

# **Taking Another Look at Global Policy on HIV and infant feeding 1985 - 2008**

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## Early policy

The first report claiming that the AIDS virus could be transmitted during breastfeeding was made in April 1985.<sup>1</sup> At this time, breastfeeding had already enjoyed well over a decade of unprecedented promotion and support. During the 1970s a flood of research into the unique properties of human milk, coupled with concerns about the negative consequences on the health and survival of formula-fed babies in developing countries, had underpinned the value of breastfeeding.<sup>2 3</sup> Following a concerted campaign against unethical marketing, the International Code of Marketing of Breastmilk Substitutes was overwhelmingly approved by 118 countries in 1981,<sup>4</sup> the USA casting the only opposing vote.

But the Lancet 1985 report<sup>1</sup> described how a baby boy, born by Cesarean section after a difficult pregnancy, had been breastfed for 6 weeks by a mother who had received two blood transfusions shortly after delivery. One unit of blood was subsequently found to come from a male who, although healthy at the time of donation, had developed AIDS 13 months later. Mother and baby were subsequently shown to produce antibodies to the virus, and it was presumed that transmission had occurred to the mother through the blood transfusion and subsequently to the baby either through breast milk, or through some other close contact with his mother.

Shortly afterwards the US Centers for Disease Control and Prevention (CDC) recommended that women testing HIV-positive in the United States avoid breastfeeding on the rationale that infant formula was safe, affordable, and culturally acceptable<sup>5</sup>. The CDC and the American Academy of Pediatrics continue to recommend that women testing HIV-positive in the United States not breastfeed or provide their milk for the nutrition of their own or other infants.<sup>6</sup> These recommendations are echoed by European

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<sup>1</sup> Ziegler JB, Cooper DA, Johnson RO, Gold J. Postnatal transmission of AIDS-associated retrovirus from mother to infant. *Lancet*. 1985 Apr 20;i(8434):896-8.

<sup>2</sup> World Health Assembly, Resolution on Infant Nutrition and Breast-Feeding, Fourteenth Plenary Meeting, 23 May 1974.

<sup>3</sup> Jelliffe, DB and Jelliffe EF, *Human Milk in the Modern World*, Chapter 6 International Concern. Oxford University Press 1978.

<sup>4</sup> World Health Organization, *International Code of marketing of breast-milk substitutes*, Geneva 1981.

<sup>5</sup> Centers for Disease Control and Prevention. Recommendations for assisting in the prevention of perinatal transmission of human T lymphotropic virus type III/lymphadenopathy-associated virus and acquired immunodeficiency syndrome. *MMWR Morb Mortal Wkly Rep*. 1985;34:721726, 731732.

<sup>6</sup> American Academy of Pediatrics, *Breastfeeding and the use of human milk*, Policy statement:

and Australian policy-makers.<sup>7 8</sup>

However, global guidelines continued to support universal breastfeeding. In 1987 WHO and UNICEF made the first recommendation in relation to HIV transmission and breastfeeding<sup>9</sup>

*Breast-feeding should continue to be promoted, supported and protected in both developing and developed countries.*

*In individual situations where the mother is considered to be HIV-infected, and recognizing the difficulties inherent in assessing the infection status of the newborn, the known and potential benefits of breast-feeding would be compared to the theoretical, but apparently small, incremental risk to the infant of becoming infected through breast-feeding.*

Thus initial recommendations followed a pragmatic, public health approach favouring continued breastfeeding by mothers testing HIV-positive on the rationale that the risk of death from transmission of HIV was likely to be less than the risk of death if breastfeeding was withheld.

In 1989 the Convention on the Rights of the Child<sup>10</sup> explicitly specified protection of a child's right to the enjoyment of the highest attainable standard of health and made special mention of the advantages of breastfeeding, omitting maternal HIV status as a risk factor.

In 1990 the Innocenti Declaration on the Protection, Promotion and Support of Breastfeeding<sup>11</sup> recognized the importance of re-creating a global breastfeeding culture and re-endorsed the need for protection of mothers from inappropriate marketing of breastmilk substitutes.

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Organizational Principles to Guide and Define the Child Health Care System and/or Improve the Health of All Children (2005 revision), Pediatrics Vol. 115 No. 2 February 2005, pp. 496-506 (doi:10.1542/peds.2004-2491) <http://aappolicy.aappublications.org/cgi/reprint/pediatrics;115/2/496.pdf>

<sup>7</sup> BHIVA & CHIVA guidelines for management of HIV infection in pregnant women 2008, available at <http://www.bhiva.org/files/file1031055.pdf>

<sup>8</sup> Australian National Health & Medical Research Council (NHMRC) Infant feeding guidelines for Health Workers, 2002, available at <http://www.nhmrc.gov.au/publications/synopses/files/n34.pdf#page=291> (accessed 20 February 2009).

