



Infant Feeding **in the Context of HIV** FACILITATOR'S MANUAL



THE SOUTH TO SOUTH PARTNERSHIP FOR COMPREHENSIVE FAMILY HIV CARE AND TREATMENT PROGRAM (S2S)

South Africa has the largest HIV burden of any country in the world, with an estimated 5.7 million people living with the virus. Women and children remain at the centre of the pandemic in terms of transmission, vulnerability and potential for impact.

To continue to build on the existing successes of South Africa's antiretroviral (ARV) program, the capacity for HIV disease management must be enhanced. It is essential that HIV disease management transition from an individual case management to a family-centred and chronic-care approach targeting and prioritising pregnant women and children. Enrolling pregnant women and children into HIV care and treatment early and regularly can prevent new HIV infections and reduce morbidity and mortality, effectively sustaining the quality of life of mothers, their children, and their families.

The scale up of effective prevention of mother-to-child transmission (PMTCT) and paediatric ARV care and treatment programs are crucial in the fight against HIV but are challenged by many factors including perceived complexity of treating pregnant women and children, inadequate paediatric and PMTCT knowledge and clinical skills, lack of psychosocial and adherence support, delays in integrating PMTCT services with antenatal and child health management systems, and gaps in referral systems.

The South to South Partnership for Comprehensive Family HIV Care and Treatment Program (S2S), a collaboration between the Department of Paediatrics and Child Health, Stellenbosch University, Cape Town, and the International Centre for AIDS Care and Treatment Programs (ICAP), Mailman School of Public Health, Columbia University, New York, aims to address these gaps in support of quality HIV care and treatment services. This is accomplished through the provision of comprehensive technical, programmatic, capacity building and systems support for healthcare workers at public health care facilities throughout South Africa by integrating and strengthening PMTCT, paediatric HIV and adherence and psychosocial (APS) programs.

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DISCLAIMER

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MODULE 4

Infant Feeding in the Context of HIV



DURATION

575 minutes (9 hours, 35 minutes)*

*The 9 hours 35 minutes required to teach this module is not inclusive of breaks. It is recommended that this material be taught over the course of at least two or more days and that the practical follow the two days of classroom study.



LEARNING OBJECTIVES

By the end of this module, participants will be able to:

- Summarise South Africa's infant feeding recommendations.
- Summarise current infant feeding practices in South Africa.
- Discuss the provision of ARVs to pregnant and breastfeeding women with HIV.
- Discuss the advantages and disadvantages of exclusive breastfeeding.
- Discuss the factors that increase risk of postnatal MTCT and how to prevent these factors or minimise their impact.
- Summarise the reasons to express breast milk.
- Discuss the advantages and disadvantages of formula feeding.
- Discuss the conditions needed to safely formula feeding.
- Provide an overview of the risks associated with formula feeding and how to prevent these risks.
- Understand the steps in the infant feeding counselling session.
- Discuss how growth monitoring information determines assessment and messages provided in the infant feeding counselling session.
- Discuss how the HIV test results affect messages provided during the infant feeding counselling session.



CONTENT

- 4.1 Introduction (50 minutes)
- 4.2 ARVs and Postnatal Transmission (45 minutes)
- 4.3 Breastfeeding (2 hours)
- 4.4 Formula Feeding (1 hour, 40 minutes)
- 4.5 Infant Feeding Counselling in the Context of HIV (2 hours)
- 4.6 Infant Feeding Counselling and Other Health interventions (2 hours, 20 minutes)



METHODOLOGY

Facilitated presentation, true/false quiz, group discussion, case studies in small and large groups



MATERIALS AND RESOURCES

- Markers, flip chart, tape, calculator, ensure that participants have copies of the case studies, which should be in their Participant Manuals.

- Copies of the Road to Health booklet and head circumference growth chart.



WORK FOR THE FACILITATOR TO DO IN ADVANCE

- **Review the module**, both technical content and the training exercise, carefully starting at least a couple of weeks in advance. Give yourself plenty of time to learn the material so that you can present and facilitate discussions.
- **For exercises 2, 5, 7 and 8:** review the case studies to ensure that they are appropriate. You may want to discuss the case studies and answers with an experienced healthcare worker.



FOREWORD FOR FACILITATORS



This training, which includes both classroom and clinical experiences, is designed to be implemented in — or at least near — a clinical setting. The ideal setting is a classroom or meeting space adjacent to a clinic. This training is designed for a multi-disciplinary group of healthcare workers, probably from a single clinic but maybe from a couple of clinics, who will be trained in a clinic setting. The ideal number of participants is anywhere from 12-20.

This module, Module 4: Infant Feeding in the Context of HIV, includes technical content, advice on how to plan and teach the technical content, exercises as well as answers to the exercises. The companion Participant Manual includes the key technical content.

USING THIS FACILITATOR MANUAL

Keep the Facilitator Manual with you each day for use as a reference, but avoid reading directly from it during sessions. This module is organised into six sessions. Each session starts with an outline of the suggested steps for teaching the session in the shaded box entitled “Session overview for facilitators”. The session technical content follows and includes boxes entitled “Facilitator instructions” to offer advice on how to facilitate discussion and teach the content.

To support discussion of the infant feeding in the context of HIV, it is suggested that this module is taught in a manner that is highly interactive, rather than the tradition lecture style. The facilitator should engage all participants and encourage them to contribute to the group.

COURSE SCHEDULE

This course should take approximately nine and a half hours to teach in the classroom. Additional time will be needed for breaks, practising and demonstrating the content covered in this module. The amount of time needed for this clinical component will depend upon the baseline knowledge and experience of participants, as well as the availability of mentors who can supervise clinical practise. Because of the intensity of the content and need for breaks including lunch, it is recommended that the course is taught over at least two days. The course could be organised in any of the following ways, depending on participant availability:

- Over one and a half or two consecutive days as described in the course schedule below.
- Every afternoon for three or four afternoons. The three or four afternoons could be consecutive or over the course of a couple of weeks. This configuration would

give participants an opportunity to spend the morning in clinic where they have opportunity for clinical practice.

- On two consecutive or alternate Saturdays.

A course schedule appears below, but the facilitator should feel free to re-structure the course to best fit participants' schedules.

Course schedule

Day 1	
Time	Content
8.00	Welcome and introductions
8.30	4.1 Introduction (50 minutes)
9.20	4.2 ARVs and Postnatal Transmission (45 minutes)
10.05	4.3 Breastfeeding (2 hours)
10.30	Morning break
10.45	Finish Session 4.3.
12.20	4.4 Formula Feeding (1 hour, 40 minutes)
13.00	Lunch
14.00	Finish Session 4.4
14.30	Afternoon break
14.45	Finish Session 4.4
15.15	4.5 Infant Feeding Counselling in the Context of HIV (2 hours)
16.00	Question and Answer and close for day
Day 2	
Time	Content
8.00	Summary of key points from yesterday and questions
8:15	Finish Session 4.5
9.30	4.6 Infant Feeding Counselling and Other Health interventions (2 hours, 20 minutes)
10:15	Morning break
10.30	Finish Session 4.6
12.05	Question and answer, course evaluation
13.00	Completion of course

MANAGING TIME

Estimated times are included in this manual for each lecture and exercise. All of the curriculum content is important; however, the facilitator should acknowledge the particular needs, knowledge, and experience level of the group and make adjustments accordingly. For example, in areas where growth measurement and plotting is well established, less time is required to teach Session 4.6. This will allow more time to be spent on sessions that are less familiar to participants.

AMENDING OR REPLACING EXERCISES

The facilitator should feel free to change, replace or drop training exercises that appear in this module. There are many reasons a facilitator may wish to adapt an exercise. For example, if the session has been simplified to suit participant learning needs, exercises may also have to be simplified.

When substituting an exercise in the module with one that is more relevant to participant learning needs, the facilitator should ensure that all the points to be included in the debriefing are included as part of the new exercise. For example, if the facilitator wants to ensure that key issues about early infant diagnosis are emphasized in a case study, s/he should design a case that includes an infant at the six-week postnatal check up and questions to elicit discussion about HIV testing.

When adapting, amending, or replacing an exercise, the facilitator should ask these questions:

1. Is the new exercise consistent with the content in the session?
2. Does the new exercise fit in the amount of time available?
3. Does the new exercise contribute to the variety of exercises in the module as a whole?
4. Are the activities in the new exercise clearly described, step-by-step?
5. Does the new exercise give participants an opportunity to synthesise and apply newly learned technical content?
6. What advantages does the new exercise have over the original exercise?
7. What materials will be needed?

FACILITATOR PREPARATION CHECKLIST

Daily preparation

Each day, arrive with enough time to set up the materials and equipment, and arrange the furniture and audiovisual equipment in a way that fosters learning and teamwork.

Session content and additional materials

In advance of the training, familiarise yourself with the content of the sessions you will be teaching, including the exercises. National guidelines and policies should be available for reference. Although you, as the facilitator, may not be able to answer every question, you should try to master the curriculum content and related support materials.

Room set up

An informal arrangement is more comfortable than a classroom-type arrangement, which creates a formal “lecture” atmosphere. Set up the room so participants can see each other and facilitators have space to walk around. Arrange the seating so that during lectures, participants will be able to see the flipcharts and see the slides and/or overheads on a screen.

Ensure that the physical environment is comfortable and well-lit. Create a

psychological environment where participants feel accepted, respected, and supported; this will facilitate participation.

Consultation with co-facilitators

If you are teaching with another facilitator, consult with your co-facilitator prior to the training to coordinate your presentations and other training activities. Facilitators should be willing and available to assist with their colleague's sessions, particularly with the small group exercises but also taking notes on flipchart.

Goals and objectives

To focus the training, display on a white or blackboard or on a flipchart, the module objectives and the training ground rules.

Course equipment, materials, and teaching aids

Have the following materials available if possible:

- Overheads or PowerPoint slides for the module
- Overhead or LCD projector and extra extension cord/lead (where available)
- Flipchart or whiteboard and markers or blackboard and chalk
- Pencil or pen and writing paper for each participant
- A clock or watch to keep track of time
- Anonymous Question Bowl (or Basket or Envelope) — see below — where participants can submit questions they do not want to ask in front of the group
- Relevant documents and other materials, such as national guidelines

Be sure that all educational equipment (overhead projector, screen, and/or computer) are in good working order and that materials (flipcharts, white or blackboard, markers, pens, pencils, paper or note cards, tape) are available. Additional materials may be necessary for some exercises, check the Facilitator Manual.

Strategies for daily review of key points

If the training spans more than one day, start successive days with a short summary of key points from the previous day's training. The summary of key points from the previous day can be accomplished in any number of ways:

- Write the key points on the board or flipchart in the morning before participants arrive.
- Present key points using a lecture and question-answer format.
- Use a large group discussion format, asking the group, for example: "What were the most important points from yesterday's presentation?" The facilitator should then add any additional key points that the group may have missed.
- Divide participants into small groups (or pairs) and give the groups about five minutes to write down the three most important points from the previous day's presentations. After the groups re-convene, ask the groups to summarise the points that they identified.
- Once the key points have been summarised, ask participants if they have questions about the material covered the previous day.

ANONYMOUS QUESTION BOWL, BASKET, OR ENVELOPE

Some questions are difficult to ask in a group. One way to encourage participants to ask questions is to set up a question bowl, basket, or envelope along with paper and a pen or pencil, somewhere near the door or on the way to the most used room exit.

Tell participants about the bowl or envelope, show them where it is. Invite them to submit questions or feedback about the course or course content at any time by writing their question on a piece of paper and placing the paper in the bowl or envelope. Explain that the questions may include concerns about themselves, their families, co-workers, or clients. Participants may also use the anonymous question bowl to provide feedback about the course.

Check the bowl daily, perhaps after lunch or before finishing for the day. The facilitator should read the questions aloud to the group and respond if she or he knows the answer. If the facilitators do not know the answer and the question is technical, they should look it up and get back to participants. If a question concerns a topic that is to be covered later in the course, let participants know this (and record the question someplace, like a “Parking Lot” so that it will not be forgotten). If the question is controversial, the facilitators may consider posing the question to the group for discussion.

Introduce the Anonymous Question Bowl (Basket or Envelope) in the first half hour of the training, probably just after introductions.

ENDNOTE TO FACILITATOR FOREWORD

As a course facilitator, you are a catalyst of learning, not merely an instructor. Encourage participants to identify what they want to get out of the course (their personal aims and objectives for the course) — perhaps they can do this as part of an introductory exercise. As a facilitator, you will help them accomplish those aims and objectives.

Remember — all members of the group respect and learn from each other's unique skills, perspectives, and life experiences.



SESSION 4.1: INTRODUCTION



SESSION DURATION

50 minutes



SESSION LEARNING OBJECTIVES

- Summarise South Africa's infant feeding recommendations.
- Summarise current infant feeding practices in South Africa.



SESSION OVERVIEW FOR FACILITATORS

- Step 1:** Start the training by introducing yourself (if participants don't know you) and providing a one minute overview of your experience in infant feeding and HIV.
- Step 2:** Ask participants to introduce themselves. Ask they state their names and something about themselves, such as how long they have been working in HIV, the number of years they have been providing women with support around infant feeding, and their expectations for this training. If everyone knows each other, ask participants to say one fun thing about themselves that nobody here knows (this could be anything from "my favourite colour is purple," to "when I was a child I wanted to be an astronaut").
- Step 3:** Review the course learning objectives, which you will find on page 4-1 of this manual. Tell participants that the training is interactive and that they will be expected to contribute to the discussion. Encourage participants to ask questions throughout the course — the discussions triggered by participant questions supports mastery of skills.
- Step 4:** Introduce infant feeding in the context using the content entitled "Module Introduction". Then provide an overview of South African infant feeding recommendations.
- Step 5:** Discuss current infant feeding practices in South Africa.
- Step 6:** Facilitate Exercise 1.
- Step 7:** Provide an overview of the remaining session in this module.
- Key Points:** The key points for this session are:
- Current infant and young child feeding practices in South Africa fall far short of recommendations. As a result of poor feeding practices, under-five mortality is relative high as is postnatal MTCT.
 - The Department of Health recommends that women who are

HIV-negative or whose HIV status is unknown breastfeed exclusively for the first six months of life and then introduce complementary foods while continuing breastfeeding for 24 months or longer.

- For women with HIV, safer infant feeding starts with ensuring access to HIV-related care. All pregnant women with HIV should receive ARV therapy, if eligible, or ARV prophylaxis and provided with comprehensive HIV-related care, including cotrimoxazole preventive therapy (CPT). All HIV-exposed infants should receive ARV prophylaxis and CPT.
- In addition, it is recommended that women with HIV exclusively breastfeed for the first six months of life unless formula feeding is AFASS — in which case the mother may choose to exclusively formula feed for the first six months of life.
- All infants, regardless of HIV status, need complementary foods starting at six months of age. From six months, breastfeeding mothers should continue to breastfeed — while formula feeding caregivers should continue to give formula — along with complementary foods.

Initiate each section through facilitated discussion, using the key questions (in the “Facilitator Instructions” boxes) below. When you present the content, you need only cover the material not already mentioned during the discussion.

MODULE INTRODUCTION

Adequate nutrition during infancy and childhood is critical to child health and development. Globally, under nutrition is a leading cause of childhood mortality. Inappropriate feeding practices such as sub-optimal or no breastfeeding and inadequate complementary feeding, remain the greatest threat to child health.¹ Just look at some of the facts illustrating the extent of malnutrition in South Africa:

- Out of every 1,000 children born, 67 will die before reaching the age of five.
- AIDS is the main cause of death among children under five (40% of deaths), followed by diarrhoeal disease (10-15%), respiratory infections (7%), low birthweight (6%) and protein energy malnutrition (5%).

Of the leading causes of death among the under fives, all five are indirectly or directly related to malnutrition. Even HIV is intimately related to nutrition status and feeding practices. Children with HIV are at risk of malnutrition because of:

- Insufficient food intake
- Malabsorption of nutrients
- Increased metabolism — HIV infection places increased energy demands on the body
- Chronic diarrhoea
- Effects of antiretroviral (ARV) medications (also referred to as “ARVs”)
 - ARVs may alter nutrient absorption, metabolism, distribution and excretion.

¹ Department of Health, South Africa. 2007. *Infant and Young Child Feeding Policy*.

- The side effects of some ARVs can cause loss of appetite, change in taste and diarrhoea and alter food absorption.

HIV is a major problem amongst South Africa's children:

- Some 245,000 children under 14 years of age are living with HIV infection.
- There is still no evidence of a decline in infections among pregnant women in South Africa, where more than 29% of women accessing public health services tested HIV-positive in 2008 (Department of Health, 2009).

Of the 1.1 million babies born every year in South Africa, 300,000 are born to HIV-positive mothers. In 2006 it was estimated that

- About 63,000 (21%) of the 300,000 babies became infected with HIV
- About 25,000 (40% of the 63,000) became HIV-positive through breastfeeding from the infected mother.²

The impact of infant feeding counselling

When pregnant women with HIV are identified early, they can be ensured access to early PMTCT services. PMTCT interventions, including ARVs and quality infant feeding counselling, can reduce the number of HIV-infected infants born to women with HIV in South Africa from 63,000 to a figure closer to 9,000 (5%³). Once the 2010 PMTCT guidelines on initiation of ARV therapy and prophylaxis are adapted country-wide, this figure can be further reduced, possibly as low as 1%.

By reducing MTCT through breastfeeding from 23% to more like 5%, quality infant feeding counselling, alone, can save over 16,000 babies from HIV every year.

Studies have shown that globally, inadequate support for infant and young child feeding is the main contributing factor to inappropriate feeding practices. There is a need for healthcare workers to be trained to enhance knowledge and skills on appropriate infant and young child feeding practices so that they can provide quality counselling and adequate support to parents. The purpose of this module is to support healthcare workers to prevent MTCT by ensuring all clients with HIV are taking ARVs, their infants provided with ARV prophylaxis and cotrimoxazole preventive therapy (CPT), and by providing quality infant feeding counselling to their clients. Quality counselling can reduce not only the prevalence of inappropriate feeding practices leading to high infant mortality rates but it can also reduce mother-to-child transmission of HIV (MTCT), diarrhoea, respiratory infections, malnutrition and minimise the effects of poor nutrition on HIV infection.

² UNICEF, Second Edition, 2006. *Saving Children, Enhancing Lives, Combating HIV and AIDS in South Africa.*

³ UNICEF, 2008. *Annual Report 2008 South Africa*, page 12.

SOUTH AFRICA INFANT FEEDING RECOMMENDATIONS



FACILITATOR INSTRUCTIONS

- To encourage discussion, ask:
 - *How does the South Africa Department of Health recommend that infants of mothers who are HIV-negative be fed in the first two years of life?*
 - *What is the recommendation for mothers of unknown HIV status?*
 - *What is the recommendation for infants of mothers who are HIV-positive?*
 - *What are the key changes in the new recommendation for HIV-exposed infants in comparison to those released in 2006/7?*

[Answer: The government now encourages breastfeeding unless replacement feeding is AFASS (Acceptable, Feasible, Affordable, Sustainable and Safe). Breastfeeding should continue for a year (rather than six months). All HIV-exposed infants are given ARVs for six weeks and breastfed infants receive extended ARV prophylaxis for the duration of breastfeeding, unless the mother is on ARV therapy for her own health.]

INFANT FEEDING GUIDING PRINCIPLES

The guiding principles of infant feeding in the context of HIV are:

- Balance HIV prevention with protection from other causes of infant and child mortality. Feeding practices by HIV positive mothers should support the greatest likelihood of HIV free survival of their children and not harm the mother's health.
- Integrate infant feeding counselling and support and other HIV interventions (including counselling and testing, CD4 testing, ARV therapy, ARV prophylaxis, and CPT) into MCH services. The starting point for all intervention to protect infants from HIV infection is to identify which pregnant women are HIV infected and then to offer them the necessary care and support to optimise their health.

INFANT FEEDING RECOMMENDATIONS — BACKGROUND

Breast milk alone is the ideal nourishment for infants for the first six months of life as it contains all the nutrients, antibodies and hormones an infant needs to thrive. It protects babies from diarrhoea and respiratory infections and stimulates the development of their immune system, which allows children to fight off disease.

Breastfeeding also has many health and emotional benefits for the mother, including decreased blood loss postpartum, improved uterine involution, delayed return to fertility and decreased risk of cancer of the breast and ovaries. Immediate postpartum breastfeeding helps the bonding between mother and infant. Because of the benefits of breastfeeding, the government of South Africa recommends breastfeeding for:

- Women who **are** HIV-negative
- Women who **are** HIV-infected unless formula feeding is acceptable, feasible, affordable, sustainable and safe (AFASS)

INFANT FEEDING RECOMMENDATIONS FOR MOTHERS WHO ARE HIV-NEGATIVE OR OF UNKNOWN HIV STATUS

The following are the recommendations for women who are *not* HIV-infected or who do not know their HIV status:

- Breastfeed exclusively for the first six months of life and then introduce complementary foods while continuing breastfeeding for at least 24 months.
- Mothers whose status is unknown should be offered HIV testing and counselling to address barriers to HIV testing.

Preventing HIV infection during pregnancy or breastfeeding

If a woman becomes infected with HIV during pregnancy or while breastfeeding, the risk of MTCT is very high (higher than if she was infected before she got pregnant) due to high viral load at onset of infection. Therefore it is very important that women are encouraged to test with their partners, if that is not possible then they should refer their partner for testing. All women should also be provided with information on the importance of staying negative, what they should do to stay negative and informed of the risks associated with new HIV infection during pregnancy and breastfeeding.

Exclusive breastfeeding — definition

An infant receives only breast milk and no other liquids or solids, not even water, but may receive drops or syrups consisting of vitamins, mineral supplements or medicines that are deemed necessary and essential for the child. When expressed milk is given, the preferred term is breast milk feeding.

INFANT FEEDING RECOMMENDATIONS FOR MOTHERS WHO ARE LIVING WITH HIV

The current South Africa infant feeding recommendations for mothers living with HIV are summarised below:

- Women who are HIV-infected and their HIV-exposed infants should be provided with the HIV-related care they need. Women who are eligible should receive lifelong ARV therapy. Maternal ARV therapy reduces the risk of HIV transmission during pregnancy, labour, delivery and during the breastfeeding period. All women not yet eligible for lifelong ARV therapy should be given ARV prophylaxis.
- All HIV-exposed infants should receive NVP once daily for the first six weeks regardless of feeding choice to reduce the risk of MTCT.
- Starting at six weeks of age, all HIV-exposed infants should receive CPT. CPT should be continued until the child is confirmed HIV-negative.
- Women with HIV are encouraged to breastfeeding unless formula feeding is AFASS — Acceptable, Feasible, Affordable, Sustainable and Safe.
- **Women who choose to breastfeed** should do so exclusively for the first six months of life and then introduce complementary foods while continuing breastfeeding to 12 months of age. At 12 months:
 - If the child tested HIV-negative by PCR or is of unknown HIV status — breastfeeding should stop gradually (over a period of one month) if a nutritionally adequate and safe diet without breast milk can be provided.
 - If the child is known to be HIV-infected — mothers are strongly encouraged to continue breastfeeding as per the recommendations for the general population, that is, up to 24 months or beyond.
- Whether the child is HIV-infected or uninfected, breastfeeding should only stop once a nutritionally adequate and safe diet without breast milk can be provided.

- A woman who wishes to stop breastfeeding before it is recommended should be encouraged and supported to continue breastfeeding for the first 12 months. Breastfeeding until at least one year of age avoids many of the complexities associated with early cessation and the challenge of providing a safe and adequate diet without breast milk. Nonetheless, if a mother wants to stop breastfeeding, she should be supported to do so if it is safe (see Table 4.11) for her and her infant. If it is not safe, she should be advised and supported to continue breastfeeding with the introduction of complementary foods from six months of age.
- **Women for whom formula feeding is AFASS** (see conditions outlined in “Table 4.11: Key counselling questions for AFASS assessment”) and chose to formula feed should do so exclusively for the first six months of life and then introduce complementary foods while continuing formula feeding to 12 months of age.

Recommendations for safer infant feeding according to a woman’s HIV status are summarised in Table 4.1. (Also refer to National Infant Feeding Guidelines.)

Table 4.1: Infant feeding recommendation by HIV status

Client situation	Recommendation for the first 6 months	Recommendation beyond 6 months
HIV-negative women	Exclusive breastfeeding with no added foods or liquids	Introduce complementary foods while continuing to breastfeed till 2 years of age and beyond.
Women of unknown HIV status.	Exclusive breastfeeding with no added foods or liquids	Introduce complementary foods while continuing to breastfeed till 2 years of age and beyond. Encourage this group of women to test for HIV.
HIV-infected women	Exclusive breastfeeding with no added foods or liquids, unless formula feeding is AFASS* If infant is breastfeeding, ensure: <ul style="list-style-type: none"> • Infant and/or mother is on ARVs postnatally • Infant is on CPT from six weeks of age until breastfeeding cessation 	Introduce complementary foods while continuing to breastfeed to 12 months of age. At 12 months: <ul style="list-style-type: none"> • If the child is either HIV-uninfected or of unknown HIV status — breastfeeding should stop gradually if a nutritionally adequate and safe diet without breast milk can be provided. • If the child is known to be HIV-infected — continue breastfeeding till 2 years of age and beyond.
* Women for whom formula feeding is AFASS and who choose to formula feed, should do so exclusively for the first six months of life, introducing complementary foods at six months of age while continuing to formula feed to 12 months of age.		

Key Message

Exclusive breastfeeding, which is associated with decreased infant mortality, is best for *all* infants regardless of HIV status. This consistent and simple message must be provided to both HIV-negative and HIV-positive women.

SIX VERSUS TWELVE MONTHS



FACILITATOR INSTRUCTIONS

- To encourage discussion, ask:
 - *Why do you think the Department of Health now recommends mothers with HIV wean at 12 months (assuming their babies are HIV-negative or of unknown HIV status) rather than at six months as they did in the 2008 PMTCT guidelines?*

In the 2008 PMTCT guidelines, the national Department of Health recommended that women with HIV stop breastfeeding at six months of age if it was AFASS for them (this was in line with World Health Organization (WHO) recommendations at the time). In comparison, the 2010 guidelines recommend breastfeeding to **12 months of age**. There are a number of research findings that have led to the current recommendation that women with HIV breastfeed longer:

- Several recent studies have suggested that the risk of HIV transmission through breastfeeding is actually quite low (4% from six weeks to six months of age) if the mother breastfeeds exclusively. This risk is low even if the mother is not on ARV therapy. Breastfeeding can be made even safer, in terms of risk of MTCT, if the mother or child is on ARV therapy or prophylaxis.
- Children who are exclusively breastfed are less likely to get sick (in comparison to infants who were mixed fed or formula fed in the first six months).
- Breastfeeding to 12 months (rather than six) avoids the difficulties encountered in trying to provide an adequate diet to the non-breastfed infant from 6–12 months of age.

Balancing the risks and benefits of breastfeeding, WHO and the national Department of Health agree that for women with HIV, 12 months of breastfeeding capitalises on the maximum benefit of breastfeeding while reducing unnecessary long term risk of HIV infection. However, for the HIV-uninfected mother there are many other health benefits to her infant if she continues breastfeeding until 24 months.

CURRENT INFANT FEEDING PRACTICES



FACILITATOR INSTRUCTIONS

- To encourage discussion, ask:
 - *Given the government's recommendation on infant feeding, how many of the women you know or work with adhere to these recommendations? What percentage of South Africans do you think exclusively breastfeed for the first six months?*
 - *Why do think the percentage of women who breastfeeding exclusively for the first six months of life is so low?*
 - *What can we, as healthcare workers, do to address this?*

CURRENT PRACTICE

In South Africa, infant feeding practices are sub-optimal, with very low rates of exclusive breastfeeding in the first six months of life. Data from the 2003 South African Demographic and Health Survey (SADHS), and other studies show that although breastfeeding is a common practice in South Africa, mixed feeding — the giving of supplemental foods in addition to breast milk — rather than exclusive breastfeeding is the norm. The SADHS in 2003 found that only 11.9% of children aged 0 to 3 months were exclusively breastfed, and 20.1% of children age 0 to 3 months were not breastfed at all see Table 4.2, below).

Table 4.2: Infant feeding rates as reported in the SADHS

	1998 SADHS	2003 SADHS
Exclusive breastfeeding		
0–3 months	10.4%	11.9%
4–6 months	1.0%	1.5%
Not breastfed		
0–3 months	16.6%	20.1%

A study conducted in rural KwaZulu-Natal in 2002 found that, despite the implementation of the Baby-Friendly Hospital Initiative (BFHI) in the district, 46% of infants received non-breast milk fluids (primarily infant formula) within 48 hours of birth; only 10% of infants were exclusively breastfed for 6 weeks and 6% for 16 weeks. The most frequent reason for the early introduction of formula was perceived milk insufficiency. A study conducted to assess breastfeeding knowledge amongst healthcare workers in an area of high HIV prevalence revealed that healthcare workers' knowledge was outdated and not in line with the latest WHO recommendations.



FACILITATOR INSTRUCTIONS

- Lead participants through Exercise 1, which will help clarify the new South Africa recommendations related to breastfeeding by women living with HIV.

Exercise 1: Recommendations on HIV and infant feeding Small group work: participants break into groups of 3–5

Purpose	<ul style="list-style-type: none"> • To review the 2010 recommendations on infant feeding for mothers living with HIV.
Duration	30 minutes
Introduction	<p>Infant feeding counselling can be complex. The South Africa Department of Health has adopted many of the WHO recommendations on infant and young child feeding. During this exercise we will look at some of the WHO evidence-based statements and discuss what each means in practical terms for healthcare workers.</p>
Activities	<ul style="list-style-type: none"> • Ask participants to break into groups of 3–5. Encourage participants to work with people that they did not know before today. • Assign two of the following statements to each group (if not all of the statements is assigned, give one or two groups three statements); it is fine if more than one group receives a particular statement. <ul style="list-style-type: none"> • Exclusive breastfeeding in the first six months of life carries a lower risk of HIV transmission than mixed feeding. • Maternal ARV therapy reduces HIV transmission not only during pregnancy and labour but also through breastfeeding. • Infant ARV prophylaxis reduces the risk of MTCT through breastfeeding. • Cessation of breastfeeding before six months of age is associated with an increased risk of infant morbidity (especially diarrhoea) and mortality in HIV-exposed children. • Women — both women with HIV and those who are uninfected — are more likely to exclusively breastfeed for six months when they are provided with consistent messages and frequent, high quality counselling. • Mothers known to be HIV-infected (and whose infants are HIV uninfected or of unknown HIV status) should continue breastfeeding for the first 12 months of life. • In their small groups participants should answer the following questions about each of their statements: <ul style="list-style-type: none"> • <i>How does this statement translate into recommendations for practice?</i> • <i>Would implementing this recommendation mean a change from what we are doing now? Explain.</i> • <i>How would you turn this recommendation into counselling messages for mothers? Give examples.</i> • Suggest that groups take notes on flipchart paper. • After about ten minutes ask the groups to re-convene as a large

	<p>group. Go through the statements one-by-one in the large group. Once you've finished each statement, ask if the other groups that discussed that statement if they have anything to add. Ask if there are any questions and then go onto the next statement.</p>
Debriefing	<ul style="list-style-type: none"> Remind participants that national guidelines indicate we should encourage exclusive breastfeeding for the first six months of life, discourage mixed feeding during the first six months, support continued breastfeeding up till at least 12 months of age (longer if the child has tested HIV-positive), and ensure mothers and infants receive ARVs in accordance with national guidelines.

Answers Exercise 1: Recommendations on HIV and infant feeding	
<ul style="list-style-type: none"> Exclusive breastfeeding in the first six months of life carries a lower risk of HIV transmission than mixed feeding. 	<ul style="list-style-type: none"> <i>How does this statement translate into recommendations for practice?</i> <ul style="list-style-type: none"> All women, including women living with HIV, should be encouraged to exclusively breastfeed for the first six months of life. Women with HIV should be informed of the risks of mixed feeding. <i>Would implementing this recommendation mean a change from what we are doing now? Explain.</i> <ul style="list-style-type: none"> Participants will discuss. To facilitate discussion ask: "Do your clients breastfeed exclusively?" "Why or why not?" "What can we do to support exclusive breastfeeding for the first six months?" <i>How would you turn this recommendation into counselling messages for mothers? Give examples.</i> <ul style="list-style-type: none"> Women should be counselled on how to avoid mixed feeding. Counselling should include role plays to give mothers an opportunity to pretend defending exclusive breastfeeding.
<ul style="list-style-type: none"> Maternal ARV therapy reduces HIV transmission not only during pregnancy and labour but also through breastfeeding. Infant ARV prophylaxis reduces the risk of MTCT through breastfeeding. 	<ul style="list-style-type: none"> <i>How does this statement translate into recommendations for practice?</i> <ul style="list-style-type: none"> All women eligible for ARV therapy should receive it. ARV therapy is continued for life. All HIV-exposed infants should receive infant ARV prophylaxis. <i>Would implementing this recommendation mean a change from what we are doing now? Explain.</i> <ul style="list-style-type: none"> Participants will discuss. Facilitate discussion by asking: "Are women living with HIV who are eligible for treatment generally receiving it?" "Why or why not?" "What can you do to promote the use of infant ARV prophylaxis?"

