

How applicable are the 2010 WHO guidelines for infant feeding in the context of HIV in low income countries like Uganda?

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This rapid response was prepared by the Uganda country node of the Regional East African Community Health (REACH) Policy Initiative.

Key messages

- The principles and recommendations for infant feeding in the context of HIV, given by the World Health Organization in 2010 are generally consistent with the previous ones released in 2006
- Those released in 2010, now recommend that each country decides which infant feeding practice will be **primarily** promoted and supported by Maternal and Child Health services, that is, either breastfeeding with an antiretroviral intervention to reduce transmission or avoidance of all breastfeeding



Who requested this rapid response?

This document was prepared in response to a specific question from a Senior Health policymaker in Uganda.

! This rapid response includes:

- **Summary of research findings**, based on one or more systematic reviews of research on this topic
- **Relevance** for low and middle income countries

X Not included:

- Recommendations
- Cost assessments
- Results from qualitative studies
- Examples or detailed descriptions of implementation

What is the SURE Rapid Response Service?

SURE Rapid Responses address the needs of policymakers and managers for research evidence that has been appraised and contextualised in a matter of hours or days, if it is going to be of value to them. The Responses address questions about arrangements for organising, financing and governing health systems, and strategies for implementing changes.

What is SURE?

SURE – Supporting the Use of Research Evidence (SURE) for policy in African health systems - is a collaborative project that builds on and supports the Evidence-Informed Policy Network (**EVIPNet**) in Africa and the Regional East African Community Health (**REACH**) Policy Initiative (see back page). SURE is funded by the European Commission's 7th Framework Programme.

www.evipnet.org/sure

Glossary

of terms used in this report:

www.evipnet.org/sure/rr/glossary

- Where antiretroviral therapy is available, mothers known to be HIV-infected are now recommended to breast-feed until 12 months of age
- It is still recommended that replacement feeding should not be used unless certain conditions are met, like safe water and sanitation being assured at household level and in the community

Background

Mother-to-child transmission (MTCT) of HIV is the major way in which children become infected with HIV. Mother-to-child transmission can take place when the child is still in the mother's uterus, around the time of birth, or after birth through breastfeeding (1). In several studies conducted in Sub-Saharan Africa, breastfeeding was shown to contribute substantially to overall mother-to-child transmission of HIV infection contributing to as much as 42% of transmission (2). Transmission increased as the duration of breastfeeding increased (from 1.6% at three months of age to 9.3% at 18 months of age). There are other characteristics too that may affect this including characteristics of the breast milk, of the mother and infant as well.

In addition to the major progress made in preventing mother-to-child transmission of HIV before and around the time the baby is born, in many resource-rich settings, mothers with HIV infection are counselled not to breastfeed their children, and are instead advised on feasible and affordable alternatives to breastfeeding. However, in parts of the developing world where the majority of mothers with HIV infection live, complete avoidance of breastfeeding may often not be feasible or possible, for example, because of inability to afford replacement feeding.

The guidelines

The principles and recommendations for infant feeding in the context of HIV, given by the World Health Organization in 2010 are generally consistent with the previous ones released in 2006; these released in 2006 recommended that all HIV-infected mothers receive counselling, including provision of general information about risks and benefits of various infant feeding options, and specific guidance in selecting the feeding option most likely to be suitable for their individual situation. It also called for mothers to be supported in their choices regarding infant feeding (3). However, those released in 2010, in addition recognize the contribution of the recent evidence on the deliberation of the effects of anti-retroviral therapy during the breastfeeding period (4). They also now recommend that each country decides which in-

fant feeding practice will be primarily promoted and supported by Maternal and Child Health services, that is, either breastfeeding with an antiretroviral intervention to reduce transmission or avoidance of breastfeeding altogether. (This is different from the previous recommendations in which health workers were expected to individually counsel all HIV-infected mothers about the various infant feeding options, and it was then for the mothers to decide between them).

Where antiretroviral therapy is available, mothers known to be HIV-infected are now recommended to breastfeed until 12 months of age. The suggestion that replacement feeding should not be used unless it is acceptable, feasible, affordable, sustainable and safe (AFASS) is still recommended although the short form, AFASS, is replaced by more common, everyday language. The guidelines also give guidance on several situations that may arise, for example, what to do in the absence of ARVs recognizing that they would not be rolled out everywhere immediately.