<sup>9</sup> WHO 2007. WHO Special Programme on AIDS and the Division of Family Health. Statement from the Consultation on Breast-feeding/Breast Milk and Human Immunodeficiency Virus (HIV) Infection, Geneva, 23-25 June 1987

<sup>10</sup> United Nations Assembly (UNGASS) Convention on the Rights of the Child, 1989-1990, available at <http://www2.ohchr.org/english/law/crc.htm> (accessed 20 February 2009)

<sup>11</sup> UNICEF. Innocenti Declaration on the protection, promotion and support of breastfeeding, Florence, Italy, 1 August 1990

The May 1992 WHO/UNICEF consultation on HIV transmission and breastfeeding issued an unambiguous Consensus Statement<sup>12</sup> which argued:

*“Where infectious diseases and malnutrition are the main cause of infant deaths, breastfeeding should be the usual advice given to pregnant women, including those who are HIV infected because their baby’s risk of HIV infection through breastmilk is likely to be lower than the risk of death from other causes if it is not breastfed.”*

In fact, global policy continued to acknowledge the benefits of breastfeeding in the face of HIV, and the risks of formula-feeding in resource-poor areas. The protection of breastfeeding continued until 1997, ie for over a decade following the claim that breastmilk could transmit HIV, and for another five years after the possible risk of infection through breastfeeding had been quantified. A meta-analysis published in September 1992,<sup>13</sup> had estimated the risk of transmission through breastfeeding with established maternal HIV infection to be 14% and in primary infection to be 29%. This paper subsequently turned out to be so highly influential that by January 2004 it had been cited 389 times in scientific papers on HIV and infant feeding<sup>14</sup> but in fact it's publication did little to change the policy statement made five months previously, and breastfeeding promotion efforts continued.

In 1993, the WHO 40 hour Breastfeeding Counselling Course was published<sup>15</sup>, reinforcing efforts to maximize child survival through optimal breastfeeding.<sup>16</sup> In the same year UNICEF began implementation of the Baby Friendly Hospital Initiative.<sup>17</sup>

### 1997 ushers in change

In 1997 a major policy change occurred, completely reversing previous recommendations supporting breastfeeding for HIV-exposed babies in resource-poor areas. A 1996-7

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<sup>12</sup> WHO/UNICEF 1992. Consensus statement from the WHO/UNICEF consultation on HIV transmission and breastfeeding. Geneva 30 April – 1 May, 1992.

<sup>13</sup> Dunn DT, Newell ML, Ades AE, Peckham CS, Risk of human immunodeficiency virus type 1 transmission through breastfeeding. Lancet 1992;340:585-88.

<sup>14</sup> Crowe D, Kent G, Morrison P and Greiner T, Revisiting the risk of HIV from breastfeeding, AnotherLook commentary on Dunn paper, November 2006.

<http://www.anotherlook.org/papers/g/english.pdf>

<sup>15</sup> WHO/UNICEF Breastfeeding Counselling: A Training Course, World Health Organization/CDR/93.3-6, 1993 a 40-hour course for counsellors who care for women and young children, available from [http://www.who.int/child\\_adolescent\\_health/documents/who\\_cdr\\_93\\_3/en/index.html](http://www.who.int/child_adolescent_health/documents/who_cdr_93_3/en/index.html) (accessed 21 December 2008).

<sup>16</sup> WHO/UNICEF Breastfeeding Counselling: A Training Course, World Health Organization/CDR/93.3-6, 1993 a 40-hour course for counsellors who care for women and young children. available from <http://www.who.int/child-adolescent-health/publications/pubnutrition.htm#Training>.

<sup>17</sup> UNICEF/WHO, Breastfeeding Management and Promotion in a Baby-Friendly Hospital: an 18 hour course for maternity staff, 1993.

study in Thailand<sup>18</sup> had found that short-course antiretroviral therapy in the absence of breastfeeding reduced transmission to HIV-exposed babies from ~19% to 9%. In collaboration with UNAIDS<sup>19 20 21</sup> the previous WHO/UNICEF population-based guidance for developing countries was changed to one based on a stated human rights perspective:

*“... it is mothers who are in the best position to decide whether to breastfeed particularly when they alone may know their HIV status and wish to exercise their right to keep that information confidential. It is therefore important that women be empowered to make fully informed decisions about infant feeding and that they be suitably supported in carrying them out...”*

While the new policy acknowledged some risk, the main objectives focused on an assumption of the intrinsic safety of breastmilk substitutes, and the need to minimize the risks and constraints to their use, and to make them accessible and affordable and safe. In addition, certain new initiatives needed to be introduced so that HIV+ women's capacity to freely choose alternatives to breastfeeding could be maximized:

*“.....When children born to HIV-infected women can be assured of uninterrupted access to nutritionally adequate breastmilk substitutes that are safely prepared and fed to them, they are at less risk of illness and death if they are not breastfed. However, when these conditions cannot be met – in particular in environments where infectious diseases and malnutrition are the primary causes of death during infancy – then artificial feeding substantially increases children’s risk of illness and death. The policy objective must be to minimize all infant feeding risks and to urgently expand access to adequate alternatives so that HIV-infected women have a range of choices. The policy should also stipulate what measures are being taken to make breastmilk substitutes available and affordable; to teach the safest means of feeding them to infants; and to provide the conditions which will diminish the risks of using them.”*

In 1998, shortly after the new 1997 HIV and infant feeding policy statement was released, UNICEF announced that it would be providing services to 30 000 HIV-infected mothers in 11 developing countries to prevent transmission of HIV from mother to child

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<sup>18</sup> Shaffer N, Chuachoowong R, Mock PA, Bhadrakom C, Siriwasin W, Young NL, Chotpitayasunondh T, Chearskul S, Roongpisuthipong A, Chinayon P, Karon J, Mastro TD, Simonds RJ. Short-course zidovudine for perinatal HIV-1 transmission in Bangkok, Thailand: a randomised controlled trial. Bangkok Collaborative Perinatal HIV Transmission Study Group. *Lancet*. 1999 Mar 6;353(9155):773-80.

<sup>19</sup> UNAIDS UNICEF WHO Policy Statement on HIV and Infant Feeding, Geneva 1997.

<sup>20</sup> World Health Organization, HIV and infant feeding. Guidelines for decision makers, Geneva, WHO, 1998

<sup>21</sup> WHO 2003 Strategic approaches to the prevention of HIV infection in infants : report of a WHO meeting, Morges, Switzerland, 20-22 March 2002

(PMTCT).<sup>22</sup> The initial priority was to demonstrate the feasibility and acceptability of HIV-prevention measures in resource-poor settings, beginning with voluntary counseling and testing to identify HIV-infected mothers so that they could be provided with antiretroviral therapy, and free formula. In the event, less than one-quarter of the mothers received any form of therapy,<sup>23</sup> and regrettably, no provision was made to monitor and evaluate infant health outcomes according to feeding method. From the outset experts voiced concerns about possible negative side effects of the provision of free formula. It was hoped that the institutionalization of counseling on infant feeding and the carefully targeted distribution of the formula would prevent any potential negative impact, but experts felt that the involvement of the commercial infant formula industry, both in deliberations leading to the new policy and also in offering to make their products available, were troubling.<sup>24</sup>

Previous recommendations were expanded in the 1998 UNAIDS/WHO/UNICEF three-part Guideline and Review of HIV and infant feeding,<sup>25 26 27</sup> which recommended:

- *when replacement feeding is acceptable, feasible, affordable, sustainable and safe, avoidance of all breastfeeding by HIV-infected mothers is recommended*
- *otherwise exclusive breastfeeding is recommended during the first months of life and should then be discontinued as soon as it is feasible.*
- *HIV-infected mothers should be supported in their choice, whether they choose breastfeeding or replacement feeding.*
- *when children born to women living with HIV can be ensured uninterrupted access to nutritionally adequate breast-milk substitutes that are safely prepared and fed to them, they are at less risk of illness and death if they are not breastfed.*
- *it is considered that milk in some form is essential, and replacement feeding options include commercial infant formula, and home prepared formula which can be made from animal milks, typically from cows, goats, buffaloes, sheep or camels.*

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<sup>22</sup> De Wagt A, Clark D, UNICEF's Support to Free Infant Formula for Infants of HIV Infected Mothers in Africa: A Review of UNICEF Experience, LINKAGES Art and Science of Breastfeeding Presentation Series, Washington DC, April 14 2004.

<sup>23</sup> Rutenberg M, Baek C, Kalibala S, Rosen S, HIV/AIDS working paper, Evaluation of United Nations-supported pilot projects for the prevention of mother-to-child HIV Overview of findings. Populations Counsel, Horizons, UNICEF 2003

<sup>24</sup> Latham M, Greiner T, Lancet 1998;352:9129-29 August (letter)

<sup>25</sup> UNAIDS/UNICEF/WHO 1998, HIV and infant feeding: Guidelines for decision-makers, WHO/FRH/CHD/98.1

<sup>26</sup> UNAIDS/UNICEF/WHO 1998, HIV and infant feeding: A guide for health care managers and supervisors, WHO/FRH/CHD/98.2.

<sup>27</sup> UNAIDS/UNICEF/WHO 1998 HIV and Infant Feeding: A review of HIV transmission through breastfeeding, WHO/FRH/NTU/CHD/98.3.

It is important to note that at the time that the 1998 guidance was developed, research on HIV and breastfeeding was beset by several difficulties, including lack of definitions of "breastfed", the impossibility of determining the route of transmission to the infected baby (in utero, during birth, or during breastfeeding), variations in the length of, or lack of follow-up and differences in methods used to account for missing data, deaths, and children of different ages and of indeterminate infection status.<sup>28</sup>

Most importantly, there had been no research to compare the risk of death due to HIV-transmission during breastfeeding versus the risk of death from no breastfeeding at all.