	<ul style="list-style-type: none"> • <i>How would you turn this recommendation into counselling messages for mothers? Give examples.</i> <ul style="list-style-type: none"> • Women should be educated around the role of ARVs for PMTCT during breastfeeding and the importance of lifelong ARV therapy for their own health. • Women should be referred into HIV care and provided with follow up to support routine attendance and excellent adherence to their regimens. • Women and families should be supported to adhere to their ARV therapy regimen and their infant’s ARV prophylaxis regimen.
<ul style="list-style-type: none"> • Cessation of breastfeeding before six months is associated with an increased risk of infant morbidity (especially diarrhoea) and mortality in HIV-exposed children. 	<ul style="list-style-type: none"> • <i>How does this statement translate into recommendations for practice?</i> <ul style="list-style-type: none"> • Women should exclusively breastfeed for the first six months of life. Women with HIV — whose infants are HIV-uninfected or whose HIV status is unknown — should continue breastfeeding (with the introduction of complementary foods at six months) until their infants are about 12 months of age. Healthcare workers should NOT recommend cessation of breastfeeding before twelve months and actively discourage cessation before six months. • <i>Would implementing this recommendation mean a change from what we are doing now? Explain.</i> <ul style="list-style-type: none"> • Participants will discuss. Facilitate discussion by asking: “Do women living with HIV try to stop breastfeeding before 6 months?” “Do women with HIV try to stop breastfeeding before 12 months?” “If so, why?” “What can we do to support them to continue to breastfeeding longer?” • <i>How would you turn this recommendation into counselling messages for mothers? Give examples.</i> <ul style="list-style-type: none"> • Women should be encouraged and supported to breastfeed exclusively until their baby is six months old. • They should be supported to introduce nutritious complementary foods from six months of age and supported to continue breastfeeding to 12 months (or 24 months if the child has tested HIV-positive). • Women should be educated about the risks of formula feeding. • Healthcare workers are responsible for taking the time to enquire about a client’s home situation before recommending formula for those for whom it is safe.

<ul style="list-style-type: none"> • Women — both women with HIV and those who are uninfected — are more likely to exclusively breastfeed for six months when they are provided with consistent messages and frequent, high quality counselling. 	<ul style="list-style-type: none"> • <i>How does this statement translate into recommendations for practice?</i> <ul style="list-style-type: none"> • Women should be provided with quality infant feeding counselling to support them in implementing national infant feeding recommendations. • Every clinic should have a sufficient number of trained infant feeding counsellors. • Infant and child feeding is an ongoing process that must be followed up and supported over time. • <i>Would implementing this recommendation mean a change from what we are doing now? Explain.</i> <ul style="list-style-type: none"> • Participants will discuss. To facilitate discussion ask: “Do you think your clients follow your recommendations?” “Why or why not?” “What can we do to support them to follow recommendations?” “Does your clinic have an adequate number of training staff to meet need for infant feeding counselling?” “If not, what can be done about it?” • <i>How would you turn this recommendation into counselling messages for mothers? Give examples.</i> <ul style="list-style-type: none"> • Ensure clinic flow and staffing allow for IYCF counselling. • Ensure staff are aware of and understand national infant feeding recommendations and are able to provide accurate, high-quality counselling.
<ul style="list-style-type: none"> • Mothers known to be HIV-infected (and whose infants are HIV uninfected or of unknown HIV status) should continue breastfeeding for the first 12 months of life. <p>This statement is similar to the fourth statement above, discuss only content not already covered above.</p>	<ul style="list-style-type: none"> • <i>How does this statement translate into recommendations for practice?</i> <ul style="list-style-type: none"> • Mothers with HIV (whose infants are HIV-negative or whose HIV status is unknown) should be supported through infant feeding counselling to exclusively breastfeed their infants for the first six months of life, introducing appropriate complementary foods thereafter and continue breastfeeding for the first 12 months of life. • <i>Would implementing this recommendation mean a change from what we are doing now? Explain.</i> <ul style="list-style-type: none"> • Participants will discuss. Consider facilitating discussion by asking: “How long do your clients with HIV typically breastfeed their infants?” “What barriers exist for women living with HIV to breastfeed for 12 months?” “What can we do to support them to gradually wean the infant at about 12 months?” • <i>How would you turn this recommendation into counselling messages for mothers? Give examples.</i>

	<ul style="list-style-type: none">• Infant feeding counselling should support women to continue breastfeeding their infants to 12 months of age. If a mother is familiar with earlier recommendations to wean at six months, explain to her that national guidelines have changed based on new international research.• Women should be counselled to give safe, complementary foods to the baby starting at six months.
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OVERVIEW OF THE NEXT SESSIONS

Adequate infant feeding counselling is key to supporting women to enrol in HIV-related care, take their ARVs, administer ARV prophylaxis and CPT to their infants and make the right infant feeding choice to minimise risk of MTCT and protect their babies' health. The next session provides an overview of the importance of ensuring mothers with HIV have access to needed ARV drugs. The next two sessions outline the two options for feeding HIV-exposed infants during the first six months of life — exclusive breastfeeding and formula feeding. The last sessions support the participant to apply infant feeding knowledge to the infant feeding counselling session.



SESSION 4.2: ARVS AND POSTNATAL TRANSMISSION



SESSION DURATION

45 minutes



SESSION LEARNING OBJECTIVES

- Discuss the provision of ARVs to pregnant and breastfeeding women with HIV.



SESSION OVERVIEW FOR FACILITATORS

- Step 1:** Discuss use of ARVs in all pregnant women with HIV. First discuss how you decide if a woman with HIV should receive ARV therapy or ARV prophylaxis.
- Step 2:** Then discuss ARV therapy (when to start and which drugs).
- Step 3:** Provide a summary of ARV prophylaxis (when to start, which drugs and when to switch from ARV prophylaxis to ARV therapy).
- Step 4:** Give a quick overview of infant ARV prophylaxis.
- Step 5:** Provide a summary of follow up care of the HIV-exposed infant in the content of infant feeding.
- Step 6:** Facilitate Exercise 2.
- Key Points:** The key points for this session are:
- All pregnant and breastfeeding women with HIV should be on ARVs: either ARV therapy or prophylaxis.
 - All HIV-exposed infants should also be provided with ARVs.
 - At the six week follow up visit, all HIV exposed infants need both the routine package of services provided to all infants as well as HIV-specific services. HIV-specific services include initiation of CPT, HIV testing and a decision on continuation or discontinuation of NVP.

ARVS DURING PREGNANCY AND THE POST NATAL PERIOD: THE FIRST STEP



FACILITATOR INSTRUCTIONS

- To encourage discussion, ask:
 - *What's the first step to safer breastfeeding (in terms of MTCT)?* [Answer: ensuring the mother is on ARVs.]
 - *As per the new recommendations, how do you decide if a woman with HIV should be started on ARV therapy or prophylaxis?*
 - *If she should be started on lifelong ARV therapy, when should it be initiated?*
 - *How long should a mother be on ARV therapy before it is effective in protecting against MTCT through breastfeeding?* [Answer: it takes about 16 weeks to obtain undetectable viral load.]
 - *If she's to start on ARV prophylaxis, when should it be initiated?*
 - *How long is the infant ARV prophylaxis regimen?*
 - *Which drugs are used for infant ARV prophylaxis?* [Answer: NVP]

The first step to reducing risk of MTCT through breastfeeding has little to do with breastfeeding itself. The first step is to ensure that women with HIV who are pregnant or breastfeeding are on ARV therapy, if eligible. In addition, pregnant women not eligible for ARV therapy should be provided with ARV prophylaxis; the infants of breastfeeding women not eligible for ARV therapy should be provided with infant ARV prophylaxis.

ARVs not only reduce risk of HIV transmission during pregnancy and labour, but also postnatally, via breastfeeding. As it takes about 16 weeks of ARV therapy for the viral load to drop to undetectable, it is important to start pregnant and lactating women with HIV on ARV therapy as soon as possible, and for infants to take ARV prophylaxis — NVP — for (at least) the first six weeks of life.

PREGNANT WOMEN

The 2010 PMTCT guidelines⁴ recommend that all women who test HIV-positive should be on ARVs while pregnant. Women with a CD4 cell count less than or equal to 350 or WHO clinical stage 3 or 4 should receive lifelong ARV therapy. All other women who are HIV-infected should be put on ARV prophylaxis. A summary of the eligibility criteria for ARV therapy and ARV prophylaxis is in Table 4.3.

POSTNATAL WOMEN

- After delivery, women with HIV on ARV therapy should continue ARV therapy for life.
- Women provided with ARV prophylaxis during pregnancy should be screened for ARV therapy eligibility during the 12 months after delivery.
- At the six week and six month postnatal visit:
 - Draw blood for CD4 count

⁴ National Department of Health, South Africa and the South African National AIDS Council, 2010. *Clinical Guidelines: PMTCT (Prevention of Mother-to-Child Transmission)*

- Conduct clinical staging
- The 2010 PMTCT guidelines⁵ recommend that breastfeeding women with a CD4 cell count less than or equal to 350 or WHO clinical stage 3 or 4 should receive lifelong ARV therapy.
- Postnatal women not eligible for ARV therapy are not provided with ARVs after delivery; they stop taking ARV prophylaxis after delivery. Instead, their infants are provided with infant ARV prophylaxis as described in Table 4.3.
- By six months after delivery, all postnatal woman should transition to either the:
 - Wellness clinic for follow up (if they are not eligible for ARV therapy), or
 - ARV clinic for initiation of treatment.
- Because of their infant’s ongoing risk, ensure breastfeeding mothers are provided with the continuing support they need for the first full year: assistance with weaning, provision of infant ARV prophylaxis and screening for ARV therapy eligibility.

Table 4.3: Eligibility criteria for ARV therapy and prophylaxis

CD4 cell count available	
CD4 \leq 350 cells/mm ³	Lifelong ARV therapy Regardless of clinical stage
CD4 >350 cells mm ³	Lifelong ARV therapy only if clinically Stage 3 or 4 ; otherwise ARV prophylaxis
WHO clinical stage	
Stage 1	ARV prophylaxis
Stage 2	ARV prophylaxis
Stage 3	Lifelong ARV therapy
Stage 4	Lifelong ARV therapy

WHEN TO START AND WHICH DRUGS

LIFELONG ARV THERAPY

Taking ARV therapy during pregnancy, breastfeeding and life-long will improve the health of the woman and decrease the risk of transmitting HIV to the infant by decreasing the amount of virus in the mother’s blood. Because viral suppression takes about 16 weeks to take effect, pregnant and lactating women should be initiated on ARVs as soon as it becomes known that they are eligible.

A pregnant or breastfeeding woman eligible for ARV therapy should be fast-tracked to initiate treatment within **two** weeks, even if she is in the first trimester of pregnancy. If her CD4 <200 cells/mm³ or Stage 4, she should be fast-tracked to receive treatment within **one** week of diagnosis.

According to the 2010 “Clinical Guidelines: PMTCT”:

- **Start CPT** as per the “Clinical Guidelines for the Management of HIV & AIDS in Adults and Adolescents” (2010) (CD4 count \leq 200/mm³ or WHO stage II, III or IV).

⁵ National Department of Health, South Africa and the South African National AIDS Council, 2010. *Clinical Guidelines: PMTCT (Prevention of Mother-to-Child Transmission)*

- **Women already on lifelong ARV therapy** should continue their regimen as per ARV guidelines. If on EFV: substitute EFV with NVP only if still in the first trimester. If pregnancy is diagnosed after 14 weeks, continue EFV-containing regimen.
- **Women who initially test negative and subsequently test positive during pregnancy or breastfeeding:**
 - **Pregnant women:** conduct CD4 cell count and clinical staging; initiate onto AZT whilst awaiting the CD4 cell count result. If CD4 result is 350 or less the woman must commence lifelong ARV therapy within 1 or 2 weeks. If the CD4 is more than 350, then she continues on AZT throughout the pregnancy and re-evaluated at her six week and six month post natal visits.
 - **Breastfeeding women:** conduct CD4 cell count and clinical staging.
 - If the result of CD4 is 350 or less the woman must commence lifelong ARV therapy within 1 or 2 weeks; instruct her to (continue to) provide her baby with infant ARV prophylaxis until full viral suppression is achieved — 16 weeks after ARV therapy initiation.
 - If she is not eligible for ARV therapy, instruct her to (continue to) provide her baby with infant ARV prophylaxis until one week after complete cessation of all breastfeeding.

Table 4.4: ARV therapy regimen for pregnant women and women who are breastfeeding

<p>Recommended first-line ARV therapy for treating pregnant women and breastfeeding women:</p> <p>Tenofovir (TDF) + lamivudine (3TC) or emtricitabine (FTC) + nevirapine (NVP)</p> <p>The dose is consistent with 2010 “Clinical Guidelines: PMTCT” and is the same as for non-pregnant women. Monitor closely for toxicity, particularly when initiating nevirapine in treatment-naïve women.</p>
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ARV PROPHYLAXIS FOR PREGNANT WOMEN

ARV prophylaxis should be started any time from 14 weeks gestation in all pregnant women with HIV not already on ARV therapy. Women started on AZT can be transitioned to lifelong ARV therapy later if their CD4 cell count is found to be less than or equal to 350 cells/mm³.

Table 4.5: ARV prophylaxis

Timing	Drugs
Antenatal	AZT 300mg 12 hourly starting from 14 weeks gestation unless there are signs of anaemia (see box below). Continue AZT until delivery.
Intrapartum	<ul style="list-style-type: none"> • Single dose of NVP (200mg) and TDF (300mg) + FTC (200mg) — (if in false labour, do NOT give a second dose as this has the potential to cause drug resistance) • AZT 300mg 3-hourly (rather than 12-hourly) from the point when labour is recognised until delivery, not to exceed 1500mg/24 hours*

* Omit AZT in unbooked women diagnosed HIV-positive during labour who have no documented AZT prophylaxis. These women receive only the single dose of NVP (200mg) and TDF (300mg) + FTC (200mg).

ARV prophylaxis is not provided to breastfeeding women; instead infants of breastfeeding women not eligible for ARV therapy are provided with infant ARV prophylaxis for the duration of the breastfeeding period plus one week.

Contraindications for AZT — anaemia

- Draw blood for baseline haemoglobin (Hb) for all...
 - Women initiating AZT
 - Women on AZT who appear pale
- If woman's haemoglobin is <8g/dl or if she is clinically pale, discuss with a doctor before initiating AZT. The doctor may advise that AZT is replaced with TDF 300mg daily (with monitoring of creatinine clearance at baseline and then at 3 and 6 months).

ALL WOMEN WITH HIV

- Provide all women starting on ARV therapy or prophylaxis with ongoing adherence counselling to ensure that they do not miss doses.
- Provide all ANC clients with iron and folate supplementation.
- Provide follow up care: see all pregnant women or breastfeeding women initiated on lifelong ARV therapy two weeks after ARV therapy initiation to evaluate NVP hepatotoxicity and then monthly thereafter. Pregnant women initiated on ARV prophylaxis should be seen monthly. Monitoring for treatment failure and toxicity should follow the recommendations in the adult guidelines.

INFANT ARV PROPHYLAXIS

Initiate infant ARV prophylaxis — NVP is administered once daily — to all HIV-exposed infants, including those who are low birth weight infants and those with low Apgar scores. Although it is recommended to provide infant ARV prophylaxis within 6–12 hours after birth, it will still reduce risk of transmission of MTCT if initiated within 72 hours of birth. Duration of infant ARV prophylaxis depends on whether the mother is on ARV therapy and whether she is breastfeeding or formula feeding. The infant ARV prophylaxis regimens are described in Table 4.6.

Table 4.6: Infant ARV prophylaxis regimen

Mother's treatment status	Feeding method	Regimen*
Mother on lifelong ARV therapy	Breastfeeding	<ul style="list-style-type: none"> • If mother has taken ARVs for at least 3 months at time of birth: NVP at birth and then once daily for six weeks. • If mother has taken ARVs for less than 3 months at time of birth: NVP at birth and then once daily for six weeks or until viral suppression is achieved (whichever is later), e.g. at least 16 weeks of ARV therapy
	Formula feeding	NVP at birth and then once daily for six weeks
Mother on ARV prophylaxis during pregnancy	Breastfeeding	NVP at birth and then once daily until one week after complete cessation of all breastfeeding**
	Formula feeding	NVP at birth and then once daily for six weeks
Mother did not receive any ARVs before or during delivery	Breastfeeding	<ul style="list-style-type: none"> • NVP as soon as possible and then once daily until one week after complete cessation of all breastfeeding* • Assess maternal eligibility for ARV therapy within two weeks
	Formula feeding	<ul style="list-style-type: none"> • If <u>within</u> 72 hours of birth, initiate NVP immediately and then once daily for six weeks • If <u>more than</u> 72 hours since birth, do not give any ARVs • Assess maternal eligibility for ARV therapy within two weeks
* See dosing chart in Table 4.7, below		
** Adjust NVP dose for weight at every EPI clinic visit.		

Table 4.7: Nevirapine infant dosing chart

Age (weight)	Syrup 50mg/5ml	
Birth–6 weeks		
• Birth weight < 2,500 gram	10 mg/once daily	1 ml/once daily
• Birth weight ≥ 2,500 gram	15mg/once daily	1,5ml/once daily
≥6 weeks to 6 months	20mg/once daily	2ml/once daily
≥6 to 9 months	30mg/once daily	3ml/once daily
≥9 months to end of breastfeeding	40mg/once daily	4ml/once daily

Additional information about lifelong ARV therapy, infant and maternal ARV prophylaxis and the care, treatment and support needs of women with HIV can be found in Module 2, Prevention of Mother-to-Child Transmission of HIV.

HIV-EXPOSED INFANT FROM SIX WEEKS



FACILITATOR INSTRUCTIONS

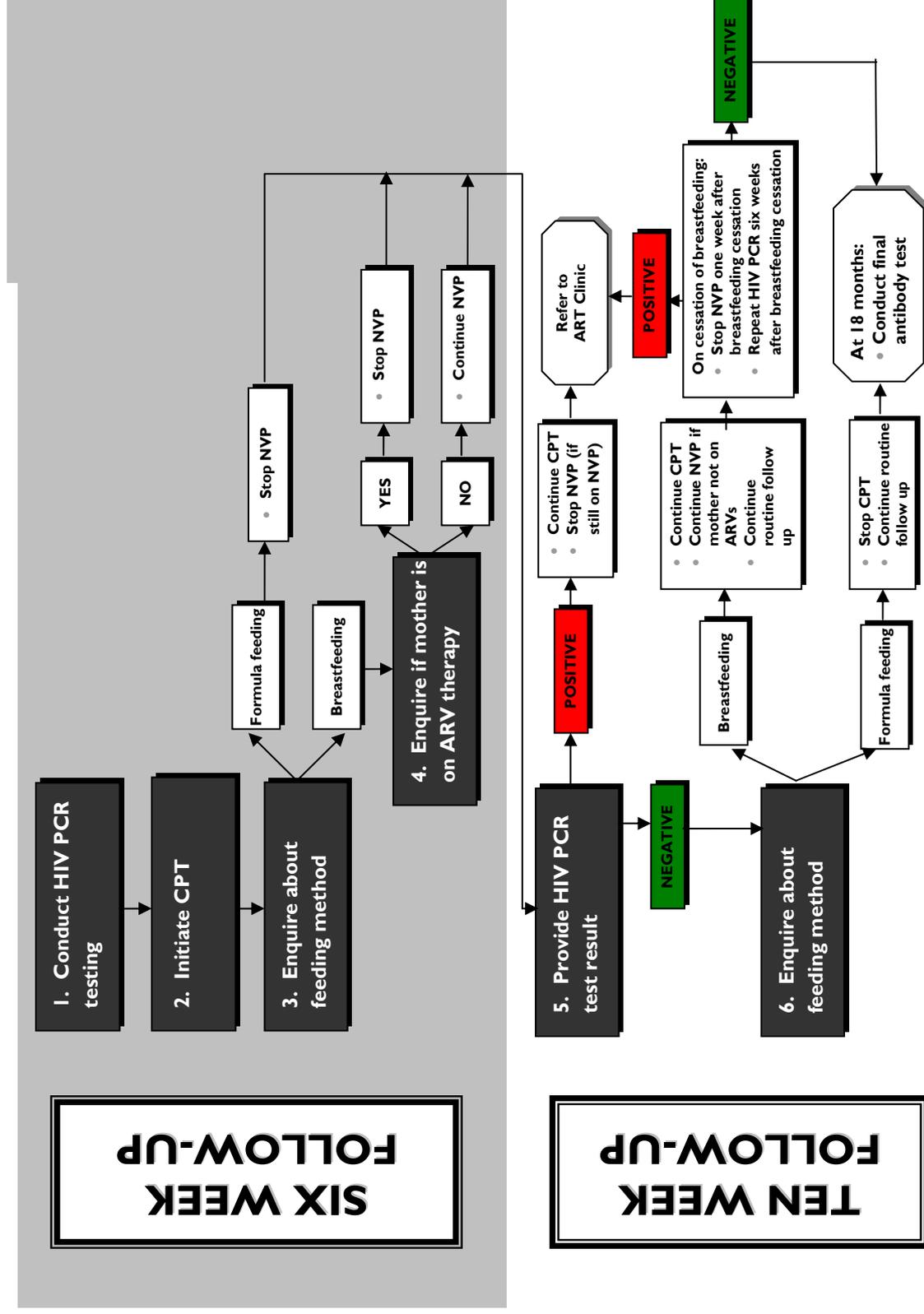
- To put ARVs into context, we're going to spend the next half hour or so discussing follow-up care of HIV-exposed infants.
- To encourage discussion, ask:
 - *When an HIV-exposed infant comes in for his/her six week postnatal visit, what are the three important HIV-related clinical interventions?* [Answer: HIV PCR testing, CPT and NVP continuation/discontinuation.]

It is important that the caregivers of HIV-exposed infants and children are provided with ongoing care so that they are supported to prevent MTCT. In addition to the basic package of care provided to all children, regardless of HIV status, children with HIV also need:

1. HIV PCR testing: all HIV-exposed children should be tested for HIV infection using HIV DNA PCR testing from six weeks of age. Blood is typically sent to a regional laboratory using dried blood spot (DBS) technology. Infant HIV testing is further described in Session 4.6, on page 111.
2. CPT: all HIV-exposed children need to be initiated on once daily cotrimoxazole starting from six weeks of age until all exposure to HIV via MTCT has passed (i.e. the mother has either decided not to breastfeed or completed all breastfeeding) and confirmed HIV-uninfected. The HIV-infected child will remain on CPT indefinitely. Cotrimoxazole is an antimicrobial medication that prevents bacterial infections, malaria and some diarrhoeal diseases as well as two important opportunistic infections — Pneumocystis pneumonia (PCP) and toxoplasmosis. CPT results in fewer opportunistic infections, improvements in quality of life, and increased survival in children, adolescents and adults with HIV.
3. A decision to continue/discontinue infant ARV prophylaxis (NVP). As noted previously this decision is based on the child's HIV status, infant feeding method (formula or breast) and whether or not the mother is on ARV therapy.

Figure 4.1 illustrates follow up care of HIV-exposed infants from six weeks of age.

Figure 4.1: Follow up of HIV-exposed infants from six weeks of age





FACILITATOR INSTRUCTIONS

- Facilitate “Exercise 2: Follow up of HIV-exposed infants from six weeks of age”.

Exercise 2: Follow up of HIV-exposed infants from six weeks of age

Small group discussion: participants break into groups of 3–5

Purpose	<ul style="list-style-type: none"> • To provide participants with opportunity to use Figure 4.1: Follow up of HIV-exposed infants from six weeks of age.
Duration	30 minutes
Introduction	<p>Prior to the 2009 revision of the PMTCT guidelines, we thought of postnatal PMTCT as involving only or primarily the prevention of HIV via breastfeeding. Given the now acknowledged role of ARVs and quality HIV care to PMTCT, this exercise is an opportunity for participants to think through the PMTCT services needed by an HIV exposed infant.</p>
Activities	<ul style="list-style-type: none"> • Divide participants into groups of 3–5 people. • Refer participants to the case studies (below and in the Participant Manual) and to Figure 4.1: Follow up of HIV-exposed infants from six weeks of age. • Divide the three case studies among the groups. • Give each group flipchart paper to record their answers. • Give the group 10 minutes to discuss their cases and answer the questions. • Have each group report their responses starting with case study 1. • Start the reporting by reading the case to the entire group. • After groups have discussed case study 1, follow the same procedure for reports on case studies 2 and 3. Note: To save time, ask groups, after the first group, to report about how their answers agreed or differed from the first group.
Debriefing	<ul style="list-style-type: none"> • It is important that healthcare workers start to re-frame postnatal PMTCT services as involving, not only infant feeding counselling, but also ARV therapy or prophylaxis and quality HIV related care, including CPT. • Remind participants that all HIV-exposed infants also need: <ul style="list-style-type: none"> • Routine care provided to all infants: enrolment in the baby register, monthly growth monitoring, infant feeding counselling and support, and immunisations. • Repeat HIV testing (by HIV PCR, assuming the child is less than 18 months old) six weeks after complete cessation of all breastfeeding. • HIV antibody testing at 18 months of age.

Exercise 2: Follow up of HIV-exposed infants from six weeks of age

Case Study 1: Raeesa

Reesa, who is 6 weeks old, is an HIV-exposed baby girl. She has arrived at your clinic today for her routine 6 week check up. Raeesa is breastfeeding exclusively.

- *Other than the routine package of care provided for all infants, what follow up care does she, as a breastfed infant, need because she is HIV-exposed?*
- *Should Raeesa continue with NVP tomorrow?*
- *If Raeesa tests HIV-positive, should she continue or discontinue NVP?*
- *Should Raeesa be started on CPT?*
- *If Raeesa tests HIV-positive, should she continue or discontinue CPT?*
- *When will you ask that she return to the clinic?*
- *How would the package of HIV-related care differ if she were formula fed exclusively?*

Case Study 2: Thabo

Thabo, who is HIV-exposed, attended his six week postnatal visit last month when he was tested for HIV and started on CPT. He is now 10 weeks old and has come in today for immunisations, growth monitoring and to receive his HIV test result. Thabo's mum was on ARV prophylaxis from 20 weeks gestation until delivery; she is exclusively breastfeeding Thabo. Thabo's HIV test result is negative.

- *Should Thabo start or discontinue CPT?*
- *Should Thabo continue or discontinue NVP?*
- *Had Thabo's mum been on ARV therapy since 35 weeks gestation, how would you have answered the question about continuing or discontinuing NVP?*
- *When will you ask that he returns to the clinic?*

Case Study 3: Simone

Simone, who is HIV-exposed, attended the clinic for her six week postnatal visit when she was six weeks old. Simone's mum has been on ARV therapy for a couple of years, well before she became pregnant with Simone. At the six week visit Simone was tested for HIV and started on CPT. Because she was formula fed, her mother was told to stop giving her NVP. Simone was never brought back to the clinic to receive her results until today, she is now four months old. Her PCR test is positive.

- *Was the decision to discontinue NVP a correct one?*
- *Should Simone continue or discontinue CPT?*
- *Had Simone tested HIV-negative how would your responses to the above questions have differed?*

Exercise 2: Follow up of HIV-exposed infants from six weeks of age
Suggested points for discussion

Case Study Question	Key Points
Case Study 1: Raeesa • <i>Other than the routine package of care provided</i>	Raeesa needs: <ul style="list-style-type: none"> • HIV PCR testing • To be initiated on CPT

<p><i>for all infants, what follow up care does she, as a breastfed infant, need because she is HIV-exposed?</i></p> <ul style="list-style-type: none"> • <i>Should Raeesa continue with NVP tomorrow?</i> • <i>If Raeesa tests HIV-positive, should she continue or discontinue NVP?</i> • <i>Should Raeesa be started on CPT?</i> • <i>If Raeesa tests HIV-positive, should she continue or discontinue CPT?</i> • <i>When will you ask that she return to the clinic?</i> • <i>How would the package of HIV-related care differ if she were formula fed exclusively?</i> 	<ul style="list-style-type: none"> • A decision on whether to continue/discontinue infant ARV prophylaxis (NVP), which is dependent on feeding method and mother's ARV therapy status. Ongoing reassessment is necessary. • Advice on continuing/discontinuing NVP depends on whether or not her mother is on ARVs (remember, Raeesa is breastfeeding): <ul style="list-style-type: none"> • If mother has been on ARV therapy for more than 4 months as of today's visit, stop NVP • If mother took ARV prophylaxis during pregnancy continue with NVP until one week after complete cessation of all breastfeeding. • When PCR test result is available (probably at the 10 week visit), review the decision to continue NVP. • Raeesa should discontinue NVP if she tests HIV-infected and be referred to ARV clinic for initiation of triple ARV treatment. • Yes. • Raeesa should continue CPT if she is HIV-infected. • Raeesa should return to the clinic for her routine immunisation visit, when she will also receive her HIV PCR test result, at 10 weeks of age. <p>It would be the same. At the six week visit:</p> <ul style="list-style-type: none"> • Do HIV PCR testing • Initiate CPT until HIV results known. • Make decision on whether to continue/discontinue infant ARV prophylaxis (NVP). Given that Raeesa is formula fed, she should stop NVP at six weeks, as there is no exposure to HIV.
<p>Case Study 2: Thabo</p> <ul style="list-style-type: none"> • <i>Should Thabo start or discontinue CPT?</i> • <i>Should Thabo continue or discontinue NVP?</i> • <i>Had Thabo's mum been on ARV therapy since 35 weeks gestation, how would you have answered the question about</i> 	<ul style="list-style-type: none"> • As Thabo is breastfed, he should continue CPT as he is exposed to HIV on an ongoing basis through breast milk. • As Thabo's mum is not currently on ARV therapy, Thabo should continue taking NVP until one week after complete cessation of all breastfeeding. • If Thabo's mum had started ARV therapy at 35 weeks gestation, as of today she would have been on ARV therapy for 15 weeks (five weeks before he was born, 10 weeks after), that is, assuming he was delivered at 40 weeks gestation. As it takes 16 weeks to obtain

<p><i>continuing or discontinuing NVP?</i></p> <ul style="list-style-type: none"> • <i>When will you ask that he returns to the clinic?</i> 	<p>undetectable viral load, Thabo would have needed to take NVP for one more week. He could have stopped NVP in his 11th week of life.</p> <ul style="list-style-type: none"> • Always review mother's ANC card and/or child's Road to Health Booklet to confirm date of ARV therapy initiation or gestational age at delivery (if needed). • He should return for routine immunisations and growth monitoring in 4 weeks (at the age of 14 weeks).
<p>Case Study 3: Simone</p> <ul style="list-style-type: none"> • <i>Was the decision to discontinue NVP a correct one?</i> • <i>Should Simone continue or discontinue CPT?</i> • <i>Had Simone tested HIV-negative how would your responses to the above questions have differed?</i> 	<ul style="list-style-type: none"> • Yes, it was correct. Because Simone was formula fed it was correct to stop NVP. • She should continue CPT. As Simone disappeared for 10 weeks, find out for how often and for how long Simone was given CPT. Use this opportunity to discuss the importance of CPT, why it needs to be taken every day and ways that Simone's caregivers can better remember to not only attend clinic regularly, but also remember to give prescribed medicines daily. • As Simone is HIV-positive, provide adherence counselling and refer to an experienced support group such as Mothers Two Mothers, in preparation for referral and initiation of ARV therapy. • <i>Was the decision to discontinue NVP a correct one?</i> The answer to this is still yes, it was correct to discontinue NVP. The decision to stop NVP was based on feeding method not assumed HIV status. • <i>Should Simone continue or discontinue CPT?</i> If Simone tested HIV-negative she should have stopped CPT. The decision about stopping/continuing CPT is dependant on HIV status.