Summary of the evidence for the guidelines

Breastfeeding is advantageous for a number of reasons which include the fact that it significantly decreases infant morbidity and mortality by providing optimal nutrition, and protects against common childhood infections like gastrointestinal and respiratory tract infections, among other things (5). It is particularly important in resource-limited settings like Uganda where many mothers may not afford the costs of formula feeds and other breast milk substitutes. In many of these settings access to clean water may also be limited and so increases the risk of diarrhoea if replacement feeding is to be used. However, the risk with breastfeeding is that HIV is transmitted through human milk, leading to the dilemma that the use of replacement feeding, while protecting an infant against HIV infection,

How this Response was prepared

After clarifying the question being asked, we searched for systematic reviews, local or national evidence from Uganda, and other relevant research. The methods used by the SURE Rapid Response Service to find, select and assess research evidence are described here:

www.evipnet.org/sure/rr/methods

What the quality of evidence (GRADE) means

The quality of the evidence is a judgement about the extent to which we can be confident that the findings of the research are correct. These judgements are made using the GRADE framework, and are provided for each outcome. The judgements are based on the type of study design (randomised trials versus observational studies), the risk of bias, the consistency of the results across studies, and the precision of the overall findings across studies. For each outcome, the quality of the evidence is rated as high, moderate, low or very low using the definitions below.

⊕⊕⊕⊕

High: We are confident that the true effect lies close to what was found in the research.

⊕⊕⊕○

Moderate: The true effect is likely to be close to what was found, but there is a possibility that it is substantially different.

⊕⊕○○

Low: The true effect may be substantially different from what was found.

⊕○○○

Very low: We are very uncertain about the effect.

For more information about GRADE:

www.evipnet.org/sure

could also place the same infant at risk of morbidity and mortality from other infections. Furthermore, in the developing world including some parts of Uganda, there are even more problems to deal with both culturally and socially if one avoids breastfeeding; mothers opting not to breastfeed their children are stigmatized in many cultures, which may compromise adherence to a replacement-feeding regimen (6). They are often assumed to be infected with HIV, leading to HIV-associated stigma. Even in situations where an HIV-associated stigma does not exist, exclusive breastfeeding can be difficult for mothers, especially for those who have responsibilities that take them away from their children during the day; many mothers in Uganda have day jobs in both the formal and informal sectors. In these instances, a child is forced to receive mixed feedings, that is, breast milk when with their mothers, and alternative feeding options when the mother is away. As Maternal and Child health authorities choose which method to promote in their countries, they need to pay attention to these issues of everyday living and how they affect the practicability of the option chosen, and what they can do to ease the burden on the affected population.

Three interventions have been identified to deal with mother-to-child-transmission of HIV due to breastfeeding but the new guidelines lay emphasis on the first and last of those listed below, incorporating the second within the third option:

- complete avoidance of breastfeeding
- exclusive breastfeeding
- antiretroviral prophylaxis to the breastfeeding infant.

Complete avoidance of breastfeeding

Complete avoidance of breastfeeding would be an obvious intervention to prevent HIV transmission through breast milk (5). However the decision, it is recommended, should be made after considering the following pertinent issues (4):

- socio-economic and cultural contexts of the populations served by maternal and child health services
- availability and quality of health services
- local epidemiology including HIV prevalence among pregnant women
- main causes of maternal and child under- nutrition and infant and child mortality
- international recommendations

A systematic review done to collate and assess the evidence regarding interventions to decrease late postnatal mother-to-child-transmission of HIV, and to determine the efficacy of such interventions in decreasing late postnatal mother-to-child-transmission of HIV, found that complete avoidance of breastfeeding is efficacious in preventing mother-to-child-transmission of HIV, but that this intervention has significant associated morbidity like diarrheal morbidity if formula is prepared without clean water (5). Morbidity associated with complete avoidance of breastfeeding, in addition to the cost of purchasing formula or other replacement milk and the stigma associated with not breastfeeding, are significant, and in many situations make this intervention impossible. And so many mothers might opt for breastfeeding their infants despite the risks involved.

Exclusive breastfeeding and antiretroviral prophylaxis to the breastfeeding infant

In the event that breastfeeding is initiated, two interventions have been found to be efficacious in preventing transmission, that is, exclusive breastfeeding and extended anti-retroviral prophylaxis. The systematic review done to collate and assess the evidence regarding interventions to decrease late postnatal mother-to-child-transmission of HIV found that breastfed children who also received solids had higher rates of mother-to-child-transmission of HIV as well as higher three-month mortality rates when compared to those exclusively breastfed (5).

Another systematic review was done to determine whether, and to what extent, antiretroviral regimens aimed at decreasing the risk of mother-to-child transmission of HIV infection achieve a clinically useful decrease in transmission risk, and what effect these interventions have on maternal and infant mortality and morbidity (7). The authors concluded that short courses of antiretroviral drugs are effective for reducing mother-to-child transmission of HIV and are not associated with any safety concerns in the short-term. Some of the evidence from this systematic review is presented in the tables below.

Table 1:

Anti-retrovirals versus Placebo.