Thus, while announcements during 1997 and 1998 appeared to support the HIV-positive mother's right to choose her own infant feeding method under the guise of supporting her human rights, it is clear that there was no existing evidence to show that withholding breastfeeding would enhance overall child survival. The major flaw was the assumption that HIV-transmission through breastfeeding would make formula-feeding any safer in resource-poor settings than it ever had been.

#### 2000 - 2006 Consolidating support for replacement feeding

In 1999 the vitally protective effect of exclusive breastfeeding for HIV-exposed babies was highlighted by Anna Coutsooudis in a landmark study published in the Lancet.<sup>29</sup> Nevertheless, to achieve implementation of the new guidelines, an HIV and Infant Feeding Counselling Course<sup>30 31</sup> was developed. It was field-tested in 1999 and published in 2000. This Course, or subsequent adaptations carrying the same recommendations, with the major emphasis on training healthworkers how to teach HIV-infected mothers to prepare and feed replacements for breastfeeding<sup>32</sup>, has been taught extensively up until the present time in HIV-affected developing countries. While the HIV Counselling Course was recommended as a follow-on to the Breastfeeding Counselling Course previously published in 1993, because it had been issued as a separate module, ministries of health eager to reduce transmission of HIV have bypassed training on breastfeeding and skipped straight to training on HIV and replacement feeding. In addition, spillover of formula-feeding to uninfected mothers has occurred as a result of healthworkers' ethical obligations to the mother wishing to maintain

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<sup>28</sup> Preble EA and Piwoz EG, 1998, HIV and infant feeding: A chronology of research and policy advances and their implications for programs, The Linkages Project and the Support for Analysis and Research in Africa (SARA) Project, the Academy for Educational Development, USAID Bureau for Africa.

<sup>29</sup> Coutsooudis A, Pillay K, Spooner E, Kuhn L, Coovadia HM. Influence of infant-feeding patterns on early mother-to-child transmission of HIV-1 in Durban, South Africa: a prospective cohort study. South African Vitamin A Study Group. Lancet. 1999 Aug 7;354(9177):471-6.

<sup>30</sup> WHO 2000, HIV and Infant Feeding Counselling: A training course, Director's Guide WHO/FCH/CAH/00.2 [http://www.who.int/child-adolescent-health/New\\_Publications/NUTRITION/HIV\\_Inf\\_Feeding/Directors\\_Guide.pdf](http://www.who.int/child-adolescent-health/New_Publications/NUTRITION/HIV_Inf_Feeding/Directors_Guide.pdf)

<sup>31</sup> WHO 2000, HIV and Infant Feeding Counselling: A training course, A Trainer's Guide, WHO/FCH/CAH/00.4 [http://www.who.int/child-adolescent-health/New\\_Publications/NUTRITION/HIV\\_Inf\\_Feeding/Trainers\\_Guide.pdf](http://www.who.int/child-adolescent-health/New_Publications/NUTRITION/HIV_Inf_Feeding/Trainers_Guide.pdf)

<sup>32</sup> Morrison P, Review: WHO HIV and Infant Feeding Counselling Course, J Hum Lact 2002;18(4):403.

confidentiality about her HIV status, yet requesting infant feeding counselling to enable her to make what she hopes will be the best choice for herself and her infant.

In 2000 the WHO Technical Consultation<sup>33</sup> determined that mother-to-child transmission of HIV was the most significant source of HIV-infection in children. Previous recommendations for counselling on infant feeding, including new guidelines to reduce the duration of breastfeeding were clarified and confirmed. It can be seen that there was an ambiguous mix of support for a mothers' own infant feeding decision (bullet 4) combined with a greater emphasis on the risks of breastfeeding and facilitation of formula-feeding (bullets 1, 2, 3 and 6) to create a measure of subtle coercion favouring the latter.

- *Breastfeeding is associated with a significant additional risk of HIV transmission from mother to child as compared to non-breastfeeding. This risk depends on clinical factors and may vary according to pattern and duration of breastfeeding. In untreated women who continue breastfeeding after the first year, the absolute risk of transmission through breastfeeding is 10-20%. The risk of MTCT of HIV through breastfeeding appears to be greatest during the first months of infant life but persists as long as breastfeeding continues. Half of the breastfeeding-related infections may occur after six months with continued breastfeeding into the second year of life.*
- *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).*
- *When HIV-infected mothers choose not to breastfeed from birth or stop breastfeeding later, they should be provided with specific guidance and support for at least the first 2 years of the child's life to ensure adequate replacement feeding.*
- *All HIV-infected mothers should receive counselling, which includes provision of general information about the risks and benefits of various infant feeding options, and specific guidance in selecting the option most likely to be suitable for their situation. Whatever a mother decides, she should be supported in her choice.*
- *Adequate numbers of people who can counsel HIV-infected women on infant feeding should be trained, deployed, supervised, and supported. Such support*