SESSION 4.3: BREASTFEEDING



SESSION DURATION

120 minutes (2 hours)



SESSION LEARNING OBJECTIVES

- Discuss the advantages and disadvantages of exclusive breastfeeding.
- Discuss the factors that increase risk of postnatal MTCT and how to prevent these factors or minimise their impact.
- Summarise the reasons to express breast milk.



SESSION OVERVIEW FOR FACILITATORS

- Step 1:** Provide an overview of breastfeeding and the advantages and disadvantages of exclusive breastfeeding in the first six months of life.
- Step 2:** Facilitate Part 1 of “Exercise 3: Barriers to exclusive breastfeeding”. This exercise will be debriefed towards the end of the session.
- Step 3:** Provide an overview of the risk factors for postnatal MTCT. Then discuss how to decrease risk going through each of the risk factors in turn:
- Ensure mothers who are eligible are on ARV therapy to address risks associated with low CD4 cell count
 - Support mothers to avoid mixed feeding before six months of age
 - Encourage weaning at 12 months of age
 - Support mothers to prevent breast problems through quality counselling and support
- Step 4:** Facilitate Part 2 of “Exercise 3: Barriers to exclusive breastfeeding”, which is the final half of the discussion on barriers to exclusive breastfeeding started earlier in this session (Step 2).
- Step 5:** Discuss when and how to express breast milk.
- Step 6:** Facilitate Exercise 4, which is an opportunity to discuss barriers to expressing breast milk.
- Key Points:** The key points for this session are:
- Healthcare workers play an important role in supporting mothers to exclusively breastfeed for the first six months of live and to prevent problems associated with risk of MTCT: mixed feeding and breast conditions.
 - Proper attachment to the breast is the key to safer exclusive breastfeeding, i.e., breastfeeding that minimises the risk of MTCT. Proper attachment prevents breast conditions that increase the risk of MTCT through breastfeeding.

- Expressing breast milk is an important skill for mothers. Expressing breast milk allows mothers to deal with engorgement and to maintain exclusive breastfeeding when separated from their babies.
- Mothers with HIV may want to heat-treat expressed breast milk to reduce risk of MTCT during high risk periods.

Focus of this Session

- This Session does not cover the basics of breastfeeding, the assumption is that participants will be familiar with the basics through attendance on other courses, pre-service education or through personal experience.
- Instead, this Session focuses on breastfeeding in the context of HIV, in particular on aspects of breastfeeding that facilitate or prevent MTCT.
- It is strongly recommended that each healthcare clinic has at least one member of staff who has attended an infant feeding counselling training course.

EXCLUSIVE BREASTFEEDING IS BEST



FACILITATOR INSTRUCTIONS

- To encourage discussion, ask
 - *What are the advantages and disadvantages of exclusive breastfeeding?*

More than half of the deaths amongst children under the age of 5 years are associated with malnutrition or non-optimal breastfeeding. During the first six months of life, exclusive breastfeeding compared with mixed feeding has been shown to be associated with a reduced incidence of diarrhoea, respiratory infections and allergy. Breastfeeding is a key child survival strategy in resource-poor countries. There is also strong evidence that exclusive breastfeeding for the first six months may reduce the risk of obesity, chronic diseases including cardiovascular disease and cancer and improved educational levels and cognition later in life. Although breast milk can transmit HIV infection from mother to infant, that risk can be substantially reduced if the mother and/or infant is on ARVs and if the mother breastfeeds exclusively (rather than mixed feeds).

As noted in Session 4.1, the Department of Health promotes exclusive breastfeeding for the first six months of life for **all** infants, including infants who are HIV-exposed. As background information, a summary of the advantages and disadvantages of exclusive breastfeeding appear in the following table.

Table 4.8: Advantages and disadvantages of exclusive breastfeeding

Advantages	Disadvantages
<ul style="list-style-type: none"> • Breast milk is the perfect food for babies and protects them from many diseases, especially diarrhoea and respiratory illnesses and the risk of dying of these diseases. • Breastfeeding improves brain growth and 	<ul style="list-style-type: none"> • Risk of MTCT exists as long as a mother living with HIV breastfeeds because breast milk contains HIV. • Mother may be pressured, due

<p>development.</p> <ul style="list-style-type: none"> • Breast milk gives babies all of the nutrition and hydration they need. They do not need any other liquid or food for the first six months. • Breast milk is always available and does not need any special preparation. • Breastfeeding provides the close contact that deepens the emotional relationship or bond between mother and child. • Breast milk production increases with the baby's appetite so there is less chance that the baby is not getting enough food. • Exclusive breastfeeding for the first six months lowers the risk of passing HIV (compared to mixed feeding). • Breastfeeding also reduces the risk of water- and food-borne illness (e.g. diarrhoea) • Many women breastfeed, so people will not ask the mother why she is doing it. • Exclusive breastfeeding helps the mother recover from childbirth (promotes uterine involution, i.e., the return of the uterus to a non-pregnant state) and helps protect her from getting pregnant again too soon. 	<p>to family or cultural traditions, to give water, other liquids or foods to the infant while breastfeeding. This practice, known as mixed feeding, increases the risk of HIV, diarrhoea and other infections.</p> <ul style="list-style-type: none"> • Breastfeeding requires feeding on demand at least 8–10 times per day, and working mothers may find it difficult to breastfeed exclusively once they return to work unless they have adequate support (alternatively, they can express milk during the workday and arrange to store it in a cool place). • Breastfeeding mothers require an additional 500 kcal/day to support exclusive breastfeeding during the infant's first six months. This is the equivalent of one extra small meal a day.
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FACILITATOR INSTRUCTIONS

- Facilitate Part I of “Exercise 3: Barriers to exclusive breastfeeding”. This exercise will be debriefed later in this session.

Exercise 3: Barriers to exclusive breastfeeding, Part 1

Individual work

Purpose	<ul style="list-style-type: none"> • To encourage discussion about our own and our client barriers to exclusive breastfeeding. • To explore ways to empower clients to resist mixed feeding.
Duration	5 minutes
Introduction	Provide participants with five minutes to record on a sheet of paper the concerns that they have about exclusive breastfeeding. We'll use these concerns later in this session to further discuss barriers to exclusive breastfeeding and how we can assist our clients to overcome these barriers.
Activities	<ul style="list-style-type: none"> • Give participants about 3–5 minutes to record on a sheet of paper three concerns or questions that they have about exclusive breastfeeding. This can include concerns that they have about supporting clients to exclusively breastfeeding or about their clients

	being able to exclusively breastfeed. <ul style="list-style-type: none"> • Let them know that we will come back to their list of concerns at the end of this session.
Debriefing	<ul style="list-style-type: none"> • This exercise will be debriefed later in this session.

RISK FACTORS FOR MTCT DURING BREASTFEEDING



FACILITATOR INSTRUCTIONS

- To encourage discussion, ask
 - “What are the risk factors associated with MTCT during breastfeeding?”

The risk factors associated with MTCT during breastfeeding include the following:

- Advanced HIV disease — Women with low CD4 cell count and clinical signs or symptoms of advanced disease are more likely to transmit HIV during breastfeeding.
- No ARV therapy for women who are eligible — ARV therapy reduces the amount of HIV in the breast milk and improves the maternal CD4 count; not being on ARV therapy if eligible is associated with increased risk of MTCT.
- No infant ARV prophylaxis — ARVs reduce MTCT risk in HIV-exposed infants.
- Mixed feeding — Giving a baby other foods or drinks, including water or formula during the first six months of breastfeeding, dramatically increases risk of MTCT.
- Longer duration of feeding — The longer a child breastfeeds, the higher the risk of HIV-infection.
- Breast problems like mastitis or cracked nipples are associated with increased risk of MTCT.
- Acute maternal infection — If an uninfected woman becomes HIV-infected during lactation, the risk of MTCT is dramatically increased.

It makes sense that a breastfeeding mother can reduce risk of MTCT by addressing the factors listed above that are associated with transmission. Each of the risk factors will be discussed in turn, starting with the first three.

DECREASING THE RISK OF MTCT: ARVS



FACILITATOR INSTRUCTIONS

- To encourage discussion, ask
 - *Given that several of the factors associated with MTCT during breastfeeding have to do with low CD4 cell counts or not being on ARV therapy or prophylaxis, what can we do to ensure that all women with HIV who are pregnant or breastfeeding are getting ARVs as indicated by national guidelines?*
 - *What barriers are there to ensuring 100% of our clients who are pregnant or breastfeeding are on ARVs?*
 - *What can we, as healthcare workers, do to address these barriers? Give participants at least five minutes to discuss barriers to prescribing and taking ARVs and how to overcome these barriers.*

The first three risk factors associated with increased risk of MTCT (advanced HIV disease, no ARV therapy for women who are eligible, and no infant ARV prophylaxis) can all be addressed by ensuring that pregnant and breastfeeding women as well as HIV-exposed infants are provided with adequate counselling, support and ARVs as per national guidelines.

- **ARVs:** It is important that all pregnant and breastfeeding women with HIV who are eligible are on lifelong ARV therapy. All pregnant women with HIV not eligible for ARV therapy should be on ARV prophylaxis until delivery. ***All pregnant women and all breastfeeding women with a CD4 cell count less than or equal to 350 or WHO clinical stage 3 or 4 should receive lifelong ARV therapy.***
- **Infant ARV prophylaxis:** all HIV-exposed infants should be initiated on NVP soon after birth and supported to continue as per national guidelines.

ROLE OF THE HEALTHCARE WORKER

Given the effectiveness of ARVs in PMTCT, healthcare workers have a duty to:

- Inform all women with HIV about ARVs and their role in reducing MTCT not only during pregnancy and labour but also through breastfeeding.
- Ensure all pregnant women with HIV are on ARV therapy or prophylaxis as per national guidelines; ensure all breastfeeding women who are eligible are on ARV therapy.
- Inform women and their partners of the benefits of infant ARV prophylaxis, show them how to administer ARVs to their infant, and provide any other support they need to ensure they give their infant ARVs every day, once a day.
- Ensure all HIV-exposed infants are given ARVs as per national guidelines (see Table 4.6 and Table 4.7).
- Advise all breastfeeding mothers about the importance of CPT for the infant to protect from HIV-related infections; infants breastfed by HIV-infected mothers should take CPT once daily for the entire breastfeeding period.

DECREASING THE RISK OF MTCT: AVOID MIXED FEEDING



FACILITATOR INSTRUCTIONS

- To encourage discussion, ask
 - *If you're a mum with HIV and you mix feed (vs exclusively breastfeed) in the first six months of life, how much more likely are you to pass HIV to your baby? [Answer: if you mix feed with solids such as porridge, you are eleven times more likely to pass HIV to your baby.]*
 - *You've heard that mixed feeding increases risk of HIV, can you explain why?*
 - *Before I go further, I'd like to ask for someone to define mixed feeding. [Answer: giving water, other liquids, or solid foods in addition to breastfeeding during the first six months of life. It is important that "the first six months of life" is included in the definition.]*
 - *So, if a mum provides her five month old infant with porridge, is that mixed feeding? [Answer: yes.]. If she provided that same infant with porridge one month later, is that mixed feeding? Why or why not? [Answer: it is NOT mixed feeding, the*

infant is now six months old! The terms 'mixed feeding' pertains only to the first six months of life, after that, infants need additional nutritious foods. Also, after six months of age, a baby's gut will have matured so that it is unlikely to become irritated from the consumption of foods other than breast milk.]

- *What other risks are associated with mixed feeding in the first six months?*
- *What barriers do our clients face in trying to avoid mixed feeding in the first six months?*
- *How can we help them overcome these barriers? Give participants at least five minutes to discuss ways to encourage and support exclusive breastfeeding or exclusive formula feeding.*

RISKS OF MIXED FEEDING BEFORE SIX MONTHS OF AGE

Contrary to prevailing belief among not only clients, but also healthcare workers, breastfeeding is not only healthier for infants but there is now a significant body of data that confirms that exclusive breastfeeding in the first six months of life has a lower risk of MTCT than mixed feeding^{6,7}. Although mixed feeding is the most common infant feeding practice in South Africa, it is the riskiest feeding option in terms of HIV transmission.

Mixed feeding is when an infant less than six months old is provided with breast milk in combination with any other foods or liquids, including infant formula and milk from any source. Risks associated with mixed feeding before six months of age include:

- Increased risk of HIV transmission to the infant. Although breast milk does contain HIV, it also protects the intestinal mucosa, preventing HIV from passing into the blood. Before the age of six months, foods and drinks other than breast milk, even formula and water, irritate the lining of the baby's stomach. Such irritation allows HIV in the breast milk to pass into the infant's blood, infecting the infant. As such, the baby should not be introduced to foods other than breast milk until he or she is at least six months of age.
- Mixed feeding is associated with more breast health problems than is exclusive breastfeeding, which lead to increased viral load in the breast milk.
- Breast milk is often replaced with less nutritious foods.
- Increased risk of diarrhoea and pneumonia in infants due to ingestion of contaminated water, fluids, and food.

Exclusive breastfeeding vs mixed feeding

A recent study in KwaZulu-Natal found that postnatal HIV transmission for exclusively breastfed infants was 4% after five months. The study also demonstrated that infants who received formula milk and breast milk, were nearly *twice* as likely to be infected as exclusively breastfed infants. Breastfed infants who were given solid foods were nearly 11 times more likely to acquire HIV infection than were those who received breast milk only.

Exclusive breastfeeding vs formula feeding

The same study noted that the mortality in the first 3 months of life was roughly doubled

⁶ World Health Organization. 2006. *HIV and infant feeding technical consultation, Oct 25-27, 2006.*

⁷ Department of Health, South Africa. 2007. *Infant and Young Child Feeding Policy.*

in the formula fed group compared with the exclusive breastfed group (15% vs. 6%). This finding doesn't necessarily suggest that formula feeding is unsafe, as the mothers in this study who formula fed were more likely to have low CD4 cell counts (below 200 mm³), so infant death may have been due to higher rates of HIV transmission or because the mother was ill and less able to care for her infant). The study does, though, question the common assumption that formula feeding an HIV-exposed infant is safer than breastfeeding and it does reinforce the Department of Health's recent decision to recommend exclusive breastfeeding over formula feeding for women with HIV.

CHANGING CURRENT PRACTICE

How an infant feeding method is implemented by an individual mother will depend on the mother's knowledge and skill, which is shaped at least in part by what she learns from healthcare workers. The same study noted above (in KwaZulu-Natal) obtained 40% exclusive breastfeeding at six months. This study demonstrated that if HIV-infected women who chose to breastfeed receive adequate support it is possible for them to exclusively breastfeed.⁸ It is probably safe to assume that if a mother who chooses to formula feed receives adequate and sustained support that she too, will be more likely to follow national recommendations on formula feeding.

ROLE OF THE HEALTHCARE WORKER

Given the risks of mixed feeding, it is essential that healthcare workers:

- Emphasize the importance of breastfeeding exclusively for the first six months of life. Likewise, it is also important that healthcare workers ensure that mothers know it is important to introduce nutritious complementary foods starting from six months of age.
- Provide women with support to resist pressure to mixed feed in the first six months of life. Even vitamin or mineral supplements should only be provided when medically appropriate.
- Educate mothers for whom formula feeding is safe to do so exclusively. Formula feeding mothers who occasionally breastfeed, are actually mixed feeding. Even if they breastfeed only occasionally, their risk of MTCT is actually higher than it would have been had they exclusively breastfed (formula feeding is discussed in the next session).

DECREASING THE RISK OF MTCT: ENCOURAGE TIMELY WEANING



FACILITATOR INSTRUCTIONS

- To encourage discussion, ask
 - *Recalling from Session 4.1, when does the Department of Health recommend that women with HIV wean their babies? [Answer: at 12 months of age.]*
 - *Why not sooner? Why not later?*
 - *What can healthcare workers do to support mothers to follow national guidelines around timing of weaning?*

⁸ Department of Health, South Africa. 2007. *Infant and Young Child Feeding Policy*.

The longer a woman breastfeeds, the greater her risk of transmitting HIV to her infant. Recent studies have suggested that the breastfeeding to 12 months of age allows HIV-infected mothers to get maximum benefit from breastfeeding in terms of infant health while avoiding the complexities of stopping earlier (specifically the difficulty in providing an infant who is less than one year old with an adequate diet without breast milk).

ROLE OF THE HEALTHCARE WORKER

The role of the HCW is to:

- **Women with HIV whose infants are HIV-uninfected or whose HIV status is unknown:** encourage and support her to wean her infant at 12 months. At each visit starting from 10 or 11 months, healthcare workers should assess the safety of feeding with animal milk (in addition to complementary foods) and provide education and support for weaning at 12 months if safe. Support mothers to stop breastfeeding gradually (within a month), and to transition from breast milk to animal milk.
- **Women with HIV whose infants are known to be HIV-infected:** encourage and support her to continue breastfeeding to 24 months or longer.
- Support mothers to cup feed (rather than bottle feed) their children who have been weaned.

DECREASING THE RISK OF MTCT: PREVENT BREAST PROBLEMS



FACILITATOR INSTRUCTIONS

- To encourage discussion, ask
 - *Given that breast conditions such as sore nipples, engorgement, mastitis and breast abscesses are associated with MTCT, what can we do to help mothers prevent these breast conditions? [Answer: there are a lot of correct responses to this, but two of the most important are positioning and attachment.]*
 - *What can you, as a healthcare worker, do to assist a mother to position her baby correctly? What are some of the most common breastfeeding positions?*
 - *What can you, as a healthcare worker, do to assist mother to properly attach her breastfeeding infants?*
 - *How do you know if an infant is properly attached? Does anyone have a story from their own experience that they can share?*
 - *What do you think might be the results of a baby suckling in a poor position?*

Most breast and breastfeeding problems can be prevented by good positioning and correct attachment. A mother that correctly attaches her infant to the breast is less likely to experience sore nipples, engorgement and the conditions associated with engorgement including mastitis and breast abscesses — all of which increase risk of MTCT. Infant feeding counselling plays an important role in supporting women to position and attach their infants correctly.

POSITIONING THE BABY WHEN BREASTFEEDING

All mothers should be provided with support during ANC to properly position and attach their babies (using a doll and model breast), before they are discharged from the hospital and at every post-natal visit. Mothers who may need additional support include:

- New mothers who are breastfeeding for the first time
- Mothers who have difficulty with breastfeeding
- Mothers who bottle-fed previously and now want to breastfeed

When positioning the baby, ensure that

- Baby's whole body is held close to the breast and faces the breast
- If baby is young, the mother supports baby's whole body
- Baby's arms are not be wedged between the baby and mother's body
- Baby's head and body are in line
- Baby's bottom is supported and not resting on her lap

There are many positions in which mothers can breastfeed. What is important is that the baby is in a position to take enough breast tissue into the mouth so that he/she can suckle effectively. Below are breastfeeding positions for mothers who are seated and mothers who are lying down.

Figure 4.2 Breastfeeding positions for mother who are sitting



Underarm hold



Cradle hold

Underarm hold, description

- Mother holds infant at her side, lying on his back, feet pointing to the back with his head at the level of her nipple. Mother supports infant's head with the palm of her hand under the infant's head. Mother may use a pillow to help support the baby.

The underarm hold position is useful:

- For mothers with large breasts or inverted (flat) nipples
- For mothers with twins
- If the mother is having difficulty attaching her baby
- To treat a blocked duct
- If the mother prefers it

Cradle hold, description

- This is a commonly used position that is comfortable for most mothers.
- Mother holds infant with his head on her forearm (near bend of arm) and his/her whole body facing mother. Baby's arm should be tucked under mother's arm.
- Mother may use pillows to help support the baby.

The cradle hold position is useful:

- For very small babies
- For sick and disabled babies
- If the mother prefers it

Figure 4.3 Breastfeeding positions for mother who are lying down**Lying position, description:**

- The mother lies down on her side in a position in which she can sleep.
- A pillow under her head may help make her comfortable.
- She can support her baby with her lower arm. If necessary, she can support her breast with her upper arm.
- If she does not support her breast, she can hold her baby with her upper arm.
- Mother should keep baby's body straight; mother should not bend forward. Mother should bring baby as close to the breast as possible so that baby does not stretch to reach the breast.

The position is useful:

- When the mother wants to sleep
- Soon after a Caesarian section, when lying on her back or side may help her to breastfeed her baby more comfortably

There are many other positions for breastfeeding. For example, a mother can breastfeed standing up. If the baby has difficulty attaching to the breast, it sometimes helps if the mother lies on her front, propped on her elbows, with the baby underneath her. If the mother has an oversupply of milk (and the baby gets too much milk too quickly), she may prefer to lie on her back with the baby on top of her.

COMMON POSITIONING MISTAKES

Common mistakes include the following:

- Holding the baby too high (for example, sitting with the knees too high)
- Holding the baby too low (for example, with the baby unsupported, so the mother has to lean forward)
- Holding the baby too far to the side (for example, putting a small baby too far out in the “crook” of the arm, instead of the forearm)
- Offering the breast with fingers and thumb too close to the areola (including the scissor grip)
- Offering the breast while holding the breast in the “scissors” or “cigarette” hold
- Offering the breast while pinching up the nipple or areola between thumb and fingers, and trying to push the nipple into the baby’s mouth
- Offering the breast holding the breast away from the baby’s nose with a finger. If the mother is worried that the baby is too close to the breast, she can push the baby’s buttocks towards her to free the nose.

Assessing a breastfeed

- Greet the mother and ask: “How is the breastfeeding going?”
- Ask her to show you how she breastfeeds her baby.
- If the positioning of the baby or the baby’s attachment is not optimal, explain what might help. Demonstrate (with the baby or a doll) if necessary.
- Suggest she try that which you just demonstrated. Make sure that she is comfortable and relaxed.

Show her how to position the baby:

- Baby’s head and body should be straight
- Baby’s face should be facing her breast and his nose opposite her nipple
- Baby’s body should be close to her body
- Mother should support baby’s bottom (if newborn)

Show her how to support her breast:

- Fingers against her chest wall below her breast
- Thumb rests on top the breast
- Fingers should not be too near the nipple

Explain or show her how to help the baby attach to the breast:

- Touch baby’s lips with her nipple
- Wait for the baby’s mouth to open wide
- Move baby quickly onto her breast, aiming the lower lip below the nipple.
- Notice how she responds and ask her how her baby’s suckling feels.
- Look for signs of good attachment, if the attachment is not good, try again.

ATTACHMENT⁹

A baby’s attachment to the breast during breastfeeding is important — attachment affects the amount of milk taken.

⁹ Adapted from WHO. (2006): Infant and Young child Feeding Counselling: An Integrated Course. http://www.who.int/nutrition/publications/IYCF_Trainers_Guide.pdf

When a baby takes the breast into the mouth to suckle, notice if:

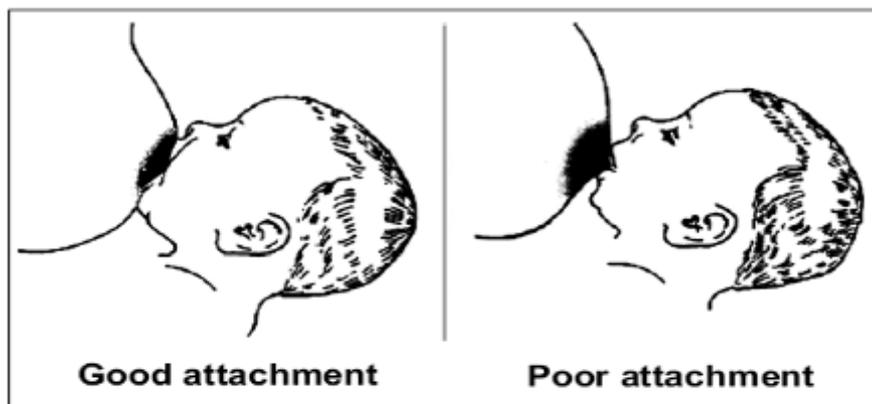
- The baby has taken the areola and the underlying tissues into his mouth. Note: Seeing a lot of areola is not a reliable sign of poor attachment. Some mothers have a very large areola, and you can see a lot even if the baby is well attached. It is more reliable to compare how much areola you see above and below a baby's mouth.
- The baby has stretched the breast tissue out to form a long "teat" and the nipple forms only about one-third of the "teat".
- The baby is suckling from the breast, not the nipple.

Notice the position of the baby's tongue:

- The baby's tongue should be forward, over the lower gums, and beneath the areola of the breast. The tongue should be cupped around the "teat" of breast tissue.
- When a baby suckles, the tongue presses the teat of breast tissue against the baby's hard palate. This presses milk out of the **lactiferous sinuses** (which are underneath the areola) into the baby's mouth so that it can be swallowed. A baby does not suck milk out of a breast; instead, he uses suction to pull out the breast tissue to form a teat, and to hold the breast tissue in his mouth. The action of the baby's tongue presses the milk from the lactiferous sinuses into his mouth. When a baby is well attached, he removes breast milk easily. This is called effective suckling.

If a baby is not well attached, the milk does not flow well. The infant may be unsatisfied, or feed often or for very long, and may fail to gain weight. The mother may believe that she does not have enough milk. It is important for a healthcare worker to show the mother how to improve her baby's position and attachment.

Figure 4.4 Good and poor breastfeeding attachment



In Figure 4.4, the baby in the picture on the left is well attached:

- The baby's chin touches the breast.
- His mouth is wide open.
- His lower lip is turned outwards.
- You can see more of the areola above his mouth and less below. This shows that he is reaching with his tongue under the lactiferous sinuses to press out the milk.

In Figure 4.4 the baby in the picture on the right is poorly attached:

- The baby's chin does not touch the breast.
- His mouth is not wide open and it points forward.
- His lower lip is not turned outwards.

- Only the nipple is in the baby’s mouth, not the underlying breast tissue.
- The areola is outside the baby’s mouth, so the baby’s tongue cannot reach the lactiferous sinuses, which are beneath the areola.

THE RESULTS OF POOR ATTACHMENT

- If a baby is poorly attached, and he “nipple-sucks”, it is painful for his mother. Poor attachment is the most important cause of sore nipples.
- As the baby sucks hard to try to get milk, he pulls the nipple in and out. This makes the skin of the nipple rub against his mouth. If a baby continues to suck in this way, he can damage the skin of the nipple and cause fissures (cracks).
- Suction on the tip of the nipple can cause a fissure across the tip. Rubbing the skin at the base of the nipple can cause a fissure around the base.
- A nipple fissure can easily bleed when the baby is breastfeeding, especially when attachment remains poor. This increases the MTCT risk through breastfeeding.

Poor attachment and ineffective suckling can result in:

- The breasts may become engorged.
- The baby may be unsatisfied, because the breast milk comes slowly. The baby may cry a lot and want to feed often, or for a very long time at each feed.
- The baby may not get enough breast milk. Baby may become frustrated and refuse to feed.
- The baby may fail to gain weight.
- The breasts may produce less milk, because the milk is not removed.

Poor attachment can make it seem as though a mother is not producing enough milk. In other words, she has an apparently poor milk supply. Then, if the situation continues, her breasts may really produce less milk. In either situation, the result may be poor weight gain in her baby and breastfeeding failure. Mothers may then resort to mixed feeding.

Causes of poor attachment

- “Nipple confusion” or “sucking confusion” due to bottle feeding: the action of sucking from a bottle is different from suckling from the breast. Babies who have had some bottle feeds may try to suck on the breast as if it is a bottle.
- Inexperienced mother: If a mother has not had a baby before, or if she bottle-fed or had difficulties breastfeeding previous babies, she may have difficulty getting her baby well attached to her breast. However, even mothers who have previously breastfed successfully sometimes have difficulties as well.
- Functional difficulty: Any of the following situations can make it more difficult for a baby to attach to the breast:
 - A very small or weak baby
 - Mother’s nipples and underlying tissue are poorly protractile (difficult to stretch out to form a “teat”)
 - Mother’s breasts are engorged
 - A delay in starting to breastfeed
 - Mothers and babies can breastfeed in all these situations, but they may need extra support to succeed.
- Lack of skilled support: An important cause of poor attachment is lack of skilled help and support.

- Some women are isolated and lack support from the community, their mothers or from traditional birth attendants, who are often very skilled at helping with breastfeeding.
- Women in bottle-feeding cultures may be unfamiliar with how a breastfeeding mother holds and feeds her baby. They may never have seen a baby breastfeeding.
- Healthcare workers who look after mothers and babies — for example, doctors, midwives, nurses, nutritionists and dieticians — may not have been trained to help mothers breastfeed.

EMPTYING THE BREAST AND ALTERNATING SIDES

Teach mother to feed from one side until the baby has emptied that breast, then switch the baby to the second breast. For the next feed, baby should start on the breast that was offered secondly at the last feed. Emptying the breast prevents breast problems, ensures the baby gets the richer hind milk and maintains/increases milk production.



FACILITATOR INSTRUCTIONS

- Introduce and facilitate Exercise 3, Part 2, this is a continuation of the exercise (Exercise 2, Part 1) that was started earlier in this session.

Exercise 3: Barriers to exclusive breastfeeding, Part 2 Large group discussion: participants stay in the large group

Purpose	To complete Exercise 3, which participants started earlier in the Session. Purpose of Exercise 3 was: <ul style="list-style-type: none"> • To encourage discussion about barriers to exclusive breastfeeding. • To explore ways to empower clients to resist mixed feeding.
Duration	15 minutes
Introduction	The first step to counselling clients to exclusively breastfeed for the first six months of life, is to convince the <i>healthcare worker</i> that exclusive breastfeeding is the most nutritious, safest and healthiest option.
Activities	<ul style="list-style-type: none"> • Ask participants to review the three concerns or questions about exclusive breastfeeding that they recorded on a sheet of paper earlier in this session. • Ask participants if any of the concerns recorded earlier have been addressed? Ask for examples. • Ask for a volunteer to read one of his/her concerns that have yet to be addressed. • Ask for someone else to volunteer how he/she thinks this concern might be addressed in practice: <ul style="list-style-type: none"> • <i>Have you faced this problem in your practice?</i> • <i>If so, what did you do about it?</i> • <i>How was the issue resolved?</i> • <i>Knowing what you know now, would you have resolved the issue any differently?</i> • Repeat the above until 2 or 3 people (more if time allows) have had a chance to read out loud one concern on their sheet of paper that

	they feel have yet to be addressed by the group. Again, ask if participants can discuss how to resolve these issues.
Debriefing	<ul style="list-style-type: none"> • Clients face a number of barriers to exclusive breastfeeding. Quality counselling and support can address many, if not all, of these barriers. • One of the biggest barriers to the provision of quality counselling is healthcare worker attitude and belief. Many healthcare workers are not convinced that exclusive breastfeeding is sufficient. Once healthcare workers recognise that breastfeeding is not only sufficient, but the optimal food for the first six months of life, and has the advantage of being free from contamination that can cause diarrhoea and respiratory illness, then they can counsel with conviction. Maybe exclusive breastfeeding is “mother nature’s” way of “levelling the playing field”: exclusive breastfeeding provides all infants — whether rich or poor, white, black or coloured, whether European, American or African — with the very best start for the first six months of life, but only if they take advantage of it. • Exclusive breastfeeding for the first six months of life is recommended for all women, regardless of HIV status, but for women with HIV it has the additional advantage in that it is much less likely to transmit HIV than mixed feeding.

Answers to Exercise 3: Barriers to exclusive breastfeeding, Part 2

Key client barriers to exclusive breastfeeding that may come up during this discussion include the following:

- **Insufficient milk:** Many women think that they have insufficient milk. But very few women lack the capacity to produce sufficient milk, even for twins. The key to sufficient milk production is frequent breastfeeding, good positioning and proper attachment. The act of emptying the breast triggers more milk production — emphasizing the importance of proper positioning and attachment (so that the infant is able to feed efficiently and take the milk needed) and feeding frequently on demand.
- **My newborn takes hardly any milk!** Reassure the mother that initially the baby’s stomach can only take 20ml (4 teaspoons) of milk. As the baby grows, he/she will take more milk and milk production will keep up with demand.
- **Work outside of home:** Women who work outside of the home can maintain breastfeeding by expressing breast milk while at work. Expressed breast milk can be stored up to eight hours at room temperature or up to 24 hours in a refrigerator at 5°C or colder. Expressed breast milk can also be frozen in:
 - Freezer compartment inside of a refrigerator for up to two weeks
 - Freezer with separate door (separate from refrigerator door) for 3–4 months so long as the freezer is -18°C or colder and the expressed milk is placed in/near the back of the freezer (not in shelves in door).

