

Reducing HIV transmission to pregnant women, mothers and their children, including transmission by breastfeeding, should be part of a comprehensive approach both to HIV prevention, care and support, and to antenatal, perinatal and postnatal care and support. Policies should serve the best interests of the mother and infant as a pair, in view of the critical link between survival of the mother and that of the infant. These policies should reflect government commitments made in the UN General Assembly Declaration of Commitment on HIV/AIDS, which set the goal: “By 2005, reduce the proportion of infants infected with HIV by 20 per cent, and by 50 per cent by 2010”, and at the UN General Assembly Special Session for Children, which set a goal of reduction in the infant and under-five mortality rates by at least one third by 2010.

The UN strategic approach to prevention of HIV transmission in pregnant women, mothers and their children has four parts: 1) prevention of HIV infection in general, especially in young women, and pregnant women; 2) prevention of unintended pregnancies among HIV-infected women; 3) prevention of HIV transmission from HIV-infected women to their infants; and 4) provision of care, treatment and support to HIV-infected women, their infants and families. Parts 3 and 4 concern the prevention of transmission through breastfeeding.

Programmes for prevention of HIV infection in pregnant women, mothers and their children, including infection through breastfeeding, directed primarily at part 3 may have a variety of components, but generally include:

- the incorporation of HIV testing and counselling into routine antenatal care;
- ensuring that antenatal care includes management of sexually transmitted infections and counselling for safer sex, including promotion of faithfulness or reducing the number of sexual partners and provision of condoms;
- prophylaxis with antiretroviral drugs to HIV-positive women and, in some regimens, to their babies;
- safer obstetric practices;
- infant-feeding counselling and support, including promotion of exclusive breastfeeding by HIV-negative women and by women unaware of their status; and
- follow-up care and support to HIV-positive women, their infants and families.

- Handout 4.7 (HIV)

Infant feeding policy: Rusape Hospital, Zimbabwe⁴

AIM

To protect, promote and support infant feeding practices at Rusape Hospital.

POLICY

TRAINING ALL HEALTH WORKERS AT RUSAPE HOSPITAL

- All health workers should be trained on the importance of breastfeeding and its advantages.
- All health workers should be trained on:
 - (a) Lactation Management (22 hours with 3 hours clinical practice)
 - (b) Prevention of Mother to Child Transmission
 - (c) Breastfeeding, HIV and Infant Feeding Counselling (44-hour course with 8 hours clinical practice and 4 hours practicals on milk measurements, preparation, use and costing).
- All health workers should be knowledgeable about the infant feeding policy.

HEALTH EDUCATION DURING PREGNANCY

- Educate mothers on:
 - a) Nutrition
 - b) Importance of exclusive breastfeeding in the first six months of life
 - c) Dangers of mixed feeding
 - d) Advantages and benefits of breastfeeding and breast milk
 - e) Timely introduction of complementary feeding
 - f) Positioning and attachment at the breast
 - g) Manual expression of breast milk
 - h) Prevention of Mother to Child Transmission
 - Mode of transmission of HIV
 - Voluntary Confidential Counselling and Testing
 - Antiretroviral
 - Infant feeding options
 - i) Nutrition and HIV/AIDS
 - j) Side effects of drugs, smoking and drinking alcohol
- Documentation:
 - a) Document what has been taught pertaining to infant feeding to mothers on the ANC cards.
 - b) Provide clients with leaflets and handouts.

⁴Used with permission from Rufaro Madzima, Head of Nutrition, Ministry of Health and Child Welfare, Zimbabwe.

PROMOTION OF INFANT FEEDING

- Initiate infant feeding to all newborn babies within 1-hour post delivery depending on the condition of both mother and baby.
- All mothers regardless of their HIV status should be supported and assisted to bond skin-to-skin immediately after delivery depending on the condition of the mother and baby (Caesar).
- Health workers should give assistance where necessary.
- Breastfeeding mothers are encouraged to feed their babies with colostrums, which is rich in nutrients required by the baby.

POSITIONING, ATTACHMENT AND MAINTANANCE OF LACTATION

Good positioning and attachment of baby to the breast is important in prevention of breast conditions such as cracked or sore nipples, assuring enough milk and other breast conditions.

- Breastfeeding mothers should be in a comfortable position either sitting or sleeping.
- All breastfeeding babies should be breastfed on demand. The pre-term and the ill babies should be given expressed breast milk by cup or nasogastric tube.
- Individual needs of babies not breastfed should be respected and responded to.
- Cup feeding should also be encouraged for non-breastfeeding babies.

EXCLUSIVE BREASTFEEDING

- All babies below the age of six months (6/12) should be exclusively breastfed, - i.e. giving breast milk only without any other food or fluids even water- unless medically indicated.
- Those babies not breastfed should be exclusively fed for the first six months with the chosen replacement feed /option.

ROOMING IN

- All mothers regardless of their HIV status should be allowed rooming-in / bedding-in with their babies for 24 hours a day.
- Mothers of admitted babies should be admitted to facilitate continuous breastfeeding except when the mother is critically ill.
- Avoid unnecessary separations of mother and baby except when medically indicated or during hospital procedures.

TIMELY INTRODUCTION OF COMPLEMENTARY FEEDING

- Mothers should be taught to prepare soft and nutritious foods which are locally available and given to the infants gradually in addition to breast milk or other forms of milk, from six months (6/12) of birth.
- Health education on complementary feeding should start at ANC.

SUPPLY OF BREAST-MILK SUBSTITUTES (Code of Marketing of Breast-milk Substitutes)

- All health workers should refuse free and low cost free supply of breast-milk substitutes, bottles, teats and pacifiers/dummies/soothers from manufacturers.
- Should the hospital require any breast-milk substitutes, including special formulae, which are used in the health facility, these should be purchased in the same way as other foods and medicines.
- Feeding bottles, teats, pacifiers/dummies/soothers should not be given to infants.
- Advertising of artificial products is not allowed within the health facilities.

FOLLOW-UP SUPPORT

- Infant feeding mothers and their babies should be supported and followed-up.
- The existing community based support groups and systems should be strengthened, supported and involved in PMTCT and infant feeding follow-up.
- Networking amongst existing support groups and systems should be promoted.

WORKING MOTHERS

- Working mothers should be encouraged to express breast milk in clean containers. This milk is to be given to the babies during their absence by cup.