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<sup>33</sup> WHO Technical consultation on behalf of the UNFPA/UNICEF/WHO/UNAIDS Inter-Agency Task Team on Mother-to-Child Transmission of HIV, New Data on the prevention of mother-to-child transmission of HIV and their policy implications conclusions and recommendations, Geneva 11-13 October 2000

*should include updated training as new information and recommendations emerge.*

- *Programmes should strive to improve conditions that will make replacement feeding safer for HIV-infected mothers and families.*
- *Assessments should be conducted locally to identify the range of feeding options that are acceptable, feasible, affordable, sustainable and safe in a particular context. Information and education on mother-to-child transmission of HIV should be urgently directed to the general public, affected communities and families.*

Concluding two years of consultations and deliberations designed to integrate a comprehensive approach to appropriate feeding for the world's children, WHO published the 2003 Global Strategy on Infant and Young Child Feeding.<sup>34</sup> This document was intended as a guide for action. It recorded that:

- *Breastfeeding is an unequalled way of providing ideal food for the healthy growth and development of infants; it is also an integral part of the reproductive process with important implications for the health of mothers. As a global public health recommendation, infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health. Thereafter to meet their evolving nutritional requirements, infants should receive nutritionally adequate and safe complementary foods while breastfeeding continues for up to two years of age or beyond. Exclusive breastfeeding from birth is possible except for a few medical conditions, and unrestricted exclusive breastfeeding results in ample milk production.*
- *The HIV pandemic and the risk of mother-to-child transmission of HIV through breastfeeding pose unique challenges to the promotion of breastfeeding, even among unaffected families ... An estimated 1.6 million children are born to HIV-infected women each year, mainly in low-income countries. The absolute risk of HIV transmission through breastfeeding for more than one year – globally between 10% and 20% – needs to be balanced against the increased risk of morbidity and mortality when infants are not breastfed. All HIV-infected mothers should receive counselling, which includes provision of general information about meeting their own nutritional requirements and about the risks and benefits of various feeding options, and specific guidance in selecting the option most likely to be suitable for their situation. Adequate replacement feeding is needed for*

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<sup>34</sup> WHO Global strategy for infant and young child feeding, Geneva: World Health Organization, 2003, available from: <http://whqlibdoc.who.int/publications/2003/9241562218.pdf>



*infants born to HIV-positive mothers who choose not to breastfeed. It requires a suitable breast-milk substitute, for example an infant formula prepared in accordance with applicable Codex Alimentarius standards, or a home-prepared formula with micronutrient supplements. Heat-treated breast milk, or breast milk provided by an HIV-negative donor mother, may be an option in some cases. To reduce the risk of interfering with the promotion of breastfeeding for the great majority, providing a breastmilk substitute for these infants should be consistent with the principles and aim of the International Code of Marketing of Breastmilk Substitutes.*

- *For mothers who test negative for HIV, or who are untested, exclusive breastfeeding remains the recommended feeding option.*

In 2003, the HIV and Infant Feeding Framework for Priority Action was published,<sup>35</sup> with recommendations for key actions by governments to scale up interventions to reduce HIV transmission through breastfeeding:

- *Expand access to, and demand for, quality antenatal care for women who currently do not use such services.*
- *Expand access to, and demand for, HIV testing and counselling, before and during pregnancy and lactation, to enable women and their partners to know their HIV status, know how to prevent HIV/sexually transmitted infections and be supported in decisions related to their own behaviours and their children's health.*
- *Implement other measures aimed at prevention of HIV infection in infants and young children, including provision of antiretroviral drugs during pregnancy, labour and delivery and/or to the infant and safer delivery practices.*
- *Support the orientation of health care managers and capacity-building and pre-service training of counsellors (including lay counsellors) and health workers on breastfeeding counselling, as well as primary prevention of HIV and infant feeding counselling, including the need for respect and support for mothers' feeding choices.*
- *Improve follow-up, supervision and support of health workers to sustain their skills and the quality of counselling, and to prevent 'burn-out'.*
- *Integrate adequate HIV and infant feeding counselling and support into maternal and child health services, and simplify counselling to increase its comprehensibility and enhance the feasibility of increasing coverage levels.*
- *Carry out relevant formative research, and develop and implement a comprehensive communication strategy on appropriate infant and young child feeding practices within the context of HIV.*

In 2004, updated versions of the original 1998 trilogy of HIV and Infant Feeding Guidelines for Decision Makers,<sup>36</sup> for Health-care Managers and Supervisors,<sup>37</sup> and a Review of HIV through Breastfeeding<sup>38</sup> were published.

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<sup>35</sup> WHO HIV and infant feeding: framework for priority action, ISBN 92 4 159077 7, World Health Organization 2003.