EXPRESSING BREAST MILK



FACILITATOR INSTRUCTIONS

- Initiate the discussion about expressing breast milk by asking participants:
 - *In what situations is it useful for a mother to express her breast milk?*
 - *How often should a mother express her breast milk? Allow a few minutes for discussion and give your input based on the content below.*

EXPRESSING BREAST MILK — WHEN AND WHY?

There are many reasons a mother may want or need to express milk, including the following.

- To relieve engorgement; expressing a small amount of breast milk can also help a baby attach to a full breast.
- To relieve blocked ducts or milk stasis.
- When the infant is born low birthweight or is otherwise ill in the neonatal period and unable to breastfeed. If a baby cannot suckle effectively in the first week or two, breast milk can be expressed directly into the baby's mouth, or fed by cup. Additionally, expressed breast milk can be used to feed a baby while he learns to suckle from an inverted nipple, or to co-ordinate suckling. Additional information about feeding low birthweight infants can be found in the next section.
- When the mother is unwell and temporarily unable to breastfeed. Expressing can help a mother keep up her supply of breast milk when she or her baby is ill.
- To assist mothers to stop breastfeeding. Expressing breast milk relieves engorgement during weaning; it can also be used to feed a baby as he learns cup feeding.
- To prevent leaking when a mother is away from her baby.
- To prevent dryness and cracking; a small amount of hind milk, when expressed and applied to the nipple and areola, can prevent dryness and cracking.

Breast milk can be expressed, heat-treated to kill virus in the milk and fed to baby by cup (additional information on cup feeding can be found in Appendix 1). In the context of HIV, mothers known to be HIV-infected may consider expressing and heat-treating breast milk as a temporary measure during high risk periods:

- When the mother has a temporary breast health problem such as nipple sores, mastitis or an abscess. Some breast conditions increase the viral load in breast milk.
- A baby who has a sore in his or her mouth. The risk of acquiring HIV is high because the child has an open wound through which the HIV can easily travel.
- If antiretroviral drugs are temporarily not available.

Information about heat-treating breast milk is in Appendix 2.

HOW OFTEN SHOULD A MOTHER EXPRESS HER BREAST MILK?

The number of times a mother should express her breast milk depends on her reason for doing so, but usually as often as the baby would breastfeed. The frequency of breast milk expressing is summarised in Table 4.9.

Table 4.9: Frequency of breast milk expressing

Reason	Frequency
<ul style="list-style-type: none"> To establish lactation when her newborn is not feeding well (e.g., due to low birthweight or illness) 	<ul style="list-style-type: none"> A mother should start to express milk on the first day, within six hours of delivery, if possible. She may only express a few drops of colostrum at first, but it helps breast milk production to begin, in the same way that a baby suckling soon after delivery helps breast milk production to begin. She should express as much as she can, as often as her baby would breastfeed. This should be at least every three hours, day and night. If she expresses only a few times, or if there are long intervals between expressions, she may not be able to produce enough milk.
<ul style="list-style-type: none"> To keep up her milk supply to feed a sick baby 	<ul style="list-style-type: none"> She should express as often as her baby would have been fed, at least every three hours.
<ul style="list-style-type: none"> To build up her milk supply, if it seems to be decreasing 	<ul style="list-style-type: none"> She should express very often for a few days (every hour), and at least every three hours during the night.
<ul style="list-style-type: none"> To leave milk for the baby while she is out at work 	<ul style="list-style-type: none"> She should express as much milk as possible for her baby before she goes to work (she can express milk from one side while her baby feeds from the other). She should also express milk while at work the same number of times as the baby would have fed had they been together, probably about every three hours.
<ul style="list-style-type: none"> To relieve symptoms such as engorgement or leaking 	<ul style="list-style-type: none"> She should express only as much as is necessary.
<ul style="list-style-type: none"> To keep nipple skin healthy 	<ul style="list-style-type: none"> She should express a small drop to rub on the nipple after a bath or shower or at the end of a breastfeed.

HOW TO EXPRESS BREAST MILK



FACILITATOR INSTRUCTIONS

- Ask participants:
 - What is the first step in expressing breast milk?* [Answer: make sure you have all supplies, and that the supplies are cleaned and sterilised.]
 - Once the mother has everything ready, how does she start actually expressing?* [Answer: trigger oxytocin reflex.]
 - What is the most common complaint amongst women who have tried to express breast milk but have been unsuccessful?* [Answers may vary, but a very common complaint is simply that “the milk doesn’t flow”. The complaint is usually something like this.....”I tried for half an hour and nothing came out!” The reason nothing came out, is because the oxytocin reflex was not triggered.]
 - What techniques do you know for making breast milk flow? What techniques to you*

know to help women who are expressing to trigger the oxytocin reflex? Allow a few minutes for their responses, record responses on a flipchart.

- Ask participants to practise the technique. Ask them to practise the rolling action of the fingers on a model breast or on their arms. Tell them to make sure that they avoid pinching. Ask them to practise on their own bodies privately later.
- Finally discuss feeding expressed breast milk to a baby, emphasize the importance of cup feeding (never bottle feeding).

As a first step, the mother should ensure that she has all needed supplies at hand and ensure that those supplies have been cleaned, rinsed and sterilised. For more information on cleaning and sterilising supplies, see Appendix 3.

OXYTOCIN REFLEX

For many women learning to express breast milk, the first problem is getting the milk to flow. Breast milk flows only when the oxytocin reflex is triggered, oxytocin is the hormone that makes breast milk flow:

- When a baby suckles, sensory impulses go from the nipple to the brain. This causes the brain to secrete the hormone oxytocin.
- Oxytocin travels in the blood to the breast and makes the muscle cells around the alveoli contract. This makes the milk which has collected in the alveoli flow.
- Oxytocin can start working before a baby suckles, when a mother expects a feed.
- If the oxytocin reflex does not work well, the milk will not flow and the baby may have difficulty getting the milk (or the mother will not be able to express any milk).

TRIGGERING THE OXYTOCIN REFLEX

Helping and hindering the oxytocin reflex:

- The oxytocin reflex is easily affected by a mother's thoughts, feelings and sensations.
- Good feelings — for example, feeling pleased with her baby, or thinking lovingly of him, and feeling confident about breastfeeding — can help the oxytocin reflex to work and her milk to flow. Sensations such as touching or seeing her baby, or hearing him cry, can also help the reflex.
- But bad feelings — such as pain, worry or doubt that she has enough milk — can temporarily hinder the reflex and stop her milk from flowing.

Signs and sensations of an active oxytocin reflex

- A squeezing or tingling sensation in her breasts just before she feeds her baby, or during a feed.
- Milk flowing from her breasts when she thinks of her baby, or hears the baby crying.
- Milk dripping from her other breast when her baby is suckling.
- Milk flowing from her breasts in fine streams, if her baby comes off the breast during a feed.
- Pain from uterine contractions, sometimes with a rush of blood, during feeds in the first week.
- Slow, deep sucks and swallowing by the baby, which show that breast milk is flowing into the baby's mouth.

Suggest to the mother that she sit quietly and privately or with a supportive friend.

- Some mothers prefer privacy, others can express easily in a group of other mothers who are also expressing for their babies.

Recommend that she hold her baby with skin-to-skin contact, if possible.

- She can hold her baby on her lap while she expresses. If this is not possible, she can look at the baby. If this is not possible, sometimes even looking at a photograph of her baby helps.

Suggest that she:

- Get a warm, soothing drink; the drink should not be coffee.
- Warm her breasts by applying a warm compress or warm water; or she may have a warm shower.

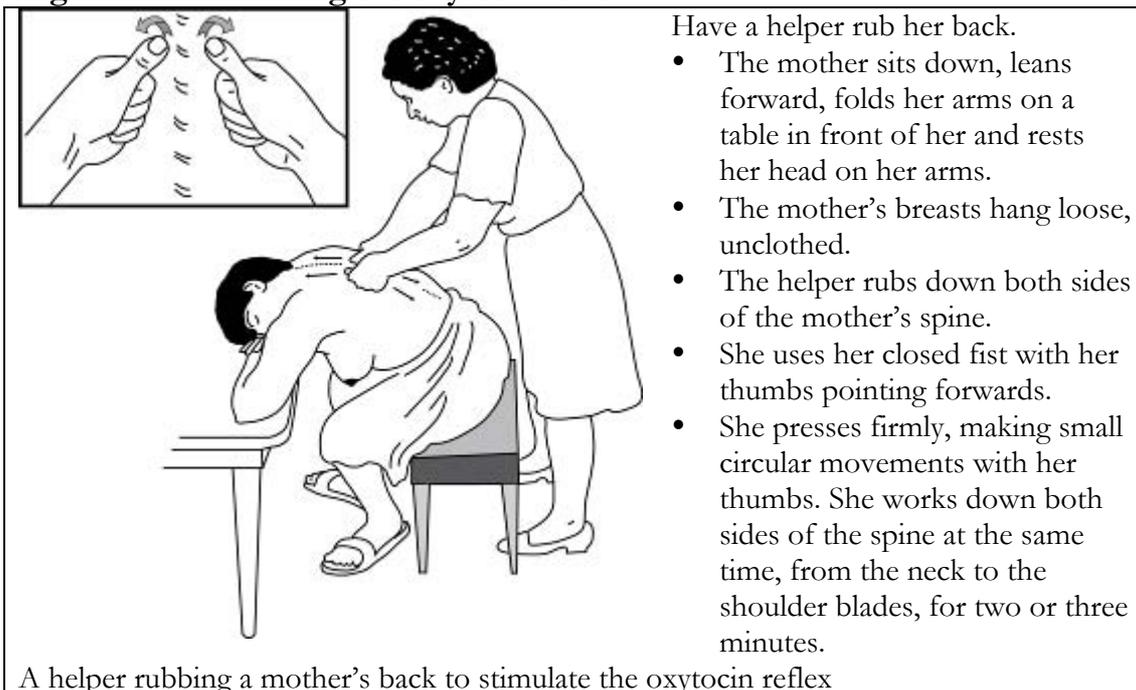
Stimulate her nipples.

- The mother can gently pull or roll her nipples with her fingers.

Massage or stroke her breasts lightly.

- Some women find that it helps if they stroke the breast gently with their fingertips or with a comb. Other women find that it helps to gently roll their closed fist over the breast towards the nipple.

Figure 4.5 Stimulating the oxytocin reflex



FEEDING BABY

Always feed the baby using a clean open cup. Avoid using bottles and teats — they are difficult to clean, they may make your baby sick. Cup feeding is discussed in Appendix 1.

FEEDING LOW BIRTHWEIGHT BABIES¹⁰



FACILITATOR INSTRUCTIONS

- Ask participants:
 - *What is the definition of a low birthweight baby?*
 - *Has anyone worked with low birthweight babies?*
 - *Can low birthweight babies breastfeed?*
 - *How can expressing breast milk help mothers with low birthweight babies?*

The term low birthweight means a birth weight of less than 2,500 grams, regardless of gestational age.

- In 2006, 9–15%¹¹ of babies in South Africa were low birthweight.
- Low birthweight babies are at increased risk of infection, and they need breast milk more than larger babies. Yet they are given artificial feeds more often than larger babies.

Many low birthweight babies can breastfeed without difficulty. Mothers of low birthweight babies need skilled help to express their milk and to cup feed. Mothers should start expressing on the first day, within six hours of delivery if possible. This helps to start breast milk to flow, in the same way that suckling soon after delivery helps breast milk to ‘come in’. If a mother can express just a few millilitres of colostrum it is valuable for her baby.

Let the mother put her baby to her breast as soon as he is well enough. He may only root for the nipple and lick it at first, or he may suckle a little. Continue giving expressed breast milk by cup to make sure the baby gets all that he needs.

When a low birthweight baby starts to suckle effectively, he may pause during feeds quite often and for quite long periods. For example, he may take 4-5 sucks and then pause for up to 4 or 5 minutes. It is important not to take him off the breast too quickly. Leave him on the breast so that he can suckle again when he is ready.

All low birthweight babies need close follow up. Low birthweight babies of mothers who are HIV-positive and who have chosen formula feeding are at higher risk of complications and should also be followed regularly to make sure they are growing.



FACILITATOR INSTRUCTIONS

- Facilitate Exercise 4: Barriers to expressing breast milk.

¹⁰ Based on content from: WHO and UNICEF. Infant and Young Child Feeding Counselling: An Integrated Course. 2006

¹¹ The 15% figure is from UNICEF, The State of the World's Children, Special Edition, Statistical Tables, November 2009. Available at: http://www.unicef.org/arabic/rightsite/sowc/pdfs/statistics/SOWC_Spec_Ed_CRC_Statistical_Tables_EN_111309.pdf

The 9% figure is from The Children's Institute, University of Cape Town, Children Count — Abantwana Babalulekile site: <http://childrencount.ci.org.za/indicator.php?id=4&indicator=33>

Exercise 4: Barriers to expressing breast milk
Large group discussion: participants stay in the large group

Purpose	<ul style="list-style-type: none"> • To discuss barriers to expressing breast milk. • To explore ways to support women to express breast milk.
Duration	10 minutes
Introduction	Both for women with HIV and those who are uninfected, expressing breast milk is an important skill to maintain lactation. For women with HIV, heat-treating expressed breast milk kills HIV in breast milk, making breast milk safe during high risk periods.
Activities	<p>Ask participants the following questions to facilitate discussion:</p> <ul style="list-style-type: none"> • <i>Do women in your area express breast milk?</i> • <i>If not why not?</i> • <i>If so, what are the most common reasons for expressing breast milk?</i> • <i>Are your clients aware that heat-treating breast milk can make it safe (in terms of MTCT)?</i> • <i>What are the most important barriers keeping women from expressing breast milk?</i> • <i>What can we do to help women overcome these barriers?</i> • <i>What are the barriers to heat-treating breast milk?</i> • <i>What can we do to support women to express and heat-treat breast milk?</i>
Debriefing	<ul style="list-style-type: none"> • It is important that we provide clients with the information on expressing and heat-treating breast milk so that they have at their disposal tools to maintain lactation and breastfeeding when they are separated from their babies, to address the discomfort of engorgement and to prevent HIV transmission.



SESSION 4.4: FORMULA FEEDING



SESSION DURATION

100 minutes (1 hour, 40 minutes)



SESSION LEARNING OBJECTIVES

- Discuss the advantages and disadvantages of formula feeding.
- Discuss the conditions needed to safely formula feeding.
- Provide an overview of the risks associated with formula feeding and how to prevent these risks.



SESSION OVERVIEW FOR FACILITATORS

- Step 1:** Introduce this session by starting with the True or False quiz in the next “Facilitator Instructions” box. Then provide an overview of formula feeding focusing on advantages and disadvantages.
- Step 2:** Discuss the conditions needed to safely formula feed.
- Step 3:** Then discuss the common risk associated with formula feeding (even for those for whom formula feeding is safe) and how these risk can be minimised.
- Step 4:** Facilitate “Exercise 5: assessing safety of formula feeding”.
- Step 5:** Discuss how often to formula feeding and how much to give at each feed. Use “Exercise 6: How much formula” to illustrate how to calculate amount of formula needed per day.
- Step 6:** Facilitate a brief discussion on spill over and stigma.
- Step 7:** Finally, facilitate a discussion on common mistakes when formula feeding and common questions.
- Key Points:** The key points for this session are:
- Formula feeding is only appropriate for families who meet all six on the conditions needed to safely formula feeding.
 - Even for women for whom formula feeding is safe, there are risks involved with formula feeding, particularly if it is mixed unhygienically or incorrectly. Quality infant feeding counselling can prevent these errors.

OVERVIEW OF FORMULA FEEDING



FACILITATOR INSTRUCTIONS

- Start the discussion by asking the group the following true or false questions, ask participants to explain why they think the statement is true or false. Ask if anyone else differs. Before moving to the next question, give participants the correct answer (all statements are false) and a brief explanation if group consensus was incorrect. All assumptions will be discussed further in this session.
 - *If I give my baby formula as well as breast milk in the first six months, he will have less of a chance of getting HIV from my breast milk because he will not be taking as much breast milk.* [False, mixed feeding is probably the most important factor in post-natal MTCT, approximately doubling the risk of MTCT in comparison to exclusive breastfeeding.]
 - *My baby, who is less than six months old, needs water and other outside nutrients to supplement either the breast milk or the formula milk.* [False, additional water and foods are not needed in the first six months of life, as a matter of fact, they are dangerous—they increase risk of diarrhoea. Give vitamins or medicines only if prescribed by a healthcare worker.]
 - *Formula feeding is always the best infant feeding decision if the mother is HIV-positive.* [False, it depends on the mother's situation. In some cases, as we will see in this Session, formula feeding is riskier than breastfeeding.]
 - *Any risk of HIV infection (through breastfeeding) always outweighs risks for infant malnutrition and disease (through formula feeding).* [False, because infant malnutrition can be fatal, this risk needs to be balanced with minimal risk of MTCT through breastfeeding.]
 - *Almost all women in the West (the US and Europe) formula feed.* [False, in the U.S. for example about 77% of infants were ever breastfed and about 30% are breast fed at six months. Ironically, in the US mothers who are better educated, higher income and older are more likely to breastfeed. The UK and the US have similar breastfeeding rates; but rates of breastfeeding are higher in Austria, Italy and Spain. Almost all women in Norway, Denmark, Sweden and Switzerland breastfeed their infants. Governments in the west have heavily promoted breastfeeding over the past several decades.]
- Initiate discussion by asking:
 - *What are the advantages and disadvantages of formula feeding?*

The South Africa Department of Health recognises that there are two options for feeding HIV-exposed infants in the first six months of life. While recommending exclusive breastfeeding for the first six months of life, the Department of Health also recognises that women with HIV whose infants are HIV-negative or whose HIV status is unknown may consider formula feeding if they meet the specific conditions outlined in “Table 4.11: Key counselling questions for AFASS assessment”. These conditions will be discussed in the next section. If an infant is known to be HIV-infected, mothers are strongly encouraged to exclusively breastfeed for the first 6 months of life and continue breastfeeding up to two years or beyond.

The advantages and disadvantages of formula feeding are summarised in Table 4.10.

Table 4.10: Advantages and disadvantages of formula feeding

Advantages
<ul style="list-style-type: none"> • Infant formula poses no risk of transmitting HIV to the infant. • Infant formula includes most of the nutrients that an infant needs. • Other responsible family members can help feed the infant.
Disadvantages
<ul style="list-style-type: none"> • Infant formula does not contain antibodies, which protect infants from infection. • An infant who is fed infant formula is more likely to get diarrhoea (which can be severe), respiratory infections and malnutrition, especially if the formula is not prepared correctly. • Preparation requires soap to wash equipment and hands, fuel and clean water (water must be brought to a rolling boil for 1–2 seconds) to prepare the formula and sterilise equipment. • Formula must be made fresh for each feed, according to directions, day and night, unless stored in a refrigerator at 5°C or less. • Continuous, reliable formula supply is required to prevent malnutrition. • The infant will need to drink from a cup. Infants can learn how to do this even when they are very young, but it may take time to learn. (See Appendix 1.) • Infant formula is expensive, even if obtained from the clinic caregivers still have to purchase fuel, utensils and soap and take the time to prepare fresh feeds day and night. • In some settings, family, neighbours or friends may question a mother who does not breastfeed about her HIV status. • Mother may get pregnant again sooner than she would if she was breastfeeding.

CONDITIONS NEEDED TO SAFELY FORMULA FEED



FACILITATOR INSTRUCTIONS

- Initiate discussion by asking:
 - *Who is familiar with the term “AFASS”? What is AFASS?*
 - *What questions do you ask to assess if formula feeding is AFASS for a mother?*

It may be appropriate for a woman with HIV to formula feed if she meets ALL of the AFASS conditions listed in Table 4.11.

Table 4.11: Key counselling questions for AFASS assessment

Question	Yes (✓)	No (✓)
1. Will you be able to cope with the stigma or discrimination from family who see you formula feeding as proof that you are HIV+? (Disclosure)		
2. Do you have a fuel source such as electricity or gas all the time to boil water?		
3. Do you have a working refrigerator or will you always have enough time to safely and correctly prepare each formula feed freshly?		
4. Do you always have R400 extra per month for sterilising liquid, transportation to clinic, and formula — should the clinic run out? Do you have financial stability?		
5. Is there a shop nearby where you can buy the formula in an emergency?		
6. Do you always have the following: clean tap water close to your home, a method of boiling water, soap for washing your hands and sterilising feeding utensils (cups and bottles)?		

For many women in South Africa, feeding with infant formula is not safe; as such, exclusive breastfeeding for the first six months of life is recommended.

The hand counselling aid, which can be used to help remember the key questions in the AFASS assessment, is in Table 4.12: AFASS hand counselling aid.

RISKS ASSOCIATED WITH FORMULA FEEDING



FACILITATOR INSTRUCTIONS

- Initiate discussion by asking:
 - *What are the risks associated with formula feeding?*

The following risks are associated with formula feeding, even for mothers who have met all of the conditions outlined in Table 4.11:

- **Mixed feeding:** mixed feeding — that is, the feeding of breast milk along with formula — introduces risk of HIV transmission.
- **Incorrect reconstitution of formula**
- **Unhygienic preparation**

Table 4.12: AFASS hand counselling aid

Antenatal Infant Feeding Options Counselling

Name: _____

Maternal CD4: _____ On ARV therapy? _____

- **Fuel source?**
electricity or gas
(Feasible)
- **Working refrigerator?**
(Feasible)
- **Financial stability?**
R 400 extra per month for formula and supplies
(Affordable)
- Shop nearby to purchase formula in an emergency*
(Sustainable)
- **Disclosure of status to partner and household?**
(Acceptable)
- **Piped, running water in home?**
(Safe)

If ALL FIVE of the boxes are NOT ticked, please do NOT recommend replacement feeding; instead, recommend six months of exclusive breastfeeding.

Feeding recommendation made to mother: _____

Maternal feeding choice: _____

I have explained the risks and benefits of this feeding choice to my client.

Note: Public health modelling exercises have shown that where the infant mortality ratio is > 25/1000, replacement feeding in the first 6 months is not safe for most mothers and their infants.

MINIMISING RISKS OF FORMULA FEEDING



FACILITATOR INSTRUCTIONS

- Initiate discussion by asking:
 - *How common is mixed feeding among your clients who formula feed?*
 - *Why do formula feeding women mix feed?*
 - *What can we, as healthcare workers, do to support our clients to avoid mixed feeding?*

MIXED FEEDING

There is no risk of MTCT postnatally if a mother does not breastfeed. But many women who decide to formula feed, also breastfeed on occasion. According to a sub-study of the National PMTCT Cohort study at least 30% of HIV-infected women who chose to formula feed and who were provided with formula, did not exclusively formula feed and often mixed feed with breast milk. Reasons for breastfeeding are numerous: some mother wants to avoid the stigma associated with formula feeding in certain circumstance (for example, in public or at her in-law's house) others are tempted to breastfeed at night because it is so much easier than preparing a bottle.

Role of the Healthcare Worker

The role of the healthcare worker in minimising mixed feeding include:

- Provide accurate information about the risks of mixed feeding. Many women think that breastfeeding occasionally must be lower risk than exclusive breastfeeding, because, so the reasoning goes, their infant is ingesting less breast milk and therefore less virus. This is NOT TRUE, the infant may be ingesting less virus, but because the intestinal tract may be inflamed and the infant does not enjoy the protective benefits of exclusive breastfeeding, the virus that is ingested is more likely to be absorbed into the bloodstream and infect the child with HIV.
- Provide women who plan to formula feed with opportunities to discuss how they will react to those who judge them for formula feeding. The infant feeding counsellor should provide women with opportunity to role play the various scenarios they are likely to encounter. If a woman thinks that she may be tempted to breastfeed while formula feeding, then formula feeding is NOT safe for her. Instead, she should be strongly encouraged to exclusively breastfeed, NOT formula feed.

Mixed feeding was also discussed in Session 4.3.

INCORRECT OR UNHYGIENIC PREPARATION OF FORMULA



FACILITATOR INSTRUCTIONS

- In the next section we are going to discuss and demonstrate correct and hygienic preparation of infant formula. As you know, formula prepared incorrectly (i.e., too weak or too strong) as well as that prepared unhygienically can make the infant sick.
- Ask participants: *What is the first step in the correct preparation of formula?* [Responses will vary, but ensure that participants recognise that hygienic preparation starts with gathering needed supplies and then sterilising these supplies. It is also important that work surfaces are disinfected, usually with a bleach-containing cleanser.]
- *What equipment, utensils and supplies are needed for formula feeding?* Record participant responses on flipchart. Your list should include the following:
 - Washing up soap
 - Water for sterilising, formula preparation and washing up and rinsing
 - Fuel for boiling water
 - Pan (if boiling) or large container (if soaking in bleach solution) for sterilising
 - Pan or electric kettle (if available) for boiling water to mix with formula
 - Tin of infant formula
 - Small containers — jars, glasses — for mixing and storing (if she has a refrigerator)
 - Permanent marker or knife to mark a glass jar on the outside
 - Scoop for measuring infant formula
 - Utensils for mixing formula with water
 - Cup for feeding; given the number of mothers that use baby bottles, you may want to have feeding bottles and teats as well. Bottles should not be used for feeding (see Appendix 1), but they are handy for mixing and storing formula. If bottles are widely used in your area, be sure to discuss how to clean and sterilise them (Appendix 3).
 - Cloth for mopping spilt water
 - Paper/kitchen towel
- Ask participants: *Once you have cleaned and sterilised your preparation and feeding equipment, what are the steps to preparing infant formula? What is the first step? How about the second? (and so on).* Follow the steps in Appendix 4.
- Note: the water with which formula is mixed should be no cooler than 70°C!! Ask participants: *How do the mothers with whom we work know if the water is above or below 70°C?* [Answer: they would probably not know, but as a rule of thumb, if the water has been left more than 30 minutes it should be re-boiled.]
- Take a minute or two to discuss how a mother can measure the water if she does not have measuring cups or bottles. Ask participants to share their experiences. Use the permanent marker/knife to mark a container to indicate how much water is mixed with the appropriate number of scoops of formula. Use the marked container for the demonstration (below).
- Demonstrate how to prepare a cup feed (15 minutes): When you have finished describing how to prepare infant formula, invite a participant to demonstrate

using the ingredients, equipment and utensils that you have organised in the front of the room.

- If you cannot sterilise the containers and utensils in the class room (using for example a chemical steriliser such as Milton), then make it clear that in practice, the containers and utensils would have just been sterilised (and discuss how). Ask the participant demonstrator to start with Step 1 in Appendix 4. Then have him/her take the measuring cup and utensils out of the steriliser with tongs and place on a disinfected surface. Proceed with Step 2, 3 and proceed through each step in turn to Step 8 (pretend to cup feed an infant when you get to that step). Participants should watch closely providing advice and reading the next step, as needed. If a kettle is not available, discuss how mothers would boil water for a feed. When the demonstration is complete, offer taste tests (but only if formula was actually made with boiled water and cups were cleaned!).
- Initiate discussion by asking:
 - *In your experience, what are the most common formula feeding errors?*
 - *What can we, as healthcare workers, do to support mothers to avoid these mistakes?*

Wrongly prepared feeds may make a baby ill, or the baby may be underfed. Since formula feeds will be the infant's entire food intake for the first six months of life, small differences that might not matter for one or two feeds may have a serious effect if they are repeated for every feed.

Infants not breastfed are at risk of infection because they do not have the protection of breast milk. Caregivers can minimise the risk of illness due to contamination with organisms that cause infection through clean, safe preparation and **exclusive** formula feeding. It is very important that all the equipment used to feed and to prepare feeds for infants (for example, cups and spoons) has been thoroughly cleaned and sterilised before use, every time.

Prepared formula can only be kept for one hour outside of the refrigerator, if kept longer bacteria will have a chance to multiply to the point where it can make the baby ill. If refrigerated, prepared formula can be stored up to 24 hours, so long as the refrigerator is never higher than 5°C

Role of the Healthcare Worker

Risk of incorrect or unhygienic preparation of formula can be minimised through:

- Infant feeding counselling that provides pregnant women who plan to formula feed with opportunities to practise exactly how to prepare infant formula and how to ensure preparation is hygienic. This support should be provided when the woman is pregnant, in the maternity ward and in the home within a few days after birth. Additional support should also be provided at every clinic visit.
- Encouragement to cup feed rather than bottle feed, as cups are easier to clean and sterilise.

Hygienic preparation of formula is covered in Appendices 3 and 4. Cup feeding is summarised in Appendix 1.

In a word, the key to supporting women to exclusively formula feeding is quality infant feeding counselling with opportunities to role play, demonstrate and practice.



FACILITATOR INSTRUCTIONS

- Introduce and facilitate Exercise 5: Assessing safety of formula feeding.

Exercise 5: Assessing safety of formula feeding Small group discussion: participants break into groups of 3–5

Purpose	<ul style="list-style-type: none"> • To practise assessing the safety of formula feeding.
Duration	30 minutes
Introduction	It is important that healthcare workers know when to advise against formula feeding and, as importantly, when to recommend formula feeding. The following case studies give an opportunity to discuss the safety of formula feeding using case studies.
Activities	<ul style="list-style-type: none"> • Divide participants into groups of 3–5 people. • Refer participants to the case studies (below and in the Participant Manual) and to Table 4.11. • Divide the three case studies among the groups. • Give each group flipchart paper to record their answers. • Give the group 10–15 minutes to discuss their cases and answer the questions. • Have each group report their responses starting with case study 1. • Start the reporting by reading the case to the entire group. • After groups have discussed case study 1, follow the same procedure for reports on case studies 2 and 3. Note: To save time, ask groups, after the first group, to report about how their answers agreed or differed from the first group.
Debriefing	<ul style="list-style-type: none"> • It is important that clients who want to formula feed are provided with an objective assessment of the safety of formula feeding for their situation.

Exercise 5: Assessing safety of formula feeding

Case Study 1: Lillian

30 year old Lillian comes to the clinic. She is 7 months pregnant and HIV positive. She lives with her family in an informal settlement. They do not have regular access to running water. The family relies on the grandmother's pension. They do not have an electric stove and sometimes are without paraffin or other fuel. She has not told anyone but a close friend of her HIV status.

- *Is formula feeding safe for this mother?*
- *If not, which of the conditions was not satisfied?*
- *What would you like to ask this mother?*

Case Study 2: Thembi

Thembi and her husband are both HIV-positive, they live with their two children on a farm that has electricity for three hours every morning and another three hours every evening. Thembi and her family get water from an open spring and use a pit latrine. The farm produces enough food to sustain the family; however, it

does not make much money. They are interested in formula feeding.

- *Is formula feeding safe for this mother?*
- *If not, which of the conditions was not satisfied?*
- *What would you like to ask this mother?*

Case Study 3: Charlene

Charlene lives in a wealthy part of town. She has piped water at home, a refrigerator and a flush toilet. Her husband has a good job, so they can afford formula and annual holidays to the Cape. Charlene lives with her husband, his mother and his two sisters. None of them know that she is HIV-positive. She is afraid to tell her husband her HIV status because she is afraid that he will become abusive. She wants to try formula feeding and was planning to tell her husband that it was recommended by the healthcare worker because she is having problems producing sufficient milk.

- *Is formula feeding safe for this mother?*
- *If not, which of the conditions was not satisfied?*
- *What would you like to ask this mother?*

Case Study 4: Robyn

Robyn cannot read and neither can her husband. Her husband is very supportive of her decision to formula feed because he knows that he and Robyn are both HIV-positive. This is their first child together. They have access to running water and a stove as well as paraffin to boil water, they also have the equipment to sterilise feeding equipment. They live within walking distance of the nearest clinic, and Robyn has heard that the clinic is very good about keeping formula in stock. Robyn is nervous because she doesn't know how to mix formula or bottle feed, but she still wants to try.

- *Is formula feeding safe for this mother?*
- *If not, which of the conditions was not satisfied?*
- *What would you like to ask this mother?*

Answers to Exercise 5: Assessing safety of formula feeding

Case Study 1: Lillian

- *Is formula feeding safe for this mother?*
Definitely not, here's what her AFASS checklist would look like:

Question	Yes (✓)	No (✓)
1. <i>Will you be able to cope with the stigma or discrimination from family who see you formula feeding as proof that you are HIV+? (Disclosure)</i> ACCEPTABLE		✓ Probably not as she has not told her family that she has HIV
2. <i>Do you have a fuel source such as electricity or gas all the time to boil water?</i> FEASIBLE		✓ She does not have a reliable fuel source.
3. <i>Do you have a working refrigerator or will you always have enough time to safely and correctly prepare each formula feed freshly?</i>	?	?