HIV positive breastfeeding mothers and their infants

Settings: Thailand, South Africa, Cote d'Ivoire, Burkina Faso**Intervention:** Antiretroviral therapy**Comparison:** Placebo

Interventions	Impact	Number of studies	Quality of the evidence (GRADE)
ZDV given to mothers from 36 to 38 weeks gestation, during labor and for 7 days after delivery, with no treatment to infants	<ul style="list-style-type: none"> Significantly reduced HIV infection at all time intervals* by 30-35% 	3	⊕⊕⊕○ Moderate
ZDV given to mothers from 36 weeks gestation and in labor but not to babies	<ul style="list-style-type: none"> Significantly reduced HIV infection at 4-8 weeks and 3-4 mths 44% and 37% respectively 		
A combination of ZDV and 3TC given to mothers at 36 weeks gestation through labor and continued for 7 days after delivery, and for first 7 days to the infant	<ul style="list-style-type: none"> Significantly reduced HIV infection and HIV infection or death at 4-8 weeks by 63% and 61% respectively 		
A combination of ZDV and 3TC given to mothers from the start of labor until 7 days after delivery, and for first 7 days to the infant	<ul style="list-style-type: none"> Significantly reduced HIV infection by 42% and HIV infection and death by 36% at 4-8 months 		
A combination of ZDV and 3TC given to mothers during labor only with no treatment to the infant	<ul style="list-style-type: none"> Did not reduce the risk of HIV infection at 4-8 weeks or 18 months 		

GRADE: GRADE Working Group grades of evidence (see bar on the right)

*Time intervals considered included: 4-8weeks, 3-4months, 6, 12, 18months

Longer versus shorter treatment**Patients or population:** HIV positive breastfeeding mothers and their infants**Settings:** Thailand, South Africa, Cote d'Ivoire, Burkina Faso,**Intervention:** Longer treatment (ZDV given to mothers from 36 weeks and during labor)**Comparison:** Shorter treatment (ZDV given to mothers during labor and to their babies for the first 3 days of life)

Outcomes	Impact	Number of trials	Quality of the evidence (GRADE)
HIV infection rates at birth, 4-8 weeks, 3-4 months, 6 months, 12 months	HIV infection rates were not significantly different in both groups at all the time intervals.	1	⊕⊕⊕○ Moderate

GRADE: GRADE Working Group grades of evidence (see bar on the right)

Anti-retroviral Regimens using different drugs and durations of treatment.

Patients or population: HIV positive breastfeeding mothers and their infants

Settings: Thailand, South Africa, Cote d'Ivoire, Burkina Faso

Intervention and comparison: Different drug regimens

Outcomes	Impact	Number of studies	Quality of the evidence (GRADE)
A single dose of NVP given to mothers at the onset of labor plus a single dose of NVP given to their babies immediately after birth compared with ZDV given to mothers during labor and to their babies for a week after birth	<ul style="list-style-type: none"> Lower HIV infection rates at 4-8 weeks, 3-4 months, 12 months and 18 months by 36-41%. In addition, the NVP regimen significantly reduced the risk of HIV infection or death at 4-8 weeks, 3 to 4 months, 12 months and 18 months by 32-42%. 	3	⊕⊕⊕○ Moderate
A single dose of NVP given to mothers at the onset of labor plus a single dose of NVP given to their babies immediately after birth plus ZDV given to babies for 1 week after birth compared with a single dose of NVP given to mothers at the onset of labour plus a single dose of NVP given to their babies immediately after birth alone	<ul style="list-style-type: none"> No difference in HIV infection at 4 to 8 weeks 		
A single dose of NVP given to babies immediately after birth plus ZDV given to babies for 1 week after birth compared with a single dose of NVP given to babies only	<ul style="list-style-type: none"> Significantly reduced the HIV infection rate at 4 to 8 weeks by about 37% 		

GRADE: GRADE Working Group grades of evidence (see bar on the right)

Conclusion

The 2010 principles and recommendations not differing greatly from the previous ones are applicable to low income countries which hold majority of the HIV infected mothers and infants for who feeding choices in light of their status may be a predicament; the scenarios and conditions considered in these guidelines are a reality in these low income countries. The guidelines are however flexible enough to cater for those not affected by the dilemma of making a choice and are able to either do away with breastfeeding altogether or afford supplementation with formula feeds and also those that choose to breast feed but can access antiretroviral therapy. Developing countries have a mixed socio-economic population and so these guidelines provide for each of the categories in the society.

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This summary was prepared by

Dr. Rhona Mijumbi, Supporting Use of Research Evidence for Policy (SURE Project), Office of the Principal, College of Health Sciences, Makerere University, New Mulago Hospital Complex, Administration Building, 2nd Floor, P.O Box 7072, Kampala, Uganda

Conflicts of interest

None known.

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For more information contact

Dr. Rhona Mijumbi, mijumbi@yahoo.com



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