By 2005, it was recognized that counselling and support for HIV-positive women was the most demanding aspect of PMTCT programs<sup>39</sup>. A set of Counselling Tools was developed<sup>40</sup> to clarify what steps needed to be taken during a counselling session. Once again, in spite of little evidence to underpin the safety of formula-feeding, the Counselling Tools emphasized how to counsel HIV-positive mother about feeding breastmilk substitutes, if not from birth, then at the latest from six months.

### Evaluating outcomes

More recent research has shown that HIV-free survival past the normal breastfeeding period of 2 years or beyond is a more accurate way of assessing the outcome for breastfed vs formula-fed children of HIV-positive mothers<sup>41</sup>. In countries with the highest HIV prevalence, even in the most supportive circumstances, HIV-free survival at 2 years is the same for breastfed as for formula-fed children.<sup>42 43</sup> In more normal circumstances, continued breastfeeding of HIV-exposed babies leads to much lower overall infant morbidity and mortality than formula feeding, either from birth,<sup>44</sup> or when breastfeeding

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<sup>36</sup> WHO 2004. HIV & Infant Feeding: Guidelines for Decision makers  
[http://www.who.int/child\\_adolescent\\_health/documents/9241591226/en/index.html](http://www.who.int/child_adolescent_health/documents/9241591226/en/index.html)  
(accessed 23 December 2008)

<sup>37</sup> WHO 2004. HIV and infant feeding: A guide for health-care managers and supervisors, World Health Organization 2003 [http://www.who.int/child\\_adolescent\\_health/documents/9241591234/en/index.html](http://www.who.int/child_adolescent_health/documents/9241591234/en/index.html)  
(accessed 23 December 2008)

<sup>38</sup> WHO 2004. HIV Transmission through breastfeeding: a review of available evidence.  
[http://www.who.int/child-adolescent-health/New\\_Publications/NUTRITION/ISBN\\_92\\_4\\_156271\\_4.pdf](http://www.who.int/child-adolescent-health/New_Publications/NUTRITION/ISBN_92_4_156271_4.pdf)

<sup>39</sup> Koniz-Booher P, Burkhalter B, de Wagt A, Iliff P, Willumsen J (eds) 2004. HIV and infant feeding: a compilation of programmatic evidence. Bethesda, MD, published for UNICEF and the US Agency for International Development by the Quality Assurance Project (QAP) University Research Co., LLC (URC).

<sup>40</sup> WHO 2005 HIV and Infant Feeding Counselling Tools, ISBN 92 4 159301 6  
available from <http://whqlibdoc.who.int/publications/2005/9241593016.pdf>

<sup>41</sup> Rollins NC. Infant feeding and HIV, avoiding transmission is not enough. *BMJ* 2007;334:487-8  
doi: 10.1136/bmj.39135.411563.80.

<sup>42</sup> Nduati R, John G, Mbori-Ngacha D, Richardson B, Overbaugh J, Mwatha A, Ndinya-Achola J, Bwayo J, Onyango FE, Hughes J, Kreiss J. Effect of breastfeeding and formula feeding on transmission of HIV-1: a randomized clinical trial. *JAMA*. 2000 Mar 1;283(9):1167-74.

<sup>43</sup> Thior, I, Lockman S, Smeaton LM, Shapiro RL, Wester C, Heymann SJ, Gilbert PB, Stevens L, Peter T, Kim S, van Widenfelt E, Moffat C, Ndase P, Arimi P, Kebaabetswe P, Mazonde P, Makhema J, McIntosh K, Novitsky V, Lee T-H, Marlink R, Lagakos S, Essex M, for the Mashi Study Team. Breastfeeding Plus Infant Zidovudine Prophylaxis for 6 Months vs Formula Feeding Plus Infant Zidovudine for 1 Month to Reduce Mother-to-Child HIV Transmission in Botswana A Randomized Trial: The Mashi Study. *JAMA* 2006 August 16; 296(7):794-805.

<sup>44</sup> Kagaayi J, Gray RH, Brahmabhatt H, Kigozi G, Nalugoda F, et al. (2008) Survival of Infants Born to HIV-Positive Mothers, by Feeding Modality, in Rakai, Uganda. *PLoS ONE* 2008;3(12): e3877.  
doi:10.1371/journal.pone.0003877

<http://www.plosone.org/article/info:doi/10.1371/journal.pone.0003877>

is prematurely terminated on the rationale of reducing the length of time a child is exposed to HIV.<sup>45</sup>

### Outdated 2006 Revisions of BFHI and Integrated Breastfeeding Counselling Courses

In 2006 WHO and UNICEF published two revised training courses for healthworkers, as shown below. It is important to note, however, that these updates effectively repeated the recommendations formulated several years earlier – those contained in the 2000 WHO HIV and Infant Feeding Technical Consultation and subsequent documents released between 2000 and 2005. Although dated 2006, they were released several months **before** an important Consultation in October of the same year, which effectively profoundly **changed** the previous promotion of replacement feeding (formula-feeding) for HIV-positive mothers whenever possible to promotion of breastfeeding **unless** safe conditions for formula-feeding had been shown to be already in place. The two so-called revised courses are:

1. The January 2006 revised Baby Friendly Hospital Initiative Course.<sup>46</sup> This course replaces the 1992 Baby Friendly Hospital Initiative documents, and includes additional modules on HIV and infant feeding to be used if the maternity facility has a prevalence of more than 20% HIV positive clients, and/or has a PMTCT program. The 2006 BFHI criteria of 75% of mothers who should be breastfeeding on hospital discharge in order to obtain BFHI certification is less than the 80% figure set out in 1992/3, and is further undermined by the possibility that this total may exclude HIV-infected mothers **and** mothers who wish to maintain confidentiality about their HIV status and choose not to breastfeed.

2. The 2006 WHO Integrated Infant and Young Child Feeding Counselling Course.<sup>47</sup> This training combines the 1993 Breastfeeding Counselling and the 2000 HIV and Infant Feeding Courses and subsequent updates up to 2005. Approximately 30% of the content is devoted to HIV and infant feeding. Participants are reassured that after completing the course they will be able to counsel and support mothers to carry out WHO/UNICEF recommended feeding practices for their infants and young children from birth up to 24 months of age, and to counsel and support HIV-infected mothers to choose and carry out an appropriate feeding method for the first two years of life. Nevertheless, as stated

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<sup>45</sup> Kuhn L, Aldrovandi GM, Sinkala M, Kankasa C, Semrau K, Mwiya M, Kasonde P, Scott N, Vwalika C, Walter J, Bulterys M, Tsai W-Y and Thea DM for the Zambia Exclusive Breastfeeding Study. Effects of early, abrupt weaning for HIV-free survival of children in Zambia N Engl J Med 2008;359. Available at <http://content.nejm.org/cgi/reprint/NEJMoa073788v1.pdf>

<sup>46</sup> UNICEF/WHO, Baby Friendly Hospital Initiative: Revised, Updated and Expanded for Integrated Care, Preliminary Version for Country Implementation, January 2006, [http://www.unicef.org/nutrition/files/BFHI\\_Revised\\_Section1.pdf](http://www.unicef.org/nutrition/files/BFHI_Revised_Section1.pdf) (accessed 23 December 2008)

<sup>47</sup> WHO 2006, Infant and Young Child Feeding Counselling: An Integrated Course ISBN 92 4 159475 6, available at [http://www.who.int/nutrition/iycf\\_intergrated\\_course/en/index.html](http://www.who.int/nutrition/iycf_intergrated_course/en/index.html) (accessed 23 December, 2008).

above, since it was published before the October 2006 WHO HIV and Infant Feeding Technical Consultation, new recommendations emanating from that meeting are missing from it.

### **New October 2006 recommendations clarify and reverse previous guidance**

Finally, in October 2006 WHO convened the first Technical Consultation on HIV and Infant Feeding to be held since 2000. Researchers, programme implementers, infant feeding experts and representatives of the Inter-agency Task Force UN agencies, gathered in Geneva to review a substantial body of **new evidence and experience** regarding HIV and infant feeding, which had been released in the previous few months, including the recent worrying data from Botswana which had been uncovered by Dr Tracy Creek. Her report showed high mortality for formula-fed babies of HIV-positive mothers, and spillover of formula-feeding to uninfected mothers.<sup>48</sup> Several documents have been published outlining the deliberations of the 2006 Technical Consultation, including a final Report<sup>49</sup> and Consensus Statement, a Review of available evidence of transmission of HIV through breastfeeding,<sup>50</sup> and an Update.<sup>51</sup> Recommendations outlined in the Update are set out below. It will be seen that the major changes are the absence of assumption about the safety of formula-feeding in favour of the more cautionary recommendation for breastfeeding by mothers who have tested HIV-positive UNLESS replacement feeding is shown to be acceptable, feasible, affordable, sustainable and safe, and the firm recommendation for breastfeeding of babies who have already tested HIV-positive:

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

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<sup>48</sup> Creek T, Arvelo W, Kim A, Lu L, Bowen A, Finkbeiner T, Zaks L, Masunge J, Shaffer N and Davis M. Role of infant feeding and HIV in a severe outbreak of diarrhea and malnutrition among young children, Botswana, 2006. Session 137 Poster Abstracts, Conference on Retroviruses and Opportunistic Infections, Los Angeles, 25-28 February, 2007. <http://www.retroconference.org/2007/Abstracts/29305.htm>