FEASIBLE		
4. Do you always have R400 extra per month for sterilising liquid, transportation to clinic, and formula — should the clinic run out? Do you have financial stability? AFFORDABLE		✓ Probably not as she relies on the grandmother's pension
5. Is there a shop nearby where you can buy the formula in an emergency? SUSTAINABLE	?	?
6. Do you always have the following: clean tap water close to your home, a method of boiling water, soap for washing your hands and sterilising feeding utensils (cups and bottles)? SAFE		✓ They do not have access to running water, no reliable method to boil water, limited income to buy soap

- *If not, which of the conditions was not satisfied?*
See above
- *What would you like to ask this mother?*
The truth is, even without questioning further, we know that Lillian does not meet all of the above criteria, she only meets four of the six. For Lillian, formula feeding is NOT acceptable, feasible, affordable or safe. There is no need to ask her the remaining AFASS questions. To ensure she can breastfeed safely, you would want to know:
 - *What do you know about exclusive breastfeeding?*
 - *Who in your household might pressure you to give your baby solids or fluids other than breast milk? How will you deal with this?*
 - *What medicines are you taking for your HIV? Did you take it today? In the last week, how many times did you take your medicine? (Provide adherence counselling if adherence is poor. Refer for immediate care if she is not taking ARVs.)*
 - *Did you know that you will be given medicines to give your baby starting from the day he or she is born? Do you know how to give this medicine? Do you know how often and for how long it needs to be taken?*
 - *Where do you plan to deliver your baby? (Encourage her to give birth in a healthcare facility.)*

Case Study 2: Thembi

- *Is formula feeding safe for this mother?*
Definitely not ... here's why:

Question	Yes (✓)	No (✓)
1. Will you be able to cope with the stigma or discrimination from family who see you formula feeding as proof that you are HIV+? (Disclosure) ACCEPTABLE	✓ Probably, both she and her husband are HIV-positive. She appears to have	

	disclosed to others in household.	
2. <i>Do you have a fuel source such as electricity or gas all the time to boil water?</i> FEASIBLE	?	? Her access to electricity is insufficient for formula feeding, but maybe she has other sources of fuel.
3. <i>Do you have a working refrigerator or will you always have enough time to safely and correctly prepare each formula feed freshly?</i> FEASIBLE		✓ Probably not, unless her refrigerator runs on a fuel other than electricity.
4. <i>Do you always have R400 extra per month for sterilising liquid, transportation to clinic, and formula — should the clinic run out? Do you have financial stability?</i> AFFORDABLE		✓ Probably not as she has told us that the farm does not make much money.
5. <i>Is there a shop nearby where you can buy the formula in an emergency?</i> SUSTAINABLE	?	?
6. <i>Do you always have the following: clean tap water close to your home, a method of boiling water, soap for washing your hands and sterilising feeding utensils (cups and bottles)?</i> SAFE		✓ They do not have access to running water, it appears that they do not have a way to boil water most of the day, and have limited income from which to buy soap

- *If not, which of the conditions was not satisfied?*
See above
- *What would you like to ask this mother?*
We have sufficient information about Thembi to conclude that we should strongly recommend against formula feeding (instead, recommend exclusive breastfeeding for the first six months), there is no need to ask any more of the AFASS questions. We would, though, like to ask the questions listed in Case Study 1, above.

Case Study 3: Charlene

- *Is formula feeding safe for this mother?*
Maybe, but maybe not, here's why:

Question	Yes (✓)	No (✓)
1. <i>Will you be able to cope with the stigma or discrimination from family who see you formula feeding as proof</i>		✓ Probably not as she has

<i>that you are HIV+? (Disclosure)</i> ACCEPTABLE		not told her family that she has HIV
2. <i>Do you have a fuel source such as electricity or gas all the time to boil water?</i> FEASIBLE	? Probably, but this should be confirmed.	?
3. <i>Do you have a working refrigerator or will you always have enough time to safely and correctly prepare each formula feed freshly?</i> FEASIBLE	✓ She has a refrigerator; we need to confirm that her electricity is reliable.	
4. <i>Do you always have R400 extra per month for sterilising liquid, transportation to clinic, and formula — should the clinic run out? Do you have financial stability?</i> AFFORDABLE	✓ Yes.	
5. <i>Is there a shop nearby where you can buy the formula in an emergency?</i> SUSTAINABLE	? Probably, as she lives in a wealthy part of town, but this should be confirmed.	?
6. <i>Do you always have the following: clean tap water close to your home, a method of boiling water, soap for washing your hands and sterilising feeding utensils (cups and bottles)?</i> SAFE	✓ She has a piped water at home and money to purchase soap, sterilising liquids and feeding utensils. We need to confirm that she can boil water easily.	

- *If not, which of the six conditions was not satisfied?*
See above
- *What would you like to ask this mother?*
 - Is there a shop nearby where you can purchase formula should the clinic run out?
 - Do you have a regular supply of fuel, such as electricity, in your home?
 - Do you have a way of boiling water?
 - Has your partner tested for HIV? Tell me more about your decision to not tell your husband about your HIV status.
 - What will you tell your family to explain why you are formula feeding? What will they say? Is this OK with you?
 - If you decide to formula feed, might you breastfeed in front of the family to keep from disclosing your HIV status?

If Charlene will be tempted to breastfeed in front of her family, she should not consider formula feeding, instead she should exclusively breastfeed for the first six months of life. Yes, formula feeding carries absolutely no risk of HIV, but mixed feeding carries a much higher risk of MTCT.

But, if Charlene would not be tempted to breastfeed while formula feeding and is comfortable with formula feeding, despite potential family questions and pressure, then formula feeding might well be an appropriate decision for her. It is now more important to help her with issued of disclosure, so that she can meet all the criteria to formula feed and ensure family orientated care and support for both herself and her partner.

Case Study 4: Robyn

- *Is formula feeding safe for this mother?*

We don't know, here's why:

Question	Yes (✓)	No (✓)
1. <i>Will you be able to cope with the stigma or discrimination from family who see you formula feeding as proof that you are HIV+? (Disclosure)</i> ACCEPTABLE	✓ Probably, as she has disclosed to her husband, who also has HIV. Husband is supportive of formula feeding. We need to know who else is in household.	
2. <i>Do you have a fuel source such as electricity or gas all the time to boil water?</i> FEASIBLE	✓ It appears that she has paraffin regularly, but it might be important to confirm access to fuel.	
3. <i>Do you have a working refrigerator or will you always have enough time to safely and correctly prepare each formula feed freshly?</i> FEASIBLE	?	?
4. <i>Do you always have R400 extra per month for sterilising liquid, transportation to clinic, and formula — should the clinic run out? Do you have financial stability?</i> AFFORDABLE	?	?
5. <i>Is there a shop nearby where you can buy the formula in an emergency?</i> SUSTAINABLE	?	?
6. <i>Do you always have the following: clean tap water close to your home, a</i>	✓ They have access to	

method of boiling water, soap for washing your hands and sterilising feeding utensils (cups and bottles)?
SAFE

running water, and a stove as well as a source of fuel. We need to know more about whether they can afford soap and sterilising equipment.

- ***If not, which of the six conditions was not satisfied?***
See above and below
- ***What would you like to ask this mother?***
 - Is it possible that you might want to breastfeed in public? How are you sure?
 - Who else lives with you? Do they know you are HIV-infected?
 - Do you have access to electricity? If so, how many hours/day? What other fuel do you use? Do you ever run out?
 - Do you have a refrigerator with reliable power?
 - Do you always have R400 extra per month for sterilising liquid, transportation to clinic, and formula — should the clinic run out? Do you have a regular source of income?
 - Is there a shop nearby where you can buy the formula in an emergency?

It should be noted that Robyn cannot read. Participants should discuss how they think this will affect her ability to formula feed if she has support from clinic staff to prepare formula correctly.

Participants should note that if Robyn does decide to formula feed, she will need much support to learn how to prepare formula correctly and hygienically and to cup feed.

It is very possible that this mother should formula feed, it very much depends on her answers to the above questions. Note, that as soon as it becomes clear (if it becomes clear) that Robyn cannot meet any ONE of the conditions, the discussion of formula feeding can be concluded and the counsellor should recommend exclusive breastfeeding. As Robyn really wants to formula feed, the counsellor will need to provide an explanation for this recommendation.

HOW OFTEN AND HOW MUCH



FACILITATOR INSTRUCTIONS

- Initiate discussion by asking:
 - *How much formula does a baby need?*
 - *How do you advise a new mum about quantity of formula?*
- Facilitate Exercise 6: How much formula?

How much to give your baby per twenty-four hours depends primarily on the baby's weight, but health status will also factor in. For example babies who are in the "growth spurt", HIV-infected or who have a fever will need more milk. As a generalisation, babies need 150 ml of reconstituted formula per kilogram (kg) per day. For example, if a baby weighs three kg, he needs about 450 ml of formula per day. This is the total volume of formula needed per day and should therefore be divided by the number of feeds the baby will be receiving. Babies should be fed between 8–12 times per day; however, each baby is unique and will establish a unique feeding pattern. As the baby gains weight, he or she will start taking fewer but larger feeds.

Table 4.13: Feeding low birthweight babies

Babies who weigh less than 2.5 kg (low birthweight)
<ul style="list-style-type: none"> • Start with 60 ml of reconstituted formula per kg body weight per day • Increase the total volume by 20 ml per kg per day, until the baby is taking a total of 200 ml per kg per day • Divide the total into 8-12 feeds, to feed every 2-3 hours. The size of individual feeds may vary • Continue until the baby weighs 1800 g or more, and is fully breastfeeding (or formula feeding)

For planning and budgeting purposes, Table 4.14 lists the approximate number of tins needed per month.

Table 4.14: Number of tin needed per month

Month	Number of 500 g tins needed per month	Number of 450 g tins needed per month	Number of 400 g tins needed per month
First month	4	5	5
Second month	6	6	7.5 (8)
Third month	7	8	8.5 (9)
Fourth month	7	8	8.5 (9)
Fifth month	8	8	10
Sixth month	8	9	10

Exercise 6: How much formula? Individual exercise and large group discussion	
Purpose	<ul style="list-style-type: none"> • To practise calculating the average amount of formula needed by a mother who is exclusively formula feeding.
Duration	15 minutes
Introduction	This exercise provides participants an opportunity to calculate the average amount of reconstituted formula needed per day by a mother who is exclusively formula feeding her baby in the first six months of life.
Activities	<ul style="list-style-type: none"> • Ask participants to work on their own to calculate the amount of

	<p>formula needed by an average baby given the weights of the five babies in the examples below and in their Participant Manuals.</p> <ul style="list-style-type: none"> • Then participants should calculate the average amount of reconstituted formula per feed, given the number of feeds the mother typically gives in a day. Let them know that each of the babies is less than 6 months of age, so all are exclusively formula fed. • The trainer should walk around the room, help participants as needed to ensure that everyone understands the exercise and is calculating correctly. • Once all participants have completed all or most of the examples, ask for somebody to tell the group what they got for the first example (Martha), and how they got that answer. Ask if anyone else came up with a different calculation. • Go through the answers for all five babies in a similar manner.
Debriefing	<ul style="list-style-type: none"> • Remind participants that their calculations are simply an average figure to give the mother some general guidance. Babies will take less on some days and more on other days. It is important to realise that babies, like adults, will vary in how much they feed from day to day. It is more important to listen to the child's cues than it is to feed the baby exactly the recommended amount.

Exercise 6: How much formula? Case studies

1. Martha's baby weighs 3.5 kg. Martha feeds the baby 11 times a day. How many millilitres should Martha give her baby at each feed?
2. Jacqueline's baby weighs 5 kg. Jacqueline feeds her baby 10 times a day. How many millilitres should Jacqueline give her baby at each feed?
3. Emma's baby weighs 6 kg. Emma feeds her baby 9 times a day. How many millilitres should Emma give her baby at each feed?
4. Anya's baby weighs 7 kg. Anya feeds her baby 8 times a day. How many millilitres should Anya give her baby at each feed?
5. Toni's baby weighs 7.5 kg. Toni feeds her baby 7 times a day. How many millilitres should Toni give her baby at each feed?

Answers to Exercise 6: How much formula?

1. Martha's baby weighs 3.5 kg. Martha feeds the baby 11 times a day. How many millilitres should Martha give her baby at each feed?
 - $3.5 \text{ kg} \times 150 \text{ ml} = 525 \text{ ml}$ reconstituted formula per day
 - $525 \text{ ml} \div 11 \text{ feeds/day} = 47 \text{ or } 48 \text{ ml}$ reconstituted formula on average per feed
2. Jacqueline's baby weighs 5 kg. Jacqueline feeds her baby 10 times a day. How many millilitres should Jacqueline give her baby at each feed?
 - $5 \text{ kg} \times 150 \text{ ml} = 750 \text{ ml}$ reconstituted formula per day
 - $750 \text{ ml} \div 10 \text{ feeds/day} = 75 \text{ ml}$ reconstituted formula on average per feed
3. Emma's baby weighs 6 kg. Emma feeds her baby 9 times a day. How many millilitres should Emma give her baby at each feed?

- $6 \text{ kg} \times 150 \text{ ml} = 900 \text{ ml}$ reconstituted formula per day
 - $900 \text{ ml} \div 9 \text{ feeds/day} = \text{about } 100 \text{ ml}$ reconstituted formula on average per feed
4. Anya's baby weighs 7 kg. Anya feeds her baby 8 times a day. How many millilitres should Anya give her baby at each feed?
- $7 \text{ kg} \times 150 \text{ ml} = 1050 \text{ ml}$ reconstituted formula per day
 - $1050 \text{ ml} \div 8 \text{ feeds/day} = 131 \text{ or } 132 \text{ ml}$ reconstituted formula on average per feed
5. Toni's baby weighs 7.5 kg. Toni feeds her baby 7 times a day. How many millilitres should Toni give her baby at each feed?
- $7.5 \text{ kg} \times 150 \text{ ml} = 1125 \text{ ml}$ reconstituted formula per day
 - $1125 \text{ ml} \div 7 \text{ feeds/day} = 160 \text{ or } 161 \text{ ml}$ reconstituted formula on average per feed

AVOID HARM TO INFANT FEEDING PRACTICES IN THE GENERAL POPULATION



FACILITATOR INSTRUCTIONS

- Initiate discussion by asking:
 - *Who can define "spill over"?*
 - *Has anyone seen spill over in their clinic settings?*
 - *What can we do to prevent spill over?*

HIV has created confusion among healthcare workers about the relative merits of breastfeeding for the mother who is known to be HIV-infected. Tragically this has also resulted in mothers who are known to be HIV-negative or whose HIV status is unknown, adopting feeding practices that are not necessary for their circumstances with detrimental effect for their infants. The new WHO recommendations discuss "avoiding harm to infant feeding practices in the general population" to protect and promote breastfeeding in the general population. The infant feeding course and previous WHO recommendations referred to this as preventing "spill over" and recommended that all precautions be taken to prevent spill over.

While maintaining that HIV-positive women who choose to formula feed should not be stigmatised, it is important to ensure that these women do not set a trend, thus encouraging HIV-negative women and women with unknown status to formula feed as well or pressuring HIV-positive women to formula feed when it is not safe to do so. Breastfeeding, especially early breastfeeding, is one of the most critical factors for improving child survival. Breastfeeding confers many benefits other than reducing the risk of child mortality.

STIGMA



FACILITATOR INSTRUCTIONS

- Ask participants for examples of stigma related to formula feeding or exclusive breastfeeding.
- Ask participants to talk about what they can do to combat stigma in their communities.

While preventing spill over, a delicate balance must be reached between discouraging formula feeding for those for whom breastfeeding is recommended and suggesting formula feeding for women with HIV for whom it is safe. It is important, then, that formula feeding be neither stigmatised nor an indicator of HIV status. If a woman with HIV can formula feed safely, she should not be hindered in doing so by the social implications of formula feeding.

COMMON MISTAKES TO AVOID WHEN FORMULA FEEDING



FACILITATOR INSTRUCTIONS

- Ask participants for examples of formula feeding mistakes made by their clients.
- Discuss the healthcare worker role in preventing these mistakes.

- Using only hot water and soap to wash formula feeding equipment (all feeding equipment also has to be **sterilised** by boiling in a pan of water).
- Mixing in extra water to the formula to make it last longer.
- Giving the child complementary foods too early (this is mixed feeding and, in the case of exclusively formula fed infants, can lead to the displacement of formula milk — which is more nutritionally dense — with less nutritionally dense complementary foods, increase risk of food allergies, and if not prepared hygienically can lead to higher risk of diarrhoea).
- Breastfeeding while in public while formula feeding at home (this is mixed feeding and leads to high rates of MTCT).
- Measuring formula incorrectly when reconstituting, leading to formula that is either watered down or too strong.
- Assuming that the measurements for one brand of infant formula will be the same for another brand of infant formula
- Using a bottle to formula feed without taking the proper precautions to sterilise the bottle (bottles are more difficult to wash and sterilise than cups).
- Not boiling the water to be used for making the formula
- Not taking family and cultural considerations into account when deciding which infant feeding method to use — it is very difficult to adhere to an infant feeding method without the support of family.

FORMULA FEEDING: Q&A



FACILITATOR INSTRUCTIONS

- Ask participants the questions in Table 4.15: Commonly asked questions. Go through the questions on-by-one. The facilitator should read the question and participants should answer, ask for additional information from other participants until you feel the group's response is sufficient. Correct any misconceptions.
- Ask participants to think of other questions they have been asked or common mistakes they have seen amongst clients with whom they work.

Table 4.15: Commonly asked questions

Question	Answer
1. Is there any way to make formula last longer?	No. For this reason, mothers must be sure that they can access formula for at least six months prior to deciding to exclusively formula feed. Do not add more water to the formula to make it last longer. If this is done, the baby will not be getting adequate nutrients; this may result in malnutrition or illness. If a mother is not sure if her formula source is reliable, she should not formula feed, instead, she should exclusively breastfeeding for the first six months.
2. I don't think my baby is getting enough nutrients from the formula. Can I make the formula stronger?	Adding extra powder to water to make the formula stronger can cause constipation, indigestion and illness. If the baby gives the impression that he is still hungry after feeds, feed him more often, giving the baby larger feeds. If the child seems listless or is not growing well, take him to a healthcare worker as soon as possible.
3. Everyone in my family says that my baby should be taking porridge at this age (4 months) to make him grow fatter and sleep better. Is this true?	A baby does not need any nutrients other than either breast milk or formula milk until he or she is six months old. If your baby is six months old or older do start introducing complementary foods. If your baby is younger than six months, giving him complementary foods will only increase the likelihood that he will be allergic to some foods, give him diarrhoea and, if breastfeeding, increase his risk of acquired HIV through MTCT.
4. I am unsure of my HIV status, but I want to keep my baby safe. Should I try exclusively formula feeding?	Why is it that you've not yet been tested for HIV? Do you know the benefits of HIV testing for you, your partner and your baby? Can we discuss your reason for not testing? We strongly recommend that you test for HIV. If you are unsure of your HIV status, the best way to know how to keep your baby safe is to get yourself tested. Your partner should also be tested for HIV. If you are HIV-infected, we will then discuss with you testing your baby as

	<p>well.</p> <p>Women who do not know their HIV status should exclusively breastfeed for the first six months of life, introduce complementary foods and continue breastfeeding for 24 months and beyond.</p>
<p>5. I am formula feeding my baby, but I have not told anyone about my decision to do so. Whenever my mother-in-law hears the baby crying she tells me to breastfeed. Is it okay to breastfeed once in a while as long as the baby is mostly taking formula?</p>	<p>Once a commitment has been made to exclusively formula feed the baby, do not breastfeed. Breastfeeding the formula fed baby will put the baby at a higher risk for MTCT than if the baby is exclusively breastfed for the first six months. You have two options:</p> <ul style="list-style-type: none"> • Continue formula feeding, in which case you should strongly consider disclosing to your family. This is probably the best option. Does your partner know you have HIV? What do you think of telling your mother-in-law that you have HIV? How would you tell her, shall we role play? • If you really regret your decision to formula feed, I will refer you to a breastfeeding counsellor. The breastfeeding counsellor can discuss with you re-lactation, weaning your baby from formula milk and starting breastfeeding. But you will need to express breast milk until breastfeeding is re-established to avoid mixed feeding. <p>(Note: This case emphasizes the importance of correctly assessing a mother’s situation during ANC. If the decision made during pregnancy turns out to be the wrong one, it can be difficult to change infant feeding methods.)</p>
<p>6. Should I feed my baby according to a schedule or when he hungry?</p>	<p>You should feed your baby whenever he is hungry, making sure to feed at least the recommended number of times per day if he is not hungry very often. He may initially not be as hungry as often if he is formula fed because formula is digested more slowly than breast milk.</p>
<p>7. Is there a difference between infant formula brands? Is there one brand that is better than another?</p>	<p>All brands of infant formula are modified to resemble breast milk and contain sufficient nutrients to satisfy all of a baby’s needs for the first six months of life. But, having said that, there are some differences between brands. For example, the government distributes Nestle’s Pelargon free of charge in the public health sector because it is a biologically acidified infant formula that inhibits the growth of harmful bacteria in the prepared feed. In other words, Pelargon is less likely to give the baby diarrhoea than another brand that is not acidified. Additionally, brands may differ in terms of quantity of formula to water, so never assume that you can use the scoop from one brand with another brand of formula.</p>
<p>8. Why can’t I start feeding my baby</p>	<p>Breast milk contains a unique balance of proteins (60% whey and 40% casein) that protect against infections. If</p>

animal milk from birth?	present in different quantities — particularly if there is a larger percentage of casein in the milk, as often there is in animal milk — the milk becomes more difficult to digest. There are also other proteins in breast milk that are essential to proper infant development that are not found in animal milk. Formula milk has been modified to resemble breast milk in its nutritional properties; animal milk, such as cow milk, has not. Animal milk, therefore, will be more difficult to digest and will not be able to provide your infant with the nutrients that he or she needs. At six months, boiled animal milk may be introduced into your baby's diet.
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SESSION 4.5: INFANT FEEDING COUNSELLING IN THE CONTEXT OF HIV



SESSION DURATION

120 minutes (2 hours)



SESSION LEARNING OBJECTIVES

- Understand the steps in the infant feeding counselling session.



SESSION OVERVIEW FOR FACILITATORS

Step 1: Introduce infant feeding counselling by: discussing the role of counselling in infant feeding, the timing of the infant feeding counselling session, and the role of the healthcare worker in infant feeding counselling.

Step 2: Discuss the steps involved in the infant feeding counselling session.

Step 3: Facilitate Exercise 7: Infant feeding counselling and support.

Key Points: The key points for this session are:

- Women with HIV should be provided with infant feeding counselling both antenatally and postnatally.
- The infant feeding counselling session includes five steps: discuss exclusive breastfeeding (or formula feeding), explain the risk of MTCT and how to reduce risks, ensure mother is in HIV-related care, provide demonstration or observe, provide follow-up counselling and support.

ROLE OF INFANT FEEDING COUNSELLING



FACILITATOR INSTRUCTIONS

- To encourage discussion, ask:
 - Why is infant feeding counselling important?
 - When should infant feeding counselling sessions take place?
 - What is the benefit of having both antenatal and postnatal infant feeding counselling sessions?
 - Is it ever too late to provide infant feeding counselling?

Research has shown that exclusive breastfeeding is more likely, when breastfeeding women receive consistent and accurate messages about infant feeding from healthcare

workers, family, peer supporters and community members during antenatal, intrapartum and postnatal care. Infant feeding counselling sessions greatly impact how women feed their babies by informing them of the national recommendations, providing accurate information and facts that address misperceptions and supporting them to resist pressure to mixed feed. Individual infant feeding counselling gives the mother confidence and helps her feed her infant in a way that ensures her infant's HIV free survival and safeguards her own health.

When providing infant feeding information, counselling and support, healthcare workers use "Listening and Learning skills" taught in the 5-day "Infant and Young Child Feeding Counselling: An Integrated Course" (WHO and UNICEF). These are the same skills used in the HIV pre- and post-test counselling session. The Listening and Learning skills checklist is attached as Appendix 6.

To ensure a successful counselling session, the counsellor must gain the client's trust by providing a private space where counselling can take place, communicating in an open and non-judgemental manner and asking the client specific, straightforward questions that will initiate an honest conversation about her home and family situation, her health, and any concerns that might impact her infant feeding practices.

TIMING OF INFANT FEEDING COUNSELLING SESSIONS

If possible, infant feeding counselling should occur both antenatally and postnatally, including on the maternity ward.

- **Antenatally:** Ideally, each pregnant woman living with HIV should receive at least four antenatal counselling sessions on infant feeding. If possible, infant feeding counselling should be provided some time after the HIV test results are given, but not immediately after. If a mother is unlikely to return to ANC, provide her with all the essential infant feeding information during the first visit.
- **Postnatally:** A healthcare worker should ideally visit the mother and infant immediately after birth (either in the maternity ward or at home) and schedule another visit within 7 days to monitor infant feeding progress. Schedule follow-up infant feeding counselling sessions for times when the mother brings the child to the clinic for well-baby care or immunisations. Additional counselling sessions may be required when:
 - The child is sick
 - The mother returns to work
 - The mother decides to change feeding methods

ROLE OF THE HEALTHCARE WORKER



FACILITATOR INSTRUCTIONS

- To encourage discussion, ask:
 - *What makes a good infant feeding counsellor?*
 - *How can the counsellor's biases and prejudices affect the client's decision?*
 - *How can a good counsellor affect a client's decision? How can a bad counsellor*

affect a client's decision?

- **What are the steps in infant feeding counselling?** Note that these steps are different from those based on the earlier infant feeding guidelines and the WHO, UNICEF Five-day integrated course.

During the infant feeding counselling session, the healthcare worker's responsibilities include:

- Guiding the woman based on her individual circumstances, including her health, social and financial status, local customs and personal beliefs.
- Teaching the woman skills that are necessary to feed her infant safely; this may involve demonstrations or providing opportunities where the mother can practice recently learned skills.
- Encouraging husband, family, or friend involvement in infant feeding decisions, when safe and appropriate.
- Supporting her decision to disclose her HIV status to family and friends.
- Referring the woman to appropriate follow-up care, such as further counselling, support groups, HIV-related care, treatment and support and family planning services.

Being a supportive infant feeding counsellor means:

- The counsellor's role is to be a source of support, information and friendly guidance for the client.
- The counsellor should never be judgemental about a mother's infant feeding choice. This choice reflects her capabilities and what she is physically able to do.
- Remember that all mothers are participating in this session because they want to protect their babies and keep their babies healthy.
- The counsellor needs to ask the difficult questions. Don't let a client romanticise a particular infant feeding method. Both methods have their own difficulties.
- The counsellor should always speak in a warm, supportive tone, use engaged body-language and be attentive; the mother is probably a lot more tired and stressed than the counsellor.

OVERVIEW OF INFANT FEEDING COUNSELLING

Infant feeding counselling includes the following:

- Information about the risk of HIV transmission through breastfeeding
- Information about the importance of lifelong ARV therapy or ARV prophylaxis to reduce risk of MTCT (and for the mother's health, if she is eligible for lifelong ARV therapy).
- Information about breastfeeding, the advantages of breastfeeding and proper positioning and attachment.
- If formula feeding is AFASS for the mother: information about the advantages and disadvantages of formula feeding. Information and support to formula feed hygienically and prepare formula correctly.
- Demonstration and/or observation and support as needed.

Healthcare workers have a responsibility to protect, promote and support safe and appropriate feeding practices. They should support a woman's infant feeding decisions and provide continued support during the first two years of a child's life. Women will

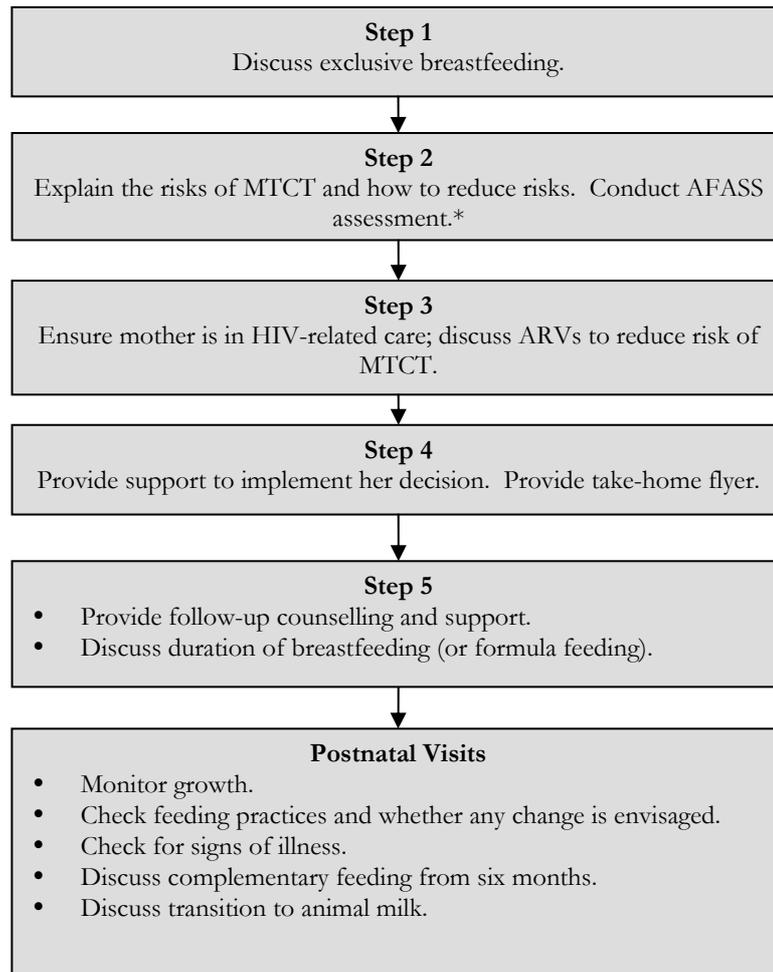
need ongoing support to maximise success and ensure proper growth and development of the child.

The flowchart in Figure 4.6 illustrates the steps for counselling mothers living with HIV about infant feeding. Below are instructions for how to use the flowchart. The counselling session is further explained in the next section.

Table 4.16: Infant feeding counselling for women with HIV

If this is the mother's first feeding counselling session and...
<p>She is pregnant or recently delivered:</p> <ul style="list-style-type: none"> • Follow Steps 1–4. <p>She already has a child:</p> <ul style="list-style-type: none"> • Follow Steps 1–3 and 5.
If the mother has already been counselled but has not yet learned how to breastfeed (or formula feed) and....
<p>She is pregnant or recently delivered:</p> <ul style="list-style-type: none"> • Do step 4 only. <p>She already has a child:</p> <ul style="list-style-type: none"> • Do step 5 only.
If this is a follow-up visit...
<ul style="list-style-type: none"> • Begin with Step 5.

Figure 4.6 Infant feeding counselling flow chart for women with HIV



* If formula feeding is AFASS, help the mother choose between breastfeeding and formula feeding.

THE INFANT FEEDING COUNSELLING SESSION



FACILITATOR INSTRUCTIONS

- Explain the infant feeding counselling session step-by-step (as you know from Figure 4.6 there are six steps). For the first session, introduction, encourage participant discussion by asking:
 - *How do you start the infant feeding counselling session?*
- For Step 1 (Discuss exclusive breastfeeding), encourage participant discussion by asking:
 - *What do you typically say during an ANC infant feeding counselling session to initiate the discussion about breastfeeding?*

FIRST SESSION, INTRODUCTION

When starting the infant feeding counselling session with a new client in the ANC setting, the healthcare worker may want to provide an overview of the session. The following points may be included in the overview:

- *You will learn why we recommend breastfeeding for all women, including women with HIV, and how to breastfeed safely (Step 1).*
- *You will learn how HIV is transmitted from mother to baby and how you can lower the chances that your baby will be HIV-infected (Step 2).*
- *You will learn more about how you can get the care and support you need (Step 3).*
- *I will show you how to breastfeed (or formula feed — Step 4).*
- *In future, when you come to the clinic you will have an opportunity to meet with me or another HCW to discuss any questions you may have about infant feeding. Please consider bringing your partner, a friend, or family member with you at that time (Step 5).*
- *You should feel free to ask questions at any point in time during our discussions today or in the future.*

STEP 1: DISCUSS EXCLUSIVE BREASTFEEDING.

If she is pregnant or recently delivered, ask:

- *Do you have any other children? (If yes: How did you feed your other children?)*
- *How do you plan to feed this baby?*
- *Which other members of your family may be involved in infant feeding decisions?*
- *Breast milk is the ideal nourishment for infants. It contains all the nutrients, antibodies and hormones an infant needs to thrive the first six months of life. Breast milk protects babies from diarrhea and respiratory infections. Given the importance of breast milk to infant growth and development, the Department of Health recommends that all babies are breastfed exclusively for the first six months of life.*

If she already has a child, ask:

- *How are you feeding your child?*
- *Which other members of your family are involved in infant feeding decisions?*

STEP 2: EXPLAIN THE RISK OF MTCT AND HOW TO REDUCE RISKS. CONDUCT AFASS ASSESSMENT.



FACILITATOR INSTRUCTIONS

- For Step 2 (Explain the risks of MTCT and how to reduce risks), encourage participant discussion by asking:
 - *What do you typically say during an infant feeding counselling session to explain risk of MTCT?*
 - *What do you say when you're telling a mum how to reduce her risk of MTCT?*
 - *What do you say to encourage the mother to take her ARVs every day as directed by her healthcare worker?*
 - *What do you say to initiate the AFASS assessment? Would you conduct the AFASS assessment for everyone? [Answer: not necessarily, if the mother states that she wants to breastfeed, you need not conduct the AFASS assessment, instead reinforce that decision.]*

Ask:

- *What is your understanding of how a baby can get HIV from its mother?*
- *How do you think you will react if your baby has HIV? How might your partner react?*

Cover the following points:

- *A mother must be infected with HIV to pass the virus to her baby.*
- *Not all babies born to women living with HIV become infected with HIV themselves.*
- *Babies can be infected during pregnancy, during delivery or through breastfeeding. There are things that can be done at each stage to reduce the chances that the baby will be HIV-infected.*
- *A number of things may increase the chances of passing HIV through breastfeeding:*
 - *Mother was recently infected with HIV*
 - *Mother has a low CD4 count or advanced HIV infection or AIDS*
 - *Mother is not on ARV therapy or ARV prophylaxis*
 - *Breast problems such as an infection, sores or cracked or bleeding nipples*
 - *Mixed feeding (feeding both breast milk and other foods or liquids)*
 - *Mouth sores or thrush in the baby*
- *There are many things you can do to reduce the chance that you will pass HIV to your baby:*
 - *Enrol in HIV care and treatment*
 - *Take all of your medicines every day during pregnancy, labour, and throughout the breastfeeding period; if your baby is given medicines by a HCW, make sure she gets all of her medicines every day.*
 - *Plan to deliver your baby in a healthcare facility.*
 - *Breastfeed or formula feeding your baby exclusively.*
 - *Formula feeding does eliminate risk of HIV but brings with it the risk of diarrhoea, respiratory infections and malnutrition. Having said that, if certain conditions are met, formula feeding is fairly safe. We can discuss these conditions, if you think you might want to formula feed. If she responds that she would like to know more about formula feeding, review with her the AFASS questions listed in the Table below.*

Question	Yes (✓)	No (✓)
1. Will you be able to cope with the stigma or discrimination from family who see you formula feeding as proof that you are HIV+? (Disclosure)		
2. Do you have a fuel source such as electricity or gas all the time to boil water?		
3. Do you have a working refrigerator or will you always have enough time to safely and correctly prepare each formula feed freshly?		
4. Do you always have R400 extra per month for sterilising liquid, transportation to clinic, and formula — should the clinic run out? Do you have financial stability?		
5. Is there a shop nearby where you can buy the formula in an emergency?		
6. Do you always have the following: clean tap water close to your home, a method of boiling water, soap for washing your hands and sterilising feeding utensils (cups and bottles)?		

The mother must have answered “yes” to all six of the questions below for formula feeding to be considered AFASS. The HCW may stop the assessment as soon as it is determined that the mother does not meet any ONE of the conditions. If she does not meet even one of the conditions, reinforce the decision to breastfeed exclusively until six months of age.

If formula feeding is AFASS: support the mother to choose between exclusive breastfeeding or exclusive formula feeding for the first six months of life. If she is early in her pregnancy, she can take her time to make the decision.

STEP 3: ENSURE MOTHER IS IN HIV-RELATED CARE; DISCUSS ARVS TO REDUCE RISK OF MTCT.



FACILITATOR INSTRUCTIONS

- For Step 3 (Ensure mother is in care), encourage participant discussion by asking:
 - *What do you typically say or ask during an infant feeding counselling session to make sure a mother is in care for her HIV disease?*
 - *What do you ask to make sure she is taking her ARVs?*

Ask:

- *How long have you known that you are living with HIV?*
- *Are you receiving care for your HIV infection? (If no, provide or refer her for care.)*
- *Are you taking any medicine for your HIV? (If not, provide or refer her to start ARV prophylaxis and assessment for ARV therapy eligibility.) (If yes) Which medicines?*
- *How often do you take your medicine? (Encourage excellent adherence to all HIV medications.)*
- *How do you give medicine to the baby? Are you having any problems? (Discuss and demonstrate administration of medicine for the infant as needed. Encourage excellent adherence to medications for the child.)*
- *Even during the breastfeeding period, ARVs — whether taken by yourself and/or your baby — reduce risk of MTCT.*

STEP 4: PROVIDE SUPPORT TO IMPLEMENT HER DECISION.



FACILITATOR INSTRUCTIONS

- For Step 4 (Provide support to implement her decision), encourage participant discussion by asking:
 - *What do you tell a woman who wants to breastfeed to support her decision?*
 - *Who provides breastfeeding demonstrations when they discuss infant feeding with a pregnant women or new mum? Can you tell us how you demonstrate breastfeeding? [If you have an experienced infant feeding counsellor in the training, give him/her five minutes or so to explain how they demonstrate breastfeeding. Invite questions and ask for feedback from other participants.]*
 - *What do you tell a woman who wants to formula feed to support her decision?*
 - *Who demonstrates formula feeding? Can you tell us how you demonstrate formula feeding? [If you have an experienced infant feeding counsellor in the training, give him/her five minutes or so to explain how they demonstrate formula feeding. Invite questions and ask for feedback from other participants.]*

Pregnant or recently delivered women who plan to breastfeed, ask:

- *What do you know about breastfeeding?*
- *Do you know how to position your baby to breastfeed?*
- *Do you know how to make sure your baby is properly attached?*
- *Breastfeeding exclusively dramatically reduces risk of MTCT in comparison to mixed feeding. Breastfeeding exclusively means that in the first six months of life you give your baby only breast milk, no other foods, liquids, not even infant formula or water. Who do you think might pressure you to give foods or liquids other than breast milk to the baby? What will you say to this person? We recommend that all women — whether HIV-infected or not — breastfeed exclusively, so refusing to provide your baby other foods or liquids will not require you to discuss your HIV status.*
- *Do you expect to be away from your baby in the first six months after you give birth (for example, to go to work)? (If yes: Discuss expressing milk for caregiver to provide to the baby when the mother is absent.)*
- *What questions do you have?*

Provide demonstration: Ideally, a woman should learn how to breastfeed before her baby is born. This should take place during the last trimester of pregnancy, or as soon as possible after she has given birth. If possible, the woman's partner or a family member should accompany her.

- Demonstrate techniques for proper infant positioning and attachment to the breast using a doll and model breast. Ask the mother to show you how to position the “baby” and bring the “baby” to her breast. Offer support and corrective advice if needed.
- Encourage on-demand breastfeeding, and prepare the mother for the expected frequency of breastfeeding.
- Suggest strategies for increasing milk supply and for maintaining exclusive breastfeeding.

Pregnant or recently delivered women who plan to formula feed:

If the mother meets all five of the AFASS criteria, discuss formula feeding with her and help her choose between breastfeeding and formula feeding. If she wants to formula feed and it is safe for her and her infant, ask:

- *What do you know about formula feeding?*
- *Do you know how to prepare infant formula? (Discuss how to wash, rinse and sterilise feeding equipment and how to reconstitute formula correctly. Also discuss storage of formula based on her responses to your questions about access to reliable source of fuel and refrigeration.)*
- *How long can you keep prepared infant formula? (Ensure that she knows that prepared infant formula must be discarded if more than an hour old. If she has a refrigerator, she can keep it in the fridge for 24 hours, IF the refrigerator is at least 5°C at all times AND IF the prepared formula was refrigerated immediately after it was prepared.)*
- *Do you know how to cup feed? (Show her how to cup feed an infant.) Do you know why we recommend cup feeding rather than bottle feeding? (Explain the advantages of cup feeding over bottle feeding, see Appendix 1.)*
- *In the first six months of life, you should exclusively formula feed. That is, give no other liquids or foods other than infant formula.*
- *As you've decided to formula feed, that also means that you're making a decision to not breastfeed. Formula feeding mums who also breastfeed on occasion are at a much higher risk of transmitting HIV than mother who breastfeed exclusively. What difficulties do you expect with your decision to*

formula feed? Is there anyone who might stigmatise you because you are formula feeding? How will you deal with this?

- *Who else might feed your baby? Will you be able to show this person how to formula feed correctly and hygienically so that your baby does not get well? Will you stress to this person that your baby cannot have foods other than formula in the first six months of life?*
- *What questions do you have?*

Provide demonstration: provide her with opportunity to practice hygienic and correct preparation of infant formula and cup feeding. She should bring with her to the counselling session a transparent container that she will use to measure liquids, as well as a teaspoon or spoon.

All mothers:

- Emphasize the importance of follow-up care for her and her infant
- *What questions do you have?*

The HCW should have all of the necessary supplies on hand for teaching and demonstrations, including a doll and model breast to demonstrate breastfeeding, and the equipment needed to demonstrate how to prepare and give formula. The counsellor should also have the appropriate take-home flyers.

See Appendix 1 for information on cup feeding, Appendix 2 on expressing and heat-treating breast milk and Appendices 3 and 4 for additional guidance on safe formula feeding,

STEP 5: PROVIDE FOLLOW-UP COUNSELLING AND SUPPORT.



FACILITATOR INSTRUCTIONS

- For Step 6 (Follow-up), encourage participant discussion by asking:
 - *What do you ask a mother at either her home visit or her first follow up appointment after the baby is born to ensure breastfeeding is going well?*
 - *What do you ask a mother at either her home visit or her first follow up appointment after the baby is born to ensure formula feeding is going well?*

If the mother is pregnant:

During subsequent visits, the mother should have an opportunity to ask any questions. Ideally, she should bring her partner or a supportive family member with her to this session so that they can learn together how to feed the baby. Ask the mother:

- *Let's review what happened in the last session. From what I remember, you are breastfeeding (or formula feeding).*
- *Who did you discuss this with? How did they feel about it? What questions did they have? What questions do you have?*
- *What questions do you have about exclusively breastfeeding (or exclusively formula feeding)?*
- *What might make it difficult for you to exclusively breastfeed (or exclusively formula feed)?*
- *Are you taking any medicine for your HIV? (If not, provide or refer to start ARV prophylaxis and assessment for ARV therapy eligibility.) (If yes) Which medicines? How many times did you take your medicine yesterday? How about the day before yesterday? (Provide support for excellent adherence.)*

If the mother already has a child and is breastfeeding:

- If the infant is less than six months old:
 - *How is breastfeeding going for you?*
 - Check if she breastfeeds exclusively; ask about mixed feeding. The infant should not be given any other liquids or foods other than breast milk (not even water or formula!). Ask how she handles pressure from friends and family to give her baby other liquids or foods. Role play with her if she would find it helpful.
 - Check if she breastfeeds on demand and for as long as the infant wants.
 - Observe a breastfeed and assess the mother's breasts for abnormalities; advise appropriately.
 - *How often are you giving nevirapine to your baby?* (Ensure she is giving NVP once daily, if not, explain why NVP is important, ask in a supportive manner why she is not giving it daily, and help her to address barriers to daily NVP administration.)
- *Did baby have an HIV PCR test at the six week postnatal visit ? (If yes) Have you received the result?* (If infant has not been tested, take DBS for HIV PCR testing. If infant has been tested but results are not available, find out date of testing and track results if overdue.)
- If baby is six weeks old or older: *Is baby taking the cotrimoxazole?* (Ensure that caregiver is giving CPT every day, once a day. Inform caregiver that CPT is given from six weeks of age until the baby is confirmed HIV negative when tested after all breastfeeding has ceased.)
- If the infant is approaching six months: discuss complementary feeding (see Appendix 5) with continued breastfeeding to 12 months. Discuss transitioning to animal milk from 12 months of age.
 - Teach mothers how and when to express and heat-treat breast milk (Appendix 2).
 - Provide her with support to cup feed (Appendix 1).
- If the infant is approaching 12 months: discuss weaning at 12 months and transitioning to animal milk until at least 24 months of age.
- *Are you taking any medicine for your HIV?* (If not, re-assess for ARV therapy eligibility and provide or refer to start ARV prophylaxis) (If yes) *Which medicines? How many times did you take you medicine yesterday? How about the day before yesterday?* (Provide support for excellent adherence.)
- All mothers: provide information on:
 - The prevention, identification, and management of cracked nipples, mastitis, and other breast conditions
 - The additional nutritional requirements for breastfeeding women
 - Family-planning and safer sex
 - The prevention, treatment and dietary management of diarrhoea and other illnesses that may interfere with feeding
 - Timing of infant re-testing dependent on when breastfeeding was stopped.

If the mother already has a child and is formula feeding:

- *How is formula feeding going for you?*
- Check if she replenishes her infant formula stock before it runs out.
- *How do you prepare your baby's feeds* (ask for a step-by-step description)? Ensure she is washing, rinsing and sterilising preparation and feeding equipment hygienically. Ensure she is reconstituting powdered formula correctly and hygienically (see Appendices 3 and 4).

- Check that she gives an appropriate volume and number of feeds (if not, recommend that she adjust the amount according to the infant's age).
- Check that she discards unused formula after one hour.
- Ensure she is using a cup instead of a bottle for feeding the infant (Appendix 1).
- Check that she is not breastfeeding (mixed feeding).
- If the infant is less than six months old: check that the infant is not mixed fed. Check that the mother is not giving breast milk in addition to formula.
- If the infant is less than six weeks old: ensure she is administering daily nevirapine.
- *Did baby have an HIV PCR test at the six week postnatal visit ? (If yes) Have you received the result? (If infant has not been tested, take DBS for HIV PCR testing. If infant has been tested but results are not available, find out date of testing and track results if overdue.)*
- If baby is six weeks old or older: *Is baby taking the cotrimoxazole? (Ensure that caregiver is giving CPT every day. Inform caregiver that CPT is given from six weeks of age until the baby is confirmed HIV negative.)*
- If the infant is approaching six months: discuss complementary feeding (see Appendix 5) with continued formula feeding to 12 months and then transitioning to animal milk until at least 24 months of age.
- *Are you taking any medicine for your HIV? (If not, re-assess for ARV therapy eligibility and provide or refer to start ARV prophylaxis) (If yes) Which medicines? How many times did you take you medicine yesterday? How about the day before yesterday? (Provide support for excellent adherence.)*
- All mothers: provide information on:
 - Family-planning and safer sex
 - The prevention, treatment, and dietary management of diarrhoea and other illnesses that may interfere with feeding
 - Timing of re-testing given this mother's situation
- Assist with developing strategies to respond to family/friends about not breastfeeding; if necessary support her in creating responses to questions
- If she is at risk of running out of formula, discuss what to do in the event of an emergency. Stress that she should not consider initiating breastfeeding; instead she should make a plan to get infant formula as soon as possible and use home-modified animal milk as an interim measure. Teach her how to modify animal milk with sugar and water. Stress that this should be a temporary measure, as animal milks are inadequate for human babies under the age of 6 months.
- Where available, provide a take home flyer.

All mothers:

Follow-up counselling for mothers who have infants should be informed by information from the assessment of growth and development (including weighing/measuring and plotting of height, weight and head circumference) as well as HIV test result, when available. This is further discussed in the next session.

Follow-up counselling and support is also important for women with older infants or young children who have just been diagnosed with HIV. For these women, who may not have enrolled in the PMTCT programme, special attention should be paid to feeding issues, care and treatment, and the need for support. Regardless of whether the mother has recently diagnosed or has known her HIV status, she will benefit from ongoing education and counselling on feeding.



FACILITATOR INSTRUCTIONS

- Facilitate Exercise 7: Infant feeding counselling and support.

Exercise 7: Infant feeding counselling and support Small group discussion: participants break into groups of 3–5

Purpose	<ul style="list-style-type: none"> • To practise applying the national infant feeding guidelines.
Duration	60 minutes
Introduction	Refer to the case studies below and in the Participant Manual. Also refer to “Figure 4.6 Infant feeding counselling flow chart for women with HIV” and the steps in this Session.
Activities	<ul style="list-style-type: none"> • Break participants into groups of 3–5 people per group, assign each group one of the case studies (below and in the Participant Manual). If you have more than 4 groups, assign some of the case studies to more than one group. • Ask participants to select a note taker for the group and give each group flipchart paper and a marker. • Ask participants to read through their case study and spend about 30 minutes answering the questions, using the flowchart as a reference. Offer the groups the opportunity to prepare a role play related to the case study or to simply report on their answers to the questions. • Reconvene the large group and ask the groups to either present the role play or to read the case study and give a summary of the group’s answers. • After each small group presents, ask the large group if there are any questions or additional comments. • The trainer should refer to the answer key below and contribute to the discussion, as needed.
Debriefing	<ul style="list-style-type: none"> • The first step to making breastfeeding safer is to ensure that the mother is counselled and provided with care for her own HIV infection, including lifelong ARV therapy or ARV prophylaxis. • Infant feeding counselling is an important time to provide mothers and families with the information they need to ensure that infant feeding is safe.

Exercise 7: Infant feeding counselling and support, case studies

Case Study 1:

Mwenzi is living with HIV but is not yet eligible for lifelong ARV therapy. She is breastfeeding her five-month old infant, who is receiving infant ARV prophylaxis. She does not have a regular source of clean water. In addition, she has not disclosed her status to her mother-in-law, who lives in the home.

- *What questions would you ask Mwenzi?*
- *What recommendations would you give Mwenzi on reducing the risk of MTCT to her baby?*

Case Study 2:

Lonah is living with HIV and is receiving lifelong ARV therapy. She has been breastfeeding her 5-month old baby boy. She reports that he is frequently experiencing diarrhoea, and when you talk with Lonah, you learn that her mother-in-law gives the baby porridge and water.

- *What questions would you ask Lonah?*
- *What advice would you give Lonah on safer infant feeding?*
- *What questions would you ask Lonah to ensure that she has been prescribed ARVs and that she is taking them exactly as prescribed for PMTCT?*

Case Study 3:

Saliya, who is newly diagnosed with HIV and is not on lifelong ARV therapy, has been breastfeeding her baby for six months and would like advice on reducing the baby's risk of HIV. She heard that she should stop breastfeeding. She reports that she can afford to buy formula for the baby.

- *What questions would you ask Saliya?*
- *What advice would you give Saliya in reference to feeding her child?*

Case Study 4:

Rosemary was diagnosed with HIV when she was pregnant. Although her 4-month old baby girl was healthy at birth and given six weeks of NVP, she is currently in the hospital where she was diagnosed as HIV-infected by DNA-PCR. Rosemary has been mostly formula feeding, but breastfeeding occasionally at night because it was easier.

- *What questions would you ask Rosemary?*
- *What advice would you give Rosemary to help her take care of herself, including her own HIV infection?*
- *What advice would you give Rosemary on feeding her baby daughter?*

Exercise 7: Infant feeding counselling and support, case studies

Suggested points for discussion

Case Study Question	Key Points
Case Study 1: Mwenzi <i>1. What questions would you ask Mwenzi?</i>	<ul style="list-style-type: none">• <i>How is breastfeeding going for you?</i>• <i>What foods other than breast milk are you giving your baby?</i> (The infant should not be given any other liquids or foods other than breast milk.)• <i>How do you handle pressure from friends and family to give your baby other liquids or foods?</i> (Role play with her if she would find it helpful.)• <i>How often are you feeding the baby?</i> (Check if she breastfeeds on demand and for as long as the infant wants.)• <i>How often are you giving nevirapine to your baby?</i> (Ensure she is giving NVP daily, if not, explain why NVP is important, ask in a supportive manner why she is not giving it daily, and help her to address barriers to once daily NVP administration.) Adjust her dose according to weight.• <i>Do you know how long you'll need to continue giving NVP?</i> (Until one week after complete cessation of

<p>2. What recommendations would you give Mwenzi on reducing the risk of MTCT to her baby?</p>	<p>breastfeeding.)</p> <ul style="list-style-type: none"> • <i>Did baby have an HIV PCR test (it was probably done at the six week postnatal visit ? (If yes) Have you received the result? (If infant has not been tested, take DBS for HIV PCR testing. If infant has been tested but results are not available, find out date of testing and track results if overdue.)</i> • <i>Is baby taking the cotrimoxazole? (Ensure that caregiver is giving CPT every day. Inform caregiver that CPT is given from six weeks of age until the baby is confirmed HIV negative.)</i> • <i>Do you know when to introduce foods other than breast milk? (Discuss complementary feeding with continued breastfeeding to 12 months. Discuss good hygiene in light of the fact that Mwenzi does not have access to a regular source of clean water. Discuss transitioning to animal milk from 12 months of age).</i> • <i>If appropriate: Do you know how to express breast milk? (Teach mothers how and when to express and heat-treat breast milk.)</i> • <i>Who knows that you're HIV-infected? Does your mother-in-law know? Do you plan to tell her? Would you like to tell her?</i> • Recommend that Mwenzi continue breastfeeding exclusively for another month and then introduce complementary foods. If Mwenzi indicated there were problems when you asked her how breastfeeding is going, offer to observe a breastfeed and assess the mother's breasts for abnormalities; advise appropriately. • Discuss the introduction of appropriate complementary foods. • Discuss the need to regularly be evaluated for eligibility for lifelong ARV therapy. If eligible, begin lifelong ARV therapy right away. • Discuss continuation of infant ARV prophylaxis; support adherence and infant follow-up. • Encourage her to continue to give CPT until the baby has tested HIV-negative at least six weeks after complete cessation of breastfeeding.
<p>Case Study 2: Lonah</p> <p>1. What questions would you ask Lonah?</p>	<ul style="list-style-type: none"> • <i>How is breastfeeding going for you?</i> • <i>What foods other than breast milk are you giving your baby? Who else feeds the baby? What foods other than breast milk are given to your baby by others who may feed him? Why do you think your mother-in-law is giving the baby porridge? (The infant should not be given any other liquids or foods other than breast milk. Discuss why exclusive breastfeeding is important. Given that the baby is getting diarrhoea — most likely from the porridge — Lonah can argue that exclusive breastfeeding is important to reduce risk of diarrhoea.</i> • <i>When is your son in your mother-in-law's care?</i>

<p>2. What advice would you give Lonah on safer infant feeding?</p> <p>3. What questions would you ask Lonah to ensure that she has been prescribed ARVs and that she is taking them exactly as prescribed for PMTCT?</p>	<ul style="list-style-type: none"> • <i>How comfortable do you feel asking your mother-in-law not to feed your baby?</i> • <i>Have you heard of expressing breast milk?</i> • <i>What would you think of expressing your breast milk to leave with your mother-in-law so that she can cup feed your baby while you are away?</i> • <i>How often are you feeding the baby?</i> (Check if she breastfeeds on demand and for as long as the infant wants.) • <i>Do you know when to introduce foods other than breast milk?</i> (Discuss complementary feeding with continued breastfeeding to 12 months. Discuss good hygiene in light of the fact that this baby has a history of diarrhoea. Discuss transitioning to animal milk from 12 months of age). • Emphasize the importance of exclusively breastfeeding until six months of age. • Find out why the baby is in her mother-in-law's care (does Lonah have to go to work?). • Discuss ways to either avoid leaving the baby with the mother-in-law OR to discuss exclusive breastfeeding with the mother-in-law. • Emphasize that exclusive breastfeeding is the recommendation for all infants who are under six months of age (not just HIV-exposed infants, so this discussion does not require Lonah to disclose if she hasn't already). • Stress that the baby's diarrhoea is almost certainly due to the porridge or water, surely her mother-in-law will agree that is reason enough to stop mixed feeding? • Role play ways for Lonah to discuss this with her mother-in-law, particularly if Lonah does not feel comfortable challenging her. • Conduct a PCR test now to exclude possible infection if the diarrhoea is ongoing. • In addition, encourage her to continue to give CPT until the baby has tested HIV-negative at least six weeks after complete cessation of breastfeeding. • <i>What care are you receiving for your HIV-infection?</i> • <i>When is the last time you went?</i> • <i>What medicines are you taking?</i> • <i>May I see your medicines?</i> (If you brought them with you today.) • <i>How often do you take your medicine?</i> (If Lonah is not adherent, discuss the importance of excellent adherence).
<p>Case Study 3: Saliya</p> <p>1. What questions</p>	<ul style="list-style-type: none"> • <i>When were you diagnosed with HIV? Were you tested for HIV infection previously (for example when you were pregnant)? What was your result then?</i> In this particular case, participants should find out if Saliya recently acquired HIV or if she's

would you ask Saliya?

had it for a while, but was just recently tested. If Saliya recently sero-converted, her risk of transmitting HIV to her baby is actually very high.

- *Are you in care yet for your HIV infection?* (If not, make sure Saliya has blood drawn for CD4 testing and evaluated for eligibility through clinical staging, and that she has been referred for care.)
- *Has the baby ever been tested for HIV?* (Encourage the baby to test today as a matter of urgency so that the best decision can be made to reduce the risk of infection or other illness. If the mother doesn't consent, discuss and support her to overcome barriers to infant testing. The baby's test result will provide guidance for the infant feeding counselling session; see next Session.)
- Baby should be clinically evaluated for signs and symptoms of HIV. In addition:
 - Start the baby on CPT prophylaxis immediately.
 - Withhold NVP prophylaxis until result of PCR is back, to avoid giving monotherapy to a potentially infected infant
- *How is breastfeeding going for you?*
- *What foods other than breast milk are you giving your baby?* (Discuss complementary feeding: when to introduce foods, what types of foods, how often, consistency of new foods, etc. Discuss good hygiene to reduce risk of diarrhoea.) As the baby is still exclusively breastfeeding and is six months old, discuss complementary feeding. Saliya should feel free to introduce complementary foods at any time. But, suggest she postpone the decision to wean the baby from breast milk and transition to formula feeding until the PCR result is back. (If the baby is HIV-positive you will want to encourage continued breastfeeding until two years or longer.)
- *How often are you feeding the baby?* (Check if she breastfeeds on demand and for as long as the infant wants.)
- *Is the baby taking any medicine?* Ask how often she gives the baby medicine, stress the importance of excellent adherence. (Ensure child is given CPT and supported to administer it once daily.)

2. What advice would you give Saliya on safer infant feeding?

If Saliya has been exclusively breastfeeding, encourage her to continue until the results of the HIV PCR test is back.

- **If HIV PCR test is positive** recommend that she continue breastfeeding until 24 months of age with introduction of complementary foods from six months. Review the importance of adherence to daily CPT.
- **If HIV PCR test is negative and Saliya chooses to continue breastfeeding**, initiate NVP immediately and continue until one week after cessation of breastfeeding. Continue giving CPT until final HIV status is determined (PCR test done at least six weeks after cessation of all

	<p>breastfeeding). Discuss continued breastfeeding to 12 months.</p> <ul style="list-style-type: none"> • If HIV PCR test is negative and Saliya is interested in formula feeding, conduct AFASS assessment. If formula feeding is AFASS and Saliya decides to transition to formula, recommend that she transition gradually and continues NVP until one week after cessation of all breastfeeding. Give CPT until final HIV status is determined (at least six weeks after cessation of all breastfeeding with a repeat HIV PCR test). • If Saliya does NOT meet ALL the conditions for formula feeding then discuss risks involved in formula feeding and why she should continue to breastfeed her baby till 12 months of age while introducing complementary foods from six months. • Regardless of infant feeding decision, repeat HIV testing six weeks after complete weaning. • Discuss appropriate complementary foods for the baby, and how and when to initiate complementary feeding. • Review the role of infant ARV prophylaxis and the importance of continuing ARVs until one week after completely stopping breastfeeding (or 16 weeks after starting ARV therapy, if Saliya is eligible for ARV therapy).
<p>Case Study 4: Rosemary</p> <p>1. What questions would you ask Rosemary?</p>	<ul style="list-style-type: none"> • <i>How is formula feeding going for you?</i> • Check if she replenishes her infant formula stock before it runs out. • <i>How do you prepare your baby's feeds?</i> • <i>How long can you keep prepared infant formula?</i> • <i>How much are you feeding your baby at each feed?</i> • <i>How often are you feeding the baby?</i> • Check that she discards unused formula after one hour. • Ensure she is using a cup instead of a bottle for feeding the infant. • <i>Do you breastfeed your baby?</i> (We already know that the answer to this is yes. As the infant is HIV infected, feeding breast milk in addition to formula probably isn't much of an issue. As a matter of fact, maybe Rosemary even wants to transition from formula feeding to breastfeeding — if she does, you should support this decision. Also note, that good infant feeding counselling during ANC that strongly discouraged breastfeeding the formula fed child, may have actually prevented Rosemary's baby from getting HIV. Participants should discuss if this case can be considered a failure of the healthcare system to give Rosemary the information she needed to protect her baby from getting HIV or if this case just another statistic.) • <i>What is your child taking other than formula and breast milk?</i> (Discourage the introduction of foods other than

<p>2. What advice would you give Rosemary to help her take care of herself, including her own HIV infection?</p> <p>3. What advice would you give Rosemary on feeding her baby daughter?</p>	<p>formula or breast milk until the baby is six months old.)</p> <ul style="list-style-type: none"> • <i>Do you have to rely on others to feed your baby</i> (for example, maybe because you've returned to work)? (If yes: Discuss the importance of teaching all caregivers to prepare and give formula correctly and hygienically; discuss how to express to caregivers the importance of not mixed feeding before six months of age.) • Discuss prevention, treatment, and dietary management of diarrhoea and other illnesses that may interfere with feeding. • <i>How long have you known that you are living with HIV?</i> • <i>Are you receiving care for your HIV infection?</i> (If no, provide or refer her for care.) • <i>Are you taking any medicine for your HIV?</i> (If not, provide or refer her to start ARV prophylaxis and assessment for ARV therapy eligibility.) (If yes) <i>Which medicines?</i> • <i>How often do you take your medicine?</i> (Encourage excellent adherence to all HIV medications.) • Find out what else Rosemary needs to know about living with HIV and provide information. • Has she had TB screening and cervical Pap done? Has TB preventive therapy been discussed? • Discuss her home and family situation and sources of support. • Discuss healthy living, good nutrition, sufficient exercise, clean water, cotimoxazole, family planning and condom use. Also ask if her partner has been tested. • Provide Rosemary with information on family-planning and safer sex. • As Rosemary's baby is HIV-infected, we are no longer concerned about PMTCT, instead emphasis is on the infant's health and what is best for her. Advice should be based on Rosemary's response to your question about transitioning from formula feeding to breastfeeding. If she wants to continue formula feeding, discuss correct and hygienic formula feeding with introduction of complementary foods at six months. If she wants to transition to breastfeeding, discuss (or refer for counselling on) re-lactation, with exclusive breastfeeding to six months with introduction of complementary foods. • Ask what she knows about complementary feeding. Let her know that you will provide her with more information about complementary feeding during future visits within the next two months, so that she is ready to introduce complementary foods at six months. Discuss the importance of good hygiene when preparing and feeding complementary foods, this is particularly important for an infant that is ill and immune
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compromised.

- *Is baby taking the cotrimoxazole?* (Ensure that Rosemary is giving CPT every day to prevent common complications associated with HIV opportunistic infections.)



SESSION 4.6: INFANT FEEDING COUNSELLING AND OTHER HEALTH INTERVENTIONS



SESSION DURATION

140 minutes (2 hours, 20 minutes)



SESSION LEARNING OBJECTIVES

- Discuss how growth monitoring information determines assessment and messages provided in the infant feeding counselling session.
- Discuss how the HIV test results affect messages provided during the infant feeding counselling session.