<sup>49</sup> WHO, UNICEF, UNAIDS, UNFPA 2007, HIV and infant feeding, new evidence and programmatic experience, Report of a Technican Consultation held on behalf of the Inter-agency Task Team (IATT) on prevention of HIV infections in pregnant women, mothers and their infants, Geneva, Switzerland, 25-27 October 2006, ISBN 978 92 4 159597 1. Available at [http://whqlibdoc.who.int/publications/2007/978241595971\\_eng.pdf](http://whqlibdoc.who.int/publications/2007/978241595971_eng.pdf)

<sup>50</sup> WHO, UNICEF, UNAIDS, UNFPA 2007, HIV Transmission Through Breastfeeding: a review of available evidence, HIV Transmission through breastfeeding, 2007 update, ISBN 978 92 4 159659 6. Available at [http://whqlibdoc.who.int/publications/2008/9789241596596\\_eng.pdf](http://whqlibdoc.who.int/publications/2008/9789241596596_eng.pdf)

<sup>51</sup> WHO, UNICEF, UNAIDS, UNFPA 2007, HIV and infant feeding, Update, based on the technical consultation held on behalf of the Inter-agency Task Team (IATT) on Prevention of HIV infection in pregnant women, mothers and their infants, Geneva, 25-27 October 2006, ISBN 978 92 4 159596 4. Available at [http://whqlibdoc.who.int/publications/2007/9789241595964\\_eng.pdf](http://whqlibdoc.who.int/publications/2007/9789241595964_eng.pdf)

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

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

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

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

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

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

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

9. HIV-infected mothers who breastfeed should be:

- a. assisted to ensure that they use a good breastfeeding technique to prevent breast problems, which should be treated promptly if they occur;
- b. provided with specific guidance and support when they cease breastfeeding to avoid harmful nutritional and psychological consequences and to maintain breast health.

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

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

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

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

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

The guidelines emanating from the 2006 Technical Consultation bring us full circle, reiterating grave concerns expressed by experts several decades previously about the use of breastmilk substitutes in areas where poverty makes its use unsafe and unsustainable.<sup>52</sup> Two actions are urgently required:

- Dissemination of the new Policy to every health worker who has contact with HIV-infected mothers and their babies, and
- Implementation of the new Policy through revised and updated, evidence-based training for healthcare staff and HIV and infant feeding counsellors.

## Conclusion

The claim that HIV is transmitted through breastfeeding does not make formula-feeding any safer today. Formula feeding is consistently associated with a higher risk of infant mortality than breastfeeding,<sup>43 53 54</sup> whether used from birth or as a means to achieve premature weaning from the breast.<sup>44</sup> Consequently it should be discouraged in all but the rarest instances.

For the overwhelming majority of HIV-exposed babies, the weight of current evidence favours exclusive breastfeeding for 6 months to prevent mother-to-child HIV transmission<sup>55 56 57 58</sup> and to prolong the lives of already infected babies. Thereafter

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<sup>52</sup> Latham MC, Kisanga P, Current status of protection support and promotion of breastfeeding in four African countries: actions to protect, support and promote breastfeeding in Botswana, Kenya, Namibia and Uganda, based on a rapid review 2 Oct – 3 Nov 2000, Prepared for UNICEF ESARO March 2001.

<sup>53</sup> Coovadia H & Coutsooudis A, HIV, infant feeding and survival: old wine in new bottles, but brimming with promise. *AIDS* 2007;21(14):1837-1840.

<sup>54</sup> Coutsooudis A, Coovadia HM & Wilfert CM, HIV, infant feeding and more perils for poor people: new WHO guidelines encourage review of formula milk policies, *Bulletin of the World Health Organization* 2008;86:210–214.

<sup>55</sup> Iliff PJ, Piwoz EG, Tavengwa NV, Zunguza CD, Marinda ET, Nathoo KJ, Moulton LH, Ward BJ, the ZVITAMBO study group and Humphrey JH. Early exclusive breastfeeding reduces the risk of postnatal HIV-1 transmission and increases HIV-free survival. *AIDS* 2005, 19:699–708.

<sup>56</sup> Palombi L, Marazzi MC, Voetberg A, Magid NA. Treatment acceleration program and the experience of the DREAM program in prevention of mother-to-child transmission of HIV. *AIDS*. 2007 Jul;21 Suppl 4:S65-71.

<sup>57</sup> Coovadia HM, Rollins NC, Bland RM, Little K, Coutsooudis A, Bennish ML, Newell M-L. Mother-to-child transmission of HIV-1 infection during exclusive breastfeeding in the first 6 months of life: an intervention cohort study. *Lancet* 2007 March 31;369:1107-16.

HIV-free survival for the majority of older babies is likely to be enhanced by promotion of continued breastfeeding with the addition of complementary foods for up to two years or beyond, in line with current guidelines outside the context of HIV.<sup>33</sup>

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<sup>58</sup> Coovadia H, Kindra G. Breastfeeding to prevent HIV transmission in infants: balancing pros and cons. *Curr Opin Infect Dis.* 2008 Feb;21(1):11-5.