SESSION OVERVIEW FOR FACILITATORS

- Step 1:** Provide a brief introduction to this session, note that this session focuses on the impact of growth monitoring and infant testing on the infant feeding counselling session.
- Step 2:** Provide a brief overview of growth monitoring. Then discuss how growth monitoring information determines assessment and messages provided in the infant feeding counselling session.
- Step 3:** Introduce and facilitate Exercise 8: Growth Faltering Plotting Exercise.
- Step 4:** Provide a brief overview of infant and child HIV testing. Then discuss how the HIV test results affect messages provided during the infant feeding counselling session.
- Key Points:** The key points for this session are:
- Given that growth is affected by nutritional status, assessment of growth will, in part, determine the questions asked and recommendations provided to parents during the infant feeding counselling session.
 - When the child's HIV test result is provided, is it important that parents are also given information on how the test result affects infant and young child feeding recommendations.

SESSION INTRODUCTION

All infants and children, not just those who are HIV-exposed, must have access to primary care, including routine growth and development monitoring, immunisation, Vitamin A prophylaxis and de-worming. This session will focus on two interventions that influence infant feeding messages for parents: a) routine growth and development monitoring and b) routine testing of HIV-exposed infants. HIV-exposed and affected

children require access to all of the routine healthcare services provided to other children, these services are not discussed in this session as they are beyond the brief of this module. For more information about the health care of children, see Module 1 in this training series “Module 1: Clinical Skills Building for Child Health”.

GROWTH MONITORING TO ASSESS FEEDING PRACTICES



FACILITATOR INSTRUCTIONS

- Introduce growth monitoring by explaining the intersection of growth monitoring and infant feeding counselling and support. Specifically, point out how information from growth monitoring will affect messages provided to parents in the infant feeding session. Encourage discussion by asking:
 - *How do you think the result of the growth monitoring affects what is discussed in the infant feeding counselling session?*
- Then explain step-by-step how to take weight, height and head circumference measurements and how to record in the Road to Health booklet. If you think participants in your group need more information on how to take weight, height and head circumference measurements, refer to Modules 1 and 5 of this Training Series. Engage participants by asking someone who routinely takes child measurements to explain the process.

Growth monitoring is a part of each clinic visit for every child. Growth monitoring, which includes measures of height, weight and head circumference, is critical for the prevention and early identification of growth faltering. Growth problems can be indicative of poor feeding practices, acute or chronic health problems or disease progression. This session will address infant feeding counselling and growth problems. Refer to Modules 1 and 5 of this Training Series for more information on addressing medical problems or disease progression.

Growth faltering (failure to thrive) involves failure to meet expected potential in growth and other aspects of wellbeing.

An adequate rate of growth is the hallmark of good nutritional status in children. Caregivers should be encouraged to request healthcare promptly when they think their child is losing weight or not gaining weight sufficiently, even if it is not yet time for their child’s routine growth monitoring visit. Growth monitoring provides an opportunity for the healthcare worker to intervene to prevent serious growth problems.

Good feeding practices, both before the child is six months old and after complementary foods have been introduced, can help prevent the growth faltering in both weight and length as well as tendency to overweight.

PLOTTING WEIGHT, LENGTH/HEIGHT AND HEAD CIRCUMFERENCE

Plotting is necessary to assess whether the child is growing or gaining weight at an adequate rate. The steps to plot weight-for-age, weight-for-length/height and head circumference are in Table 4.17: Plotting growth charts.

Table 4.17: Plotting growth charts

Step 1	<p>Obtain measurement</p> <ul style="list-style-type: none"> Obtain accurate weights, length/height and head circumference. When weighing and measuring children, follow procedures that yield accurate measurements and use equipment that is well maintained.
Step 2	<p>Select the correct growth chart</p> <ul style="list-style-type: none"> Select the appropriate chart based on sex of the child. The weight and length/height growth charts can be found in the Road to Health booklet. Head Circumference can be requested through your clinic manager (or downloaded from the WHO website).
Step 3	<p>Complete the necessary charts</p> <ul style="list-style-type: none"> Ensure the child's Road to Health booklet or other applicable medical chart is completed with the appropriate demographic, social and clinical information.
Step 4	<p>Record measurement and date</p> <ul style="list-style-type: none"> Record today's date, child's exact age today, weight and length/height on page 2 or 3 of the Road to Health booklet. Weight: record the child's weight and today's date in the space corresponding to the child's age in months along the lower horizontal axis near the bottom of the appropriate page in the Road to Health booklet (pages 14–15). Length/height: although there is no dedicated space for it, if it makes it easier to plot (Step 5), you may record the child's length/height and today's date in the margin just below "Length/height in centimetres (cm)" near the bottom of page 17 and 18 in the Road to Health booklet. Head circumference: although there is no dedicated space for it, if it makes it easier to plot (Step 5), you may record the child's head circumference and today's date in the margin just below the child's age in weeks/months below the lower horizontal axis of the head circumference-for-age growth chart.
Step 5	<p>Plot the measurement</p> <ul style="list-style-type: none"> Weight and head circumference: <ul style="list-style-type: none"> Find the vertical line that corresponds to the child's age (in week, months or years) using the ages listed along the lower horizontal axis. Use a straight edge ruler to draw a vertical line up from that point. Find the weight or HC measurement on the vertical axis (on the right or left side of the chart). Use a straight edge ruler to draw a horizontal line across from that point until it intersects the vertical line. Make a small dot where the two lines intersect. Weight-for-length/height: <ul style="list-style-type: none"> Find the vertical line that corresponds to the child's length/height in centimetres using the centimetres listed along the lower horizontal axis. Use a straight edge ruler to draw a vertical line up from that point. Find the weight measurement on the vertical axis (on the right or left side

	<p>of the chart). Use a straight edge ruler to draw a horizontal line across from that point until it intersects the vertical line.</p> <ul style="list-style-type: none"> • Make a small dot where the two lines intersect.
Step 6	<p>Compare</p> <ul style="list-style-type: none"> • Compare today's measurement with the measurements from previous visits to identify any major shifts in the child's growth pattern and the need for further assessment.
Step 7	<p>Interpret the plotted measurements</p> <ul style="list-style-type: none"> • Children who are well and healthy should gain weight at a predictable rate and follow a path parallel to the 0 line (median). • The line labelled "0 line (Median)" in the middle of the growth chart is the median line which is, generally speaking, the average. • The other lines (2 or 3 line and the -2 and -3 lines), indicate distance from the average. These lines as well as the median are also referred to as z-score lines. • About 95 out of 100 children's measurements will fall between the 2 and -2 lines. • The growth curve of a normally growing child will usually follow a z-score line that is roughly parallel to the median. The track may be above or below the median.
Step 8	<p>Evaluating growth</p> <ul style="list-style-type: none"> • Any quick change in trend (the child's curve veers sharply upward or downward from its normal track) should be investigated to determine its cause and remedy any problem. • A flat line indicates that the child is not growing. This is called stagnation and should also be investigated. • A growth curve that no longer follows the line that the child normally follows, or an inconsistent pattern, may indicate risk. Interpret risk based on the weight status of the child according to the growth chart (see also Table 4.18) and by how sharply the child's growth pattern line rises or falls on the chart.

INTREPRETING GROWTH CHARTS



FACILITATOR INSTRUCTIONS

- Discuss how to interpret information from growth monitoring. Introduce Table 4.18 explaining that a point that falls below the - 2 or -3 z-score line suggests that an immediate intervention is necessary.
- Next ask participants to discuss how to interpret a child's growth curve, which is a set of measurements taken over a period of time that are plotted to compare a child's growth to expected growth. Refer to Figure 4.7, Figure 4.8, Figure 4.9, and Figure 4.10 and for each of the figures ask:
 - *What questions would you like to ask the parents of this child?*
 - *What is your diagnosis/assessment?*
 - *How would you recommend the parents of this child?*

Identifying the signs of growth faltering and intervening at an early stage is crucial to ensuring the health of children with HIV. Early weight loss or inadequate rate of growth can be identified by observing the child's weight, length/height and head circumference at a single point in time and over time.

The growth charts in Figure 4.7–Figure 4.10 are from the Road to Health booklet. Note that the child's age in months is along the bottom and the weight is up the side. There are five lines on the Roads to Health booklet growth charts. The line labelled 0 is the median which is, generally speaking, the average. It is also called the 50th percentile because the weights of 50 percent of healthy children are below it and 50 percent are above it. Most healthy children are near this median curve.

The other lines, called z-score lines, indicate distance from the median. A point or trend that is far from the median, such as 3 or -3, usually indicates a growth problem. The growth curve of a normally growing child will usually follow a track that is roughly parallel to the median. When weight “falters” or the growth curve “flattens” and is no longer parallel to the z-score line, there is a need for clinical and nutritional intervention. One weight on its own does not give you much information. You need a pattern of marks before you can judge the tendency of growth.

Any single measurement that falls below the -1 z-score line (whether weight-for-age, weight-for-length/height, BMI-for-age or head circumference) should be further assessed and an intervention developed based on a nutrition assessment. The questions included in a nutrition assessment are listed in Figure 4.8 and Figure 4.9, below. Children who fall below the -3 line require hospitalisation.

Table 4.18: Interpreting points on growth charts

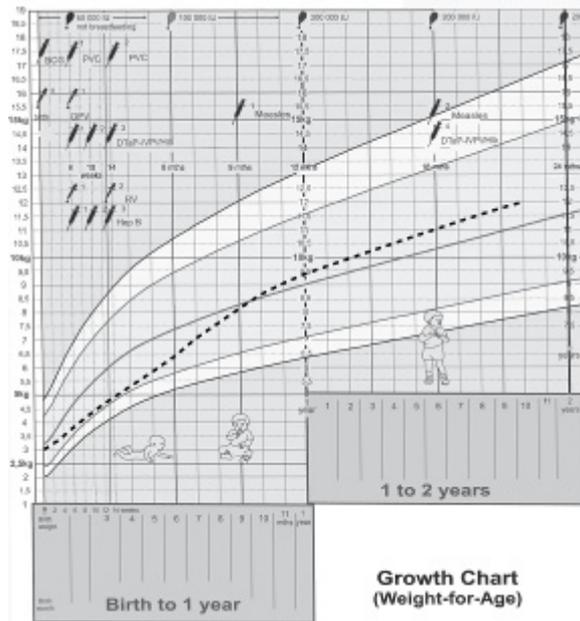
z-score	Growth indicators			
	Weight-for-age	Weight-for length/height	BMI-for-age	Head circumference
Above 3	See note 1	Obese	Obese	Macrocephaly
Above 2		Overweight	Overweight	Possible macrocephaly
Above 1		Possible risk of overweight (see note 2)	Possible risk of overweight (see note 2)	
0 (median)				
Below - 1				
Below - 2	Underweight	Wasted	Wasted	Possible microcephaly
Below - 3	Severely underweight (See note 3)	Severely wasted	Severely wasted	Microcephaly
Notes:				
1. A child whose weight-for-age falls in this range may have a growth problem, but this is better assessed from weight-for-length/height or BMI-for-age.				
2. A plotted point above 1 shows possible risk. A trend towards the 2 z-score line				

shows definite risk.

3. This is referred to as very low weight in IMCI training modules. (Integrated Management of Childhood Illness, In-service training. WHO, Geneva, 1997).

Measurements in the shaded boxes are in the normal range.

Figure 4.7 Diagrams of Adequate Growth and Growth Faltering
Adequate Weight Gain



How would you advise the parent of the child whose growth is represented by the figure to the left?

Answer: this child's weight gain is adequate, compliment the parent note that this is exactly what we like to see, no nutrition intervention is necessary unless there are other issues.

Figure 4.8 Early Growth Faltering in the Presence or Absence of Illness

What questions would you ask the parent of the child whose weight is represented by the figure to the right?

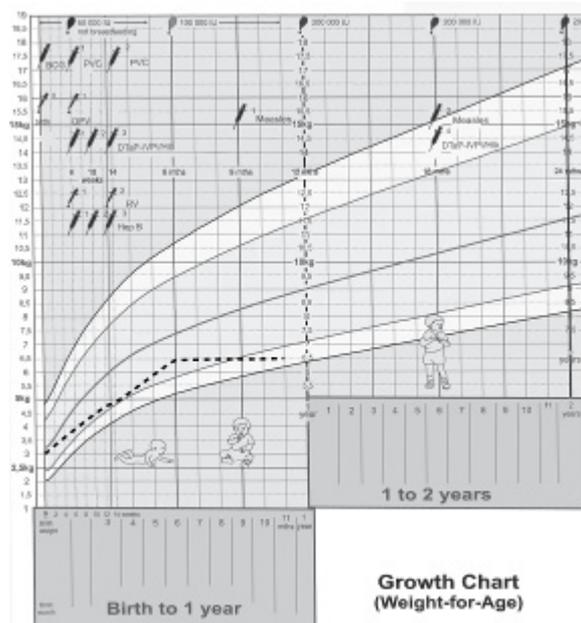
Answer: This child grew well for the first few months but has not grown at all in the last five months — his weight is now static (this is what is referred to as “flattening of the curve”). Key questions to ask the mother as part of the nutrition assessment include:

General question

- How has this child's health been over the past few months?

Nutrition-related assessment

- How was this child fed for the first six months of life?
- What milk does this child have now?
- What feeds does this child receive



The nutrition assessment for this particular child would reveal that he was exclusively breastfed for the first six months, then his

now? How often does he eat? How much does he eat?

- What types of food does he eat?
- How do you prepare his foods?
- What, if any, problems have you encountered?

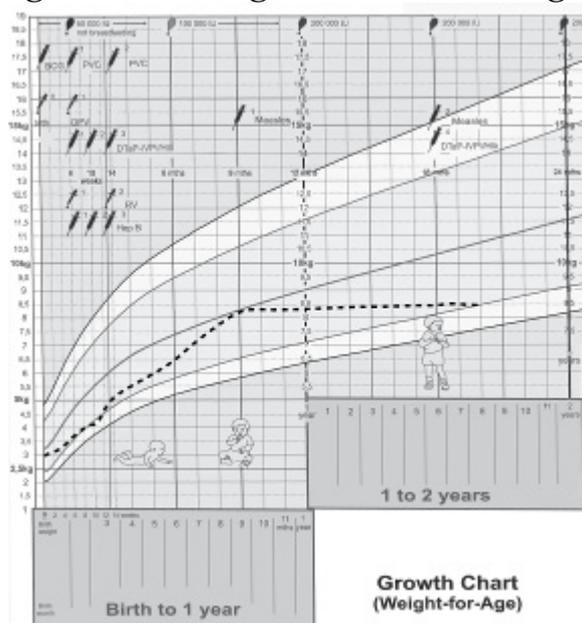
If this child had been under the age of six months, the nutrition-related questions would have, instead, included the following:

- What are you feeding your child?
- What else is your baby taking?
- How do you feed your child (cup fed, bottle fed, spoon fed)?
- What, if any, problems have you encountered?

mother breastfed him frequently by day and night. At six months his mother started to give him thin cereal porridge twice a day. He was not gaining adequate weight because he needed more frequent, nutrient-rich complementary foods each day.

It is important that intervention begins at this stage — before growth faltering affects development. Provide education, support and referrals to prevent any further growth faltering. Make an appointment for follow up growth monitoring and counselling in two to four weeks.

Figure 4.9 Prolonged Growth Faltering



How would you advise the parent of the child whose growth is represented by the figure to the left?

Answer: This child is experiencing prolonged growth faltering. There should have been some sort of intervention when the growth flattened, which was obvious at twelve months of age.

General questions

First, find out what interventions have been recommended (if any) and what the parent did in response to these interventions. Other questions include:

- How is your daughter (son)?
- How is your child feeding?

Food security assessment

- How often in a week do you feel there isn't enough food in the house to feed everyone?

Nutrition-related assessment

- Please tell me what and how much your child ate and drank all day yesterday?
 - What did your child eat for breakfast yesterday? What did she drink?
 - What snacks did she eat after breakfast and before lunch? What did she drink? (Continue to ask similar questions about lunch, dinner as well as afternoon and evening/night time snacks.)
 - How big was the portion she ate?
 - How was it cooked (boiled, fried, baked)? Did you add anything to it, such as

butter, peanut butter, jam or condiments (tomato sauce or pickle)?

Health-related assessment

- What traditional remedies is your child taking?
- Review the Road to Health booklet and ask about the child’s medical history (also enquire about HIV if not obvious from the Road to Health booklet).

Social assessment

- Tell me more about your child’s play — does she run, play sports with other children?
- Has your child experienced any major changes at home or school?
- Have there been any major life changes experienced by others in the home (new baby, divorce/separation, new job, illness, death, etc)?
- How has your (the parent) health been since the last visit?

The nutrition assessment for this particular child would reveal that he grew, in general, quite well until nine months of age. At nine months, the family saw that he was eating complementary foods, so they thought it would be acceptable if he shared his formula (as provided by the clinic) with his two brothers and one sister. Without a sufficient and regular source of milk, the baby’s growth began to falter. It is important to act quickly, provide appropriate nutrition counselling and advice and refer for medical care (assuming there are underlying health issues) and social services (if there are underlying social issues) before hospitalisation is required. Make an appointment for follow up growth monitoring and counselling in two to four weeks.

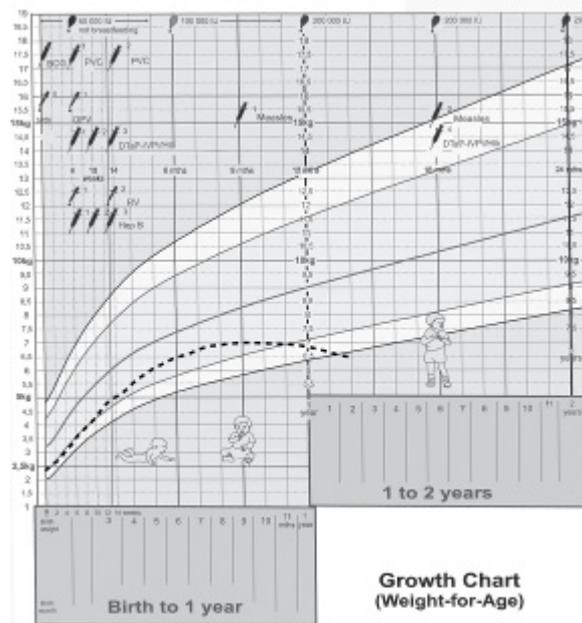
Figure 4.10 Severe Growth Faltering (Weight loss)

How would you advise the parent of the child whose growth is represented by the figure to the right?

Advise the caregiver based on clinical presentation and ensure the child has immediate access to a good clinical evaluation including TB and HIV. There is a good chance that this child might require hospitalisation to address the underlying case of the malnutrition and to treat the malnutrition.

This is not likely to be the right time to provide nutrition counselling, this child probably needs emergency support right now. Ensure nutrition counselling is a part of follow up care (at which time the healthcare workers should follow the questions in Figure 4.8 and Figure 4.9.).

The nutrition assessment for this particular child would reveal the following reasons for this child’s severe growth faltering:



- The healthcare worker that previously saw this child was inexperienced, and neglected to provide adequate intervention when growth faltering first became apparent (at nine months of age)
- The caregiver may have “shopped

around,” i.e., gone to different clinics for each visit to avoid questions from the healthcare worker and counselling.



FACILITATOR INSTRUCTIONS

- Introduce and facilitate Exercise 8: Growth Faltering Plotting Exercise.

Exercise 8: Growth Faltering Plotting Exercise Individual exercise and large group discussion followed by Small group work: participants break into groups of 3–5

Purpose	<ul style="list-style-type: none"> • To review plotting on the Road to Health growth chart and to identify growth faltering.
Duration	60 minutes
Introduction	This exercise will give participants an opportunity to plot growth on the Road to Health booklet and to identify growth faltering.
Activities Part 1 Individual work	<ul style="list-style-type: none"> • Ask participants to take out their copies of the Road to Health growth chart (Appendices 7 and 8), and Table 4.17: Plotting growth charts. • On a flip chart, write the following age and weights and ask the participants to plot baby Naledi’s growth on the correct (they should go to the girl’s growth chart, Appendix 8) Road to Health growth chart. <ul style="list-style-type: none"> • Birth weight 2.5kg • 2 months 4kg • 4 months 5.5kg • 6 months 6.7kg • 8 months 7kg • 10 months 6.8kg • Walk around the room and help participants as needed to ensure that everyone understands the exercise and is plotting correctly. • Ask participants to describe Naledi’s growth trend from birth to 10 months of age. (Answer: Naledi gained weight until the 8 month visit, but starting from the 6 month visit you can see that her growth is flattening and no longer parallels the 0 line (median); by the 10 month visit her growth touches the – 2 z-score line.) • Note that Naledi’s growth curve underscores the importance of a growth chart. If the weight was not plotted on a growth curve, this baby’s growth faltering may not have been detected until severe growth faltering occurred as she was gaining weight (she just wasn’t gaining enough weight). • Point out that as in Naledi’s case, children may gain weight but still have growth failure.
Activities Part 2	<ul style="list-style-type: none"> • Ask participants to break into groups of 3–5 participants per group. • In their small groups participants should discuss:

<p>Small group work</p>	<ul style="list-style-type: none"> • <i>What questions would they ask Naledi's parents as part of the nutrition assessment?</i> • <i>How would they advise Naledi's parents?</i> <ul style="list-style-type: none"> • Participants should take notes on flipchart. • After about 25 minutes ask the groups to reconvene. • Ask the first group to list the questions they would ask Naledi's parents. Ask other groups if they would like to add or delete any questions. Their answers should cover the questions listed in Figure 4.8 and Figure 4.9. • Ask the other groups how they would advise Naledi's parents. Ask the other groups if they would like to add or delete any thing from the care plan. Recommendations should also include timeline for follow up care.
<p>Debriefing</p>	<ul style="list-style-type: none"> • This exercise reviewed plotting on the growth curve, provided experience detecting growth faltering and providing counselling to parents of a child whose growth is faltering. The exercise illustrates the importance of looking at a child's growth curve before reviewing growth.

Answers to Exercise 8: Growth Faltering Plotting Exercise

- Naledi's birth weight was adequate, she grew at an appropriate rate until 6 months.
- Between 6-8 months growth rate flattened. If the healthcare worker had the opportunity to see Naledi during this time frame, she would have wanted to ask:
 - How is Naledi?
 - How has her health been over the past few months?
 - How is your child feeding?
 - How often in a week do you feel there isn't enough food in the house to feed everyone?
 - How was Naledi fed for the first six months of life?
 - What milk does Naledi have now?
 - What feeds does Naledi receive now? How often does he eat? How much does she eat?
 - What types of food does she eat?
 - How do you prepare her foods? Who else prepares her foods?
 - What, if any, problems have you encountered?
- Please tell me what and how much Naledi ate and drank all day yesterday?
 - What did Naledi eat for breakfast yesterday? What did she drink?
 - What snacks did she eat after breakfast and before lunch? What did she drink? (Continue to ask similar questions about lunch, dinner as well as afternoon and evening/night time snacks.)
 - How big was the portion she ate?
 - How was it cooked (boiled, fried, baked)? Did you add anything to it, such as butter, peanut butter, jam or condiments (catsup or pickle)?
- What traditional remedies is Naledi taking? How is it prepared?
- Review the Road to Health booklet and ask about the child's medical history (also enquire about HIV if not obvious from the Road to Health booklet).

- Has Naledi been tested for HIV?
- If Naledi is HIV-positive: Does she have any HIV-related symptoms?
- Is Naledi on lifelong ARV therapy? If so, when did she start and how often has she been taking her medicine in the past week? How many times did she take her medicine yesterday? If she is not on lifelong ARV therapy, ask her mother if she has been referred to an ARV clinic. If so, find out what happened when she went and if there was follow up. If not, make the referral as a matter of urgency, discuss possible barriers to attending the clinic.
- Tell me more about Naledi's play — does he/she run, play sports with other children?
- Has Naledi experienced any major changes at home or school?
- Why do you think Naledi might be growing slowly?
- Have there been any major life changes experienced by others in the home (new baby, divorce/separation, new job, illness, death, etc)?
- How has your (the parent) health been since the last visit?

Naledi's nutrition assessment might reveal that she was breastfed up to six months of age (when she was following the 0/median line on the growth chart). But when complementary foods were introduced at six months, her caregivers — who were experiencing food insecurity due to the father's recent loss of employment — provided a watered-down gruel that did not provide sufficient energy or vitamins. In addition, on the occasion that she was offered meat or fish, it was typically prepared in the cool of the morning, stored at room temperature the entire day, and then fed to Naledi in the evening — giving her diarrhoea.

HIV TEST RESULT AND INFANT FEEDING COUNSELLING



FACILITATOR INSTRUCTIONS

- The HIV test result affects messages provided in the infant feeding counselling session. Start by providing a brief overview of infant testing.
- Then focus on counselling messages, focusing the discussion on the scenarios in Table 4.19. Encourage discussion by asking:
 - *For the first scenario (Infant tests HIV-positive), what are the key infant feeding counselling points? Give participants at least ten minutes to discuss what should be included in this session.*
 - *For the second scenario (Infant tests HIV-negative and is breastfeeding), what are the key infant feeding counselling points? Give participants at least ten minutes to discuss what should be included in this session.*
 - *For the second scenario (Infant tests HIV-negative and has **NOT** breastfed for six weeks or more), what are the key infant feeding counselling points? Give participants at least ten minutes to discuss what should be included in this session.*

INFANT TESTING, OVERVIEW

All HIV-exposed infants should be tested for HIV at six weeks of age using DNA PCR testing. At most healthcare facilities, the shipment of blood samples for DNA PCR testing is facilitated through a practical approach to collecting and transporting infant blood samples called dried blood spot (DBS) testing. With DBS, drops of the infant's whole blood are collected on a special filter paper, dried, carefully packed in plastic bags, stored and then sent to the laboratory for testing. The advantages of DBS testing include the following:

- Specimens are stable and therefore easier to transport.
- Taking a heel prick or finger prick is easier than filling a tube.
- Specimens are dried and transported on the paper making handling safer and easier.



Mothers of infants with unknown HIV exposure should be counselled and the mother tested for HIV (using HIV antibody testing) as soon as possible. For women who have recently delivered a baby, the advantages of HIV testing are numerous:

For women who test HIV-negative, HIV testing and counselling provides:

- Information and support to remain uninfected
- Information and support to exclusively breastfeed for the first six months of life

For pregnant women who are HIV-infected, HIV testing and counselling provides an opportunity to:

- Receive appropriate and timely interventions to reduce MTCT including:
 - Postnatal lifelong ARV therapy or PMTCT prophylaxis
 - Provision of information on infant feeding options and infant feeding counselling and support
 - Provision of (or referral for) prevention, treatment, care and support for women infected with HIV, their infants and their families
- Discuss the importance of partner testing and prevention
 - Discordance
 - Disclosure and partner referral
 - Prevention of sexual transmission of HIV
- Learn about the needs of HIV-exposed children:
 - DNA PCR testing of children less than 18 months of age
 - HIV antibody testing of children 18 months or older
 - CPT
 - Referral of older children for HIV testing
- Make informed decisions about future pregnancies

Women testing HIV-positive in postnatal care, should then be counselled and, assuming consent is given, their children tested for HIV using the appropriate test for age (up to 18 months use DNA PCR, 18 months of age and older use HIV antibody).

If the mother of a child whose HIV status is unknown is not available for HIV testing, the child should be tested using an HIV antibody test. If the child is 18 months of age or older, then the HIV antibody test result will reflect the child's HIV status. If the child is

less than 18 months of age, then the HIV antibody test result reflects the child’s HIV exposure status (that is, the mother’s HIV status), so the child will need to be retested for HIV using DNA PCR.

INFANT TESTING AND INFANT FEEDING COUNSELLING

The infant feeding counselling that accompanies HIV testing (both pre- and post-test counselling) are opportune times to reinforce information provided in earlier sessions and to provide the mother with information and motivation she needs to adhere to earlier advice or to reconsider her options. The various scenarios are discussed below in Table 4.19.

Table 4.19: Key counselling points based on HIV test result

Scenario	Key counselling points
DNA PCR testing	
Infant tests HIV-positive (by DNA PCR if less than 18 months of age or by HIV antibody if 18 months of age or older)	<p>Breastfeeding mothers: Strongly recommend to the mother that she continue to exclusively breastfeeding to six months of age and continue breastfeeding up to two years or longer. Introduce complementary feeds at 6 months of age.</p> <p>Formula feeding mothers: Encourage the mother to continue formula feeding exclusively until the baby is 6 months old when nutritious complementary foods will be gradually added. She can transition the baby from formula to full cream/whole animal milk after the first birthday. Baby should continue taking milk until at least 24 months of age. Both infant formula and animal milk should be given by cup (not bottle). Stress the importance of correct and hygienic replacement feeding, especially for the child that is immune compromised. If the infant is young and the mother is very motivated to breastfeed, provide her with (or refer her for) counselling on re-lactation.</p> <p>All mothers, additional important points:</p> <ul style="list-style-type: none"> • Positive living, including the importance of ongoing healthcare and healthy lifestyle. • Baby to continue taking CPT to avoid getting PCP Pneumonia. • NVP prophylaxis should be discontinued to avoid monotherapy. • Refer the parent and child for ongoing healthcare, including HIV-related care, treatment and support. • Always provide parents in this position with much support, not only in the post-test session but also in subsequent visits, ensure that they know that they are not to blame for their child’s HIV diagnosis. • HIV-infected children require more food in comparison to children who are not HIV-infected, provide support to prevent malnutrition. • Provide nutrition counselling based on symptoms (if the child has any). For example, oral candidiasis, can make eating painful; counselling will be needed to assist parents to deal with conditions that can affect appetite and eating habits.

<p>Infant tests HIV-negative</p>	<p>Mother is breastfeeding: Inform the mother that although her baby is HIV-negative now, she can still transmit HIV to her baby through breast milk. But here is how she can dramatically reduce that risk.</p> <p>Mothers should exclusively breastfeed for the first six months of life and then introduce complementary foods while continuing to breastfeed to 12 months of age. At 12 months of age she should stop breastfeeding gradually (over a period of one month) if it is safe for her to do so.</p> <p>For as long as she is breastfeeding she should continue administering NVP and CPT to her infant until advised by the healthcare worker that she can stop.</p> <p>If, at 12 months of age, a mother does not yet meet the conditions needed to wean, continuation of breastfeeding is recommended, while the mother and baby continue to be regularly assessed and counselled.</p> <p>Counselling should also include discussion of:</p> <ul style="list-style-type: none"> • If child is less than six months of age: The importance of exclusively breastfeeding for the first six months of life. Discuss sources of pressure to mix feeding and role play ways to address this pressure. • Expressing and heat-treating breast milk to reduce risk of MTCT during high risk periods (see Appendix 2) • How to prevent breast conditions (such as engorgement, sore nipples or mastitis). • The importance of adhering to the infant ARV prophylaxis regimen until one week after complete cessation of breastfeeding OR the importance of adhering to maternal ARV regimen. • Continue CPT until the child is confirmed HIV-negative at least six weeks after complete cessation of breastfeeding. <p>An HIV-negative test result can be a powerful motivator to parents. Use this opportunity to encourage and support parent to follow national recommendations on infant feeding very carefully and to make a plan for weaning, depending on the safety of formula feeding for their situation.</p> <p>Mother is formula feeding: If the mother last breastfed more than six weeks ago (or never breastfed), reassure her that you are confident that the test result accurately reflects her child's HIV status. She may stop giving CPT, if it was previously prescribed. Also discuss:</p> <ul style="list-style-type: none"> • Correct and hygienic formula feeding. • Exclusive formula feeding (avoid all breastfeeding; avoid introducing any other foods until six months of age). • Introduction of complementary foods at six months of age with
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continued formula feeding to 12 months of age.

Counselling should also include discussion of:

- Administration of infant ARV prophylaxis for the first six weeks of life.
- If applicable, the importance of adhering to maternal ARV regimen.
- Family planning

All mothers of children over six months of age: Advise the mother to provide the child who is no longer formula- or breastfeeding with full cream/whole animal milk until at least 24 months of age.

Children should receive milk in some form frequently throughout the day. The table below shows approximately how much milk (formula or animal milk) the non-breastfed infant needs to drink each day.

Minimum amount of milk per day for children 6–24 months	
Scenario	Animal milk needed
If other animal-source foods are regularly consumed	200–400 ml
If other animal-source foods are not consumed*	300–500 ml

* Infants who are not breastfed and do not consume the minimum amount of animal milks or animal-source foods daily will need to consume large quantities of calcium, zinc and iron to meet their nutritional needs. This may be achieved by eating fortified foods, if available, or by taking daily supplements.

Counselling should also include discussion of:

- All milks (except UHT milk that has been open less than one hour, evaporated milk open less than one hour and powdered full-cream milk prepared with boiled water) must be boiled before giving to a child less than 12 months of age. Raw or unpasteurised milk—from any animal (e.g., cow, goat, sheep or buffalo) — must be boiled before consumption by any individual of any age.
- Encourage the mother to continue to participate in HIV-related healthcare to preserve her own health.
- Encourage the mother to continue to bring her child in for regular immunisation visits.



APPENDIX I: ADVANTAGES OF CUP FEEDING



Formula and expressed breast milk should be fed to baby using a cup. Healthcare workers should explain to caregivers that cup feeding is preferable for the following reasons:

- Cups are safer, as they are easier to clean with soap and water than bottles.
- Cups are less likely than bottles to be carried around for a long time (which gives bacteria the opportunity to multiply).
- Cup feeding requires the mother or other caregiver to hold and have more contact with the infant and provides more psychosocial stimulation than bottle feeding.
- Cup feeding is better than feeding with a cup and spoon because spoon feeding takes longer and the mother may stop before the infant has had enough.

Feeding bottles are not necessary and in most situations they should not be used.

Using feeding bottles and artificial teats should be actively discouraged because:

- Bottle feeding increases the infant's risk of diarrhoea, dental disease and ear infections.
- Bottle feeding increases the risk that the infant will receive inadequate stimulation and attention during feedings.
- Bottles and “teats” need to be thoroughly cleaned with a brush and then sterilised by boiling; this takes time and fuel.
- Bottles and “teats” cost more than cups and are less readily available.

How to feed an infant with a cup

- If you want, wrap the infant so he or she cannot knock the cup out of your hand
- Hold the infant sitting upright or semi-upright on your lap.
- Place the rim of the cup at the outer corners of the upper lip, resting gently on the lower lip with the tongue inside the cup.
- Tip the cup slowly so that the milk is just touching the baby's lips.
- The infant usually automatically sips the milk.
- Allow time for the infant to swallow.
- Allow the baby to rest between sips, but do not remove the cup from this position.
- Do not pour the milk into the baby's mouth.
- When the infant has had enough, he/she will close its mouth. If the infant has not taken the calculated amount, it may take more next time or the mother needs to feed more often.
- Measure the infant's intake over a 24-hour period, not just at each feed, to calculate whether the infant is getting the right amount of milk.



*Low birthweight infants will start to take milk with the tongue. A full-term or older infant will suck the milk, spilling some.

What you do...	Why you do it...
<p>1. Get Ready</p> <ul style="list-style-type: none"> • Wash hands with soap and water. • Hold the infant close and comfortable. • Pour small amount of formula in infant's cup. 	<ul style="list-style-type: none"> • Any form of dirt or germs may give your infant diarrhoea. • Close touching fosters bonding. • Helps prevent spilling and contamination if infant doesn't finish the entire feed.
<p>2. Feed the infant</p> <ul style="list-style-type: none"> • Put the cup to infant's lips. Don't tip the cup too much. • Let the infant lap or suck the milk at his/her own rate. • Keep the cup to infant's lips until s/he is ready to drink again. • Encourage infant to continue feeding as long as possible or until feed is finished. 	<ul style="list-style-type: none"> • Too much formula may make the infant choke. • Every infant is different and may take a little more or less at different feedings. • Do not force-feed the infant.
<p>3. Clean the utensils</p> <ul style="list-style-type: none"> • Wash utensils with soap and clean water immediately after use; rinse with clean water. • Kill germs by boiling utensils in a pan (completely cover utensils with water), bring water to a rolling boil for 1-2 seconds. Store in pan and boiled water until needed. • Alternatively you can kill germs by soaking utensils in a chemical steriliser — such as Milton (follow manufacturer's instructions). 	<ul style="list-style-type: none"> • Like milk, formula is sweet and germs grow quickly. • Contaminated utensils may make your infant sick. 
<p>Cup feeding is always to be used instead of bottle feeding.</p> <p>Be prepared</p> <ol style="list-style-type: none"> 1. Use a reliable family-planning method to prevent getting pregnant too soon. 2. If you have a problem, consult a healthcare worker for help. 	

This appendix was adapted from the following:

WHO, UNICEF & USAID. (2005): HIV and infant feeding counselling tools: Reference Guide.

http://www.who.int/child-adolescent-health/New_Publications/NUTRITION/HIV_IF_CT/ISBN_92_4_159301_6.pdf

http://www.who.int/child-adolescent-health/New_Publications/NUTRITION/HIV_IF_DM.pdf

WHO & UNAIDS. (2003): HIV and infant feeding: Guidelines for decision-makers.

http://www.who.int/child-adolescent-health/New_Publications/NUTRITION/HIV_IF_DM.pdf

WHO & UNAIDS. (2003): HIV and infant feeding: Guidelines for health care managers and supervisors.

http://www.who.int/child-adolescent-health/New_Publications/NUTRITION/HIV_IF_MS.pdf

Include appendix on complementary feeding?



APPENDIX 2: STEPS TO EXPRESS AND HEAT-TREAT BREAST MILK



WHAT MIGHT I NEED TO EXPRESS BREAST MILK?

Mothers with HIV may consider expressing and heat-treating breast milk in the following circumstances:

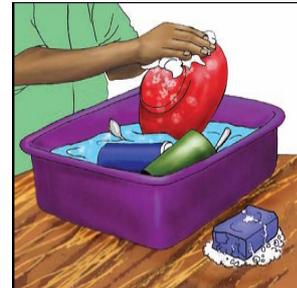
- When her infant is born with low birthweight or is otherwise ill and unable to breastfeed
- When the mother is unwell and temporarily unable to breastfeed
- When the mother has a breast condition such as mastitis
- When the mother is weaning and transitioning the child to another form of milk
- When ARVs are temporarily not available

WHAT DO I NEED TO DO TO GET READY TO EXPRESS BREAST MILK?

Keep the utensils that you use to express milk and feed your baby as clean as possible. Keep the surface on which you work clean as well; if possible, work on a table mat that you can clean each time.

1. Wash

- Wash or soak utensils with cold water immediately after use to remove milk before it dries. Then wash with hot soapy water.
- Rinse thoroughly in water from a safe and clean source.



2. Sterilise

- Boiling:
 - Put washed/rinsed utensils in a large pan. Fill the pan with water to cover all the utensils, ensure there are no trapped air bubbles.
 - Cover the pan with a lid and bring to a rolling boil (when the water has large bubbles). Boil water vigorously for 1–2 seconds.
 - Keep the pan covered until the utensils are needed.
- Other ways to sterilise: If using a home steriliser (for example, electric or microwave steam steriliser or chemical steriliser — such as Milton or another bleach solution), follow manufacturer's instructions.



3. Store

- Remove utensils from the pan or steriliser just before they are to be used.
- If possible, use sterilised kitchen tongs for handling sterilised utensils.
- If utensils are removed from the pan or steriliser and not used immediately, they should be covered and stored in a clean place.

Hand washing

- Always wash your hands before removing utensils from a steriliser, before expressing breast milk and before feeding a baby/child. Wash your hands thoroughly:
- Wash with soap or ash and with plenty of clean running or poured water.
- Wash the front and back of hands, between fingers and under nails.
- Let your hands dry in the air or dry them with a clean cloth. It is best not to dry them on your clothing or a shared towel.

HOW TO EXPRESS BREAST MILK

- Get a sterilised container with a wide neck and a cover.
- Wash your hands with soap and clean water (see box above).
- Sit or stand in a comfortable position in a quiet, private place. Drink something warm and try to relax as much as possible. You may ask someone to massage your back to help your milk to flow.
- Lightly massage your breasts and gently pull or roll your nipples. You may find it helpful to apply a warm compress to your breasts.
- Put your thumb on the breast above the nipple and areola (the dark area around the nipple) and your first finger below the nipple and areola. Support your breast with your other fingers.
- Gently press your thumb and first finger together. Press and release, press and release, to start the milk flowing. This should not hurt. If it does, then you are not doing it right.
- Press the same way on the sides of the areola in order to empty all parts of the breast.
- Do not squeeze the nipple itself or rub your fingers along the skin. Your fingers should roll over the breast.
- Express one breast for 3–5 minutes until the flow slows then change to the other breast. Then do both breasts again.
- Change hands when the one hand gets tired. You can use either hand for either breast.
- It can take 10–15 minutes or longer to express all of the milk.

STORING EXPRESSED MILK

- Store the breast milk in a clean, sterilised, covered container in a cool place until you are ready to heat and feed it to your baby.
- Fresh breast milk can be stored for up to eight hours at room temperature or up to 24 hours in a refrigerator, so long as the refrigerator is never higher than 5°C.

FEEDING BABY

- Always feed the baby using a clean, sterilised open cup. Avoid using bottles and teats — they are difficult to clean, they may make your baby sick (see Appendix 1).

STEPS FOR HEAT-TREATING BREAST MILK:

Heat-treating expressed breast milk destroys the HIV in breast milk while retaining its nutrients and protective agents. Heat-treating expressed breast milk removes the risk of HIV transmission.



Before heat-treating the milk, gather the following things:

- Clean containers with wide necks and covers, such as cups or jars, to store the milk
- A small cup for feeding the baby
- Soap and clean water to wash and rinse equipment
- A pan to sterilise cups and containers
- A small pan to heat the milk
- Fuel to sterilise cups and containers and to heat the milk
- A large container of cool water (optional — for cooling milk)



Always use washed and sterilised utensils to express, heat-treat, and feed breast milk.

Follow these steps to heat-treat and then store milk:

- Put breast milk in a pan. Heat enough expressed milk for one feed. The amount of milk should be between 50 ml and 150 ml. If you have more milk, you may divide it into two jars, so that it heats and then cools more quickly. The other advantage of smaller jars is that there is less waste — baby is fed the milk in the second jar only if he/she is still hungry. Heated breast milk must be discarded after one hour if not used (unlike unheated breast milk, which lasts eight hours). Once heated, breast milk **CANNOT** be refrigerated for later use.
- Heat milk **to the boiling point**.
- Pour milk into clean, sterilised feeding cup and allow to cool. Cool by placing the cup in a small container of cool water or by letting the milk stand until it cools.
- If the heated milk is not used immediately, store it in a



clean, covered container in a cool place and use it within **one hour**.

- Feed the infant using a cup. Throw away any unused milk.

Source: WHO, UNICEF and USAID. HIV and Infant Feeding Counselling Tools: Reference Guide. (2005): http://www.who.int/child-adolescent-health/New_Publications/NUTRITION/HIV_IF_CT/ISBN_92_4_159301_6.pdf



APPENDIX 3: SAFETY AND FORMULA FEEDING



WATER SAFETY

WATER MUST BE BOILED BEFORE USING IT TO FEED BABIES.

- Boil water until big bubbles rise to the surface — also referred to as a rolling boil — for 1 to 2 seconds before use. This will kill most harmful microorganisms.

HANDLING BOILED WATER TO BE USED FOR RECONSTITUTING INFANT FORMULA:

- Pour the appropriate amount of boiled water into a cleaned and sterilised feeding cup. Water should be used as soon as possible; if left more than 30 minutes it must be re-boiled.
- Some families keep water hot in a thermos flask. This is safe for water if the thermos flask has been properly washed and if the water is still very hot (70°C or higher) when used to reconstitute infant formula. It is not safe to use water stored in a thermos flask for more than a few hours, as the water will have cooled below 70°C (the exact amount of time water can be safely stored in a thermos flask depends on the quality of the thermos, quantity of water in the thermos and the temperature of the air and thermos). If in doubt, it is always safest to boil the water fresh for each feed.
- It is **not** safe to keep warm milk or formula in a thermos flask.

HYGIENIC PREPARATION OF FORMULA FEEDS

WHAT ELSE DO I NEED TO KNOW ABOUT HYGIENE AND FORMULA FEEDING PREPARATION?

Infant formula is NOT sterile. Infant formula can pose a risk to infants unless prepared and handled correctly. The equipment used to feed infants and for preparing feeds must be thoroughly cleaned and sterilised before use.

WHEN AND HOW SHOULD I WASH MY HANDS?

- Always wash hands: after using the toilet, after cleaning the infant's bottom, after disposing of children's stools and after washing nappies/diapers and soiled cloths, after handling foods which may be contaminated (e.g., raw meat and poultry products) and after touching animals.
- Always wash hands: before preparing or serving food, before eating and before feeding children.
- It is important to wash hands thoroughly:
 - Wash with soap or ash and with plenty of clean running or poured water.
 - Wash the front, back, between the fingers and under the nails.

Let hands dry in the air or dry them with a clean cloth.

HOW SHOULD I CLEAN THE UTENSILS USED TO FEED MY BABY?

Keep both the utensils (e.g. cups* and spoons) that you use and the surface on which you prepare feeds as clean as possible. Use a clean table or mat that you can clean each time you use it.

- **Wash** utensils with cold water immediately after use to remove milk before it dries, and then wash with hot soapy water.
- **Rinse** thoroughly in water from a safe source.
- **Sterilise**, by boiling:
 - Fill a large pan with water and completely submerge all washed feeding and preparation equipment, ensuring there are no trapped air bubbles.
 - Cover the pan with a lid and bring to a rolling boil, making sure the pan does not boil dry.
 - Keep the pan covered until the feeding and preparation equipment is needed.
- **Sterilise**, by other methods:
 - If using a commercial home steriliser (e.g. electric or microwave steam steriliser, or chemical steriliser — such as Milton or another bleach solution), follow manufacturer's instructions.
- **Storage:**
 - It is best to remove feeding and preparation equipment from the steriliser or pan just before it is to be used.
 - Hands should be washed thoroughly with soap and water before removing feeding and preparation equipment from a steriliser or pan. The use of sterilised kitchen tongs for handling sterilised feeding and preparation equipment is recommended where possible.
 - If equipment is removed from the steriliser and not used immediately, it should be covered and stored in a clean place.

* Remember it is better to use a cup to feed an infant, rather than a bottle.

MILK AND FOOD STORAGE

WHAT ABOUT STORING MILK?

- Fresh milk can be kept in a clean, covered, container at room temperature for a few hours. Exactly how long depends on the condition of the milk when bought and the room temperature. However, for an infant, milk must be boiled and then used within one hour.
- If there is no refrigerator, the mother must make feeds freshly each time. When a feed has been prepared with formula or dried milk (appropriate only for infants older than six months), it should be used within one hour, like fresh milk.
- If the infant does not finish the feed, the mother should give it to an older child or use it in cooking.
- Some families keep water cool in a pottery jar, which allows evaporation of water from the surface. ***It is not safe to store milk in pottery jars.***
- Never store warm milk (or reconstituted infant formula) in a thermos flask. Bacteria grow when milk is kept warm.
- Breast milk that has not been heated can be stored outside the refrigerator for 8 hours.

What are the guidelines on food storage and hygiene?	
Keep clean	<ul style="list-style-type: none"> • Wash your hands with soap and water (washing hands, especially with soap or a rubbing agent such as ash, helps remove germs and contributes to prevention of disease transmission) before preparing formula or food or before feeding your child and also after going to the toilet. • Wash your child's cup or bowl thoroughly with hot soapy water or boil it. • Keep food preparation surfaces clean using water and soap or detergent to clean them every day.
Use clean water and wash raw materials	<ul style="list-style-type: none"> • Boil water vigorously for 1–2 seconds. (Bringing water to a rolling boil is the most effective way to kill disease-causing germs, even at high altitudes. Let the hot water cool down on its own without adding ice. If the water is clear, and has been boiled, no other treatment is needed.) • Wash fruits and vegetables, especially if eaten raw.
Separate raw and cooked foods	<ul style="list-style-type: none"> • Avoid contact between raw and cooked foods. • Use separate utensils and storage containers for raw foods.
Cook thoroughly	<ul style="list-style-type: none"> • Especially meat, poultry, eggs and seafood. For meat and poultry, make sure juices are clear not pink. • Reheat cooked food thoroughly. Bring soups and stews to boiling point. Stir while re-heating.
Keep formula and food at safe temperatures	<ul style="list-style-type: none"> • Refrigerate prepared formula and all cooked and perishable foods promptly (preferably below 5 °C). • Give unfinished formula to an older child instead of keeping it until the next feed. • Do not leave cooked food at room temperature for more than one hour. • Do not store food too long, even in a refrigerator. • Do not thaw frozen food at room temperature. • Food for infants and young children should ideally be freshly prepared and not stored at all after cooking.

WHAT ARE THE GUIDELINES AROUND FOOD STORAGE?

- Food should be kept tightly covered to stop insects and dirt getting into it.
- Food can be kept longer when it is in a dry form, such as milk powder, sugar, bread and biscuits, than when it is in liquid or semi-liquid form.
- Fresh fruits and vegetables keep for several days if they are covered, especially if they have thick peel, like bananas.
- Do not use food beyond its expiration date.
- Protect kitchen areas and food from insects, pests and other animals.

BOTTLE FEEDING

I AM PLANNING ON BOTTLE FEEDING, HOW CAN I BE SURE I BOTTLE FEED CORRECTLY?

Advise the mother who is determined to bottle feed on the advantages of cup feeding and disadvantages of bottle feeding. Strongly encourage cup feeding. But if the mother insists on bottle feeding, teach her how to do so safely:

- Bottles must be washed, rinsed, sterilised and stored similar to cups (see above).
When washing baby bottles, note that:
 - Bottles and teats also need to be scrubbed inside with a bottle brush and hot soapy water. In addition, teats need to be turned inside out and scrubbed using salt.
 - If you can, use a soft brush to reach all the corners.
- When storing bottles, they may be fully assembled with a cover to prevent the inside of the sterilised bottle and the inside and outside of the teat from becoming contaminated.

WHAT TIPS DO YOU HAVE FOR BOTTLE FEEDING?

- Listen and observe your baby. If you hear a lot of noise while drinking, he or she may be taking in too much air. To help your baby swallow less air, hold him or her at a 45-degree angle. Also take care to tilt the bottle so that the nipple and neck are always filled with formula.
- Never feed your baby while he or she is sleeping or lying down.



APPENDIX 4: PREPARING INFANT FORMULA



When a mother or caregiver makes infant formula, it is very important that the milk and water are mixed in the correct amounts *consistently*. Small mistakes in the feed preparation may not have an immediate effect, but may make an infant ill or malnourished if they are repeated over time.

Each brand of infant formula is prepared differently. This section provides general instructions for preparing formula. If possible, the caregiver should bring the cups and utensils that she expects to use to feed the baby to the counselling session with the healthcare worker. Mark the cup to show how much water is needed. Ask him or her to prepare a feed while you watch and guide the caregiver so she knows what to do when she goes home. Infant formula is not a sterile product; reconstituted infant formula provides ideal conditions for the growth of harmful bacteria. It is best to make infant formula fresh for each feed and to use it immediately. The steps below outline the safest way to prepare individual feeds of infant formula for immediate consumption.

Replacement feeds should be given from an open cup, not a bottle or a cup with a teat.

1. Keep the surface on which you work clean as well; if possible, work on a table mat that you can clean each time. Clean the surface or table mat with warm soapy water and rinse. You may disinfect the surface with bleach if available.
2. Wash hands with soap and clean water, and dry using a clean cloth or a single-use napkin.
3. Ensure all utensils are cleaned, rinsed and sterilised (see Appendix 3).
4. Boil a sufficient volume of water from a safe source. If using an automatic kettle, wait until the kettle switches off; otherwise make sure that the water comes to a rolling boil for 1–2 seconds. Note: bottled water is not sterile and must be boiled before use. Microwaves should never be used in the preparation of infant formula as uneven heating may result in “hot spots” that can scald the infant’s mouth. For more information, see “Water safety” in Appendix 3, “Safety and Formula Feeding”.
5. Pour the appropriate amount of boiled water into a cleaned and sterilised feeding cup or bottle. Water should be used as soon as possible; if left more than 30 minutes it must be re-boiled.
6. Add to the water the exact amount of formula as instructed on the label. Adding more or less powder than instructed could make infants ill.
 - If using feeding cups: mix thoroughly by stirring with a cleaned and sterilised spoon, taking care to avoid scalds.
 - If using bottles: assemble the cleaned and sterilised parts of the bottle according to the manufacturer’s instructions. Shake or swirl gently until the contents are mixed thoroughly, taking care to avoid scalds.
7. Cool reconstituted infant formula to feeding temperature. If the bottle is cooled using cold water and/or ice, ensure that the water and/or ice does not touch the inside of the cup or teat. It is essential that the temperature is checked before feeding to avoid scalding the infant’s mouth.

8. Discard any feed that has not been consumed within one hour.

PREPARING FEEDS IN ADVANCE FOR LATER USE

It is best to make infant formula fresh for each feed and to consume immediately. For practical reasons, however, feeds may need to be prepared in advance. The steps below outline the safest way to prepare and store feeds for later use. If refrigeration is not available, feeds cannot safely be prepared in advance for later use.

- Prepare infant formula as described above. If using feeding cups, a batch of formula should be prepared in a clean, sterile jar that is no larger than one litre, with a lid. The prepared infant formula can be refrigerated and dispensed into cups as needed.
- Place cooled feeds in a refrigerator. The temperature of the refrigerator must be no higher than 5 °C. If the refrigerator temperature is higher than 5 °C, it cannot be used to store reconstituted infant formula.
- Feeds can be stored in the refrigerator for up to 24 hours.

RE-WARMING STORED FEEDS

- There is no health reason to re-warm milk that has been prepared in advance and stored in the refrigerator, but your baby may prefer it.
- Remove stored feed from the refrigerator just before it is needed.
- Re-warm for no more than 15 minutes. If re-warming in hot water, ensure that only boiled water is allowed to touch the inside of the cup (or teat if using a bottle).
- To ensure that the feed heats evenly, periodically swirl the cup or shake the covered jar or container.
- Microwave ovens should never be used to re-warm a feed as uneven heating may result in “hot spots” that can scald the infant’s mouth.
- Check feeding temperature to avoid scalding the infant’s mouth. The contents should be cool, room temperature, or warm, never hot.
- Discard any re-warmed feed that has not been consumed within one hour.

TRANSPORTING FEEDS

- Because of the potential for growth of harmful bacteria during transport, feeds (prepared as described above) should first be cooled to no more than 5°C in a refrigerator and then transported.
- Do not remove feed from the refrigerator until immediately before transporting.
- Transport feed in a cool bag with ice packs.
- Feeds transported in a cool bag should be used within one hour as cool bags do not always keep foods adequately chilled.
- Re-warm at the destination.
- If you reach the destination within one hour, feeds transported in a cool bag can be placed in a refrigerator and held for up to 24 hours from the time of preparation.
- Alternatively, if you are going out for the day, individual portions of infant formula (still in powdered form) can be transported in washed and sterilised containers. At the destination, hot water (no less than 70°C) can be used to prepare the feed.



APPENDIX 5: INTRODUCING COMPLEMENTARY FOODS, INFORMATION FOR CAREGIVERS



- After the first six months breast milk or formula alone is no longer enough for a baby. Your baby now needs solid foods and other fluids too.

IMPORTANT

Before 6 months, all a baby needs is breast milk, or for special reasons, infant formula. This means no water, baby porridge, baby food or any other foods are needed, except for prescribed medicines!

If you have been breastfeeding:

- Are you HIV negative or do not know your HIV status? Continue breastfeeding even after solid foods have been introduced and continue this for up to 2 years. If you are infected with HIV, refer to the pamphlet called "How should I feed my baby if I am HIV positive?"

If you have been formula feeding:

- Formula should be continued until 1 year and followed by the introduction of full cream cow's milk and other dairy products
-

HOW TO START GIVING SOLID FOODS

- Give the breast or some formula first, then offer some food
- Start with a teaspoonful of food
- This is new for your baby so he/she may turn his/her head away
- Do not force the baby to eat, be patient!
- Introduce only one food at a time. Once your baby knows the taste of that food, you may move on to the next food

WHAT TO BEGIN WITH

- All foods must be mashed or pureed for children from 6 months to one year
- Start with soft porridge like maize meal or oats porridge (baby cereals are also fine, but expensive), seasonal vegetables and fruit such as pumpkin, carrots, potato, butternut, banana and grated apple
- Start giving vegetables before fruit because fruit has natural sugars that are sweeter than vegetables. This may cause a baby to refuse vegetables after first having tasted fruit

SOME HANDY TIPS

- Keep foods bland. Do not flavour with sugar, salt or herbs and spices
- Prepare small portions

- Do not expect your baby to finish a bowl of food every time
- From about **8 months** you can begin to give more coarse foods, i.e. bread and meat (cut into cubes or minced). This is important so that your baby gets used to different textures of food and learns to chew
- Fruit juice must be diluted — ¼ cup of juice with ¼ cup of water

FOODS TO AVOID

- Before 1 year:
 - Do not give cow’s milk (full cream, low-fat, 2% or fat-free)
 - Do not give rooibos tea
 - It is better to introduce fish, cow’s milk, peanut butter and egg white after 1 year because these foods may cause allergies if given too early
- Sweets, fizzy drinks, biscuits, crisps and chocolates should not be given as a reward
- Coffee and tea must not be given
- Do not give fruit juice as it is too acidic and can harm baby’s milk teeth

MAKING BABY FOOD IS CHEAP AND EASY!

IMPORTANT

Baby food bought at the shop is expensive and not always better than making your own

- Choose any vegetable or fruit
- Wash, peel if needed, remove pips, and cut into small pieces
- Place into a pot and cover with water
- Cook until soft
- Use a fork to mash or push it through a sieve to make a puree. You may use an electric blender if you have one
- If you have a freezer, you may freeze the food for use on another day by placing it in an ice tray, covering it with plastic wrap and putting it in the freezer or freezer compartment of your fridge
- You can later defrost the amount you need and heat it before feeding it to your baby
- Make eating time fun and interesting; smile and praise your baby during feeding so that you both enjoy it!

For more information:

ECHO (Enhancing Children’s HIV Outcomes)
 Hillbrow Health Precinct
 Hugh Solomon Building
 Esselen Street, cnr Klein Street
 (opposite Esselen Street Clinic)
 Hillbrow, 2001
 T: +27 11 358 5300

This Appendix is based on a pamphlet entitled “Introducing Solid Foods To My Baby At 6 Months” ISBN 978-0-9814369-6-8, licensed under the Creative Commons Attribution-Noncommercial-No Derivative Works 2.5 South Africa License.



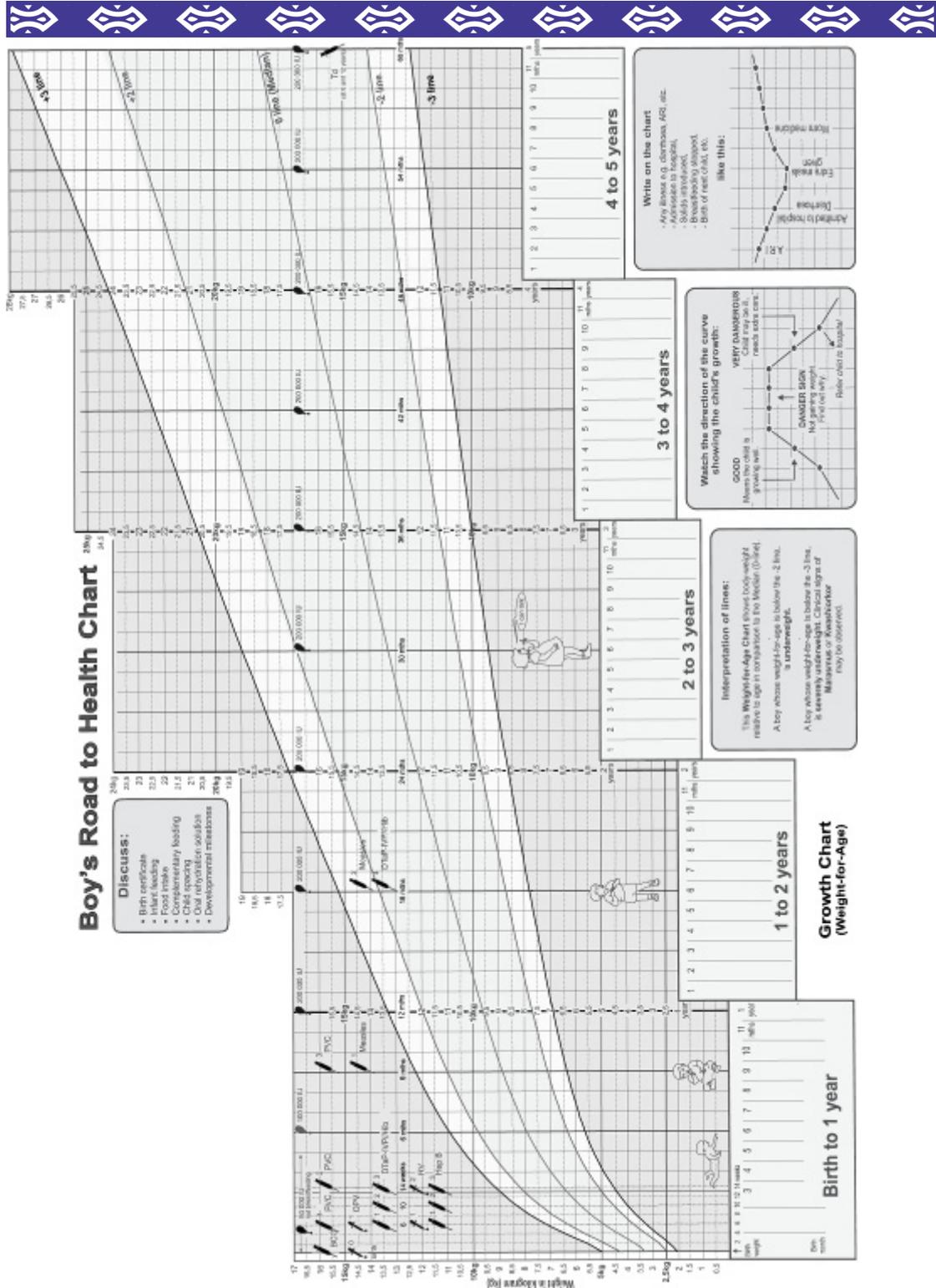
APPENDIX 6: LISTENING AND LEARNING SKILLS CHECKLIST



As you observe your colleagues role play, indicate the listening and learning skills they use by placing a check in the appropriate box.		
SKILLS AND TECHNIQUE CHECKLIST		
Skill	Specific Strategies, Statements, Behaviours	(✓)
Skill 1: Use helpful non-verbal communication	• Shows a relaxed and natural attitude	<input type="checkbox"/>
	• Has an open posture	<input type="checkbox"/>
	• Leans forward when talking	<input type="checkbox"/>
	• Makes eye contact	<input type="checkbox"/>
	• Sits squarely facing client	<input type="checkbox"/>
	• Other (Specify)	<input type="checkbox"/>
Skill 2: Ask open-ended questions	• Uses open-ended questions to get more information	<input type="checkbox"/>
	• Asks questions that show interest, care and concern	<input type="checkbox"/>
	• Other (Specify)	<input type="checkbox"/>
Skill 3: Use responses and gestures that show interest	• Nods, smiles; uses encouraging responses (such as “yes,” “okay,” “Mmm,” or “ho-o”)	<input type="checkbox"/>
	• Clarifies and explains statements effectively	<input type="checkbox"/>
	• Takes time to summarise information the client shares	<input type="checkbox"/>
	• Comments on client’s challenges while also discussing client’s strengths	<input type="checkbox"/>
	• Other (Specify)	<input type="checkbox"/>
Skill 4: Reflect back what the mother says	• Reflects emotional responses back to the client using different words	<input type="checkbox"/>
	• Other (Specify)	<input type="checkbox"/>
Skill 5: Empathize — show that you understand how she feels	• Demonstrates empathy: shows an understanding of how the client feels	<input type="checkbox"/>
	• Avoids sympathy. Sympathy is when the healthcare worker moves the focus to her self (“I know how you feel, my sister has HIV.”) whereas empathy focuses on the client (“You’re really worried about what’s going to happen now that you’ve tested HIV-positive.”)	<input type="checkbox"/>
	• Other (Specify)	<input type="checkbox"/>
Skill 6: Avoid words that sound judging	• Avoids judging words such as <i>good, bad, correct, proper, right, wrong, adequate, inadequate, satisfied, sufficient, fail, failure, succeed, success</i> , etc	<input type="checkbox"/>
	• Uses words that build confidence and gives support (e.g., recognises and praises what a mother is doing right)	<input type="checkbox"/>
	• Other (Specify):	<input type="checkbox"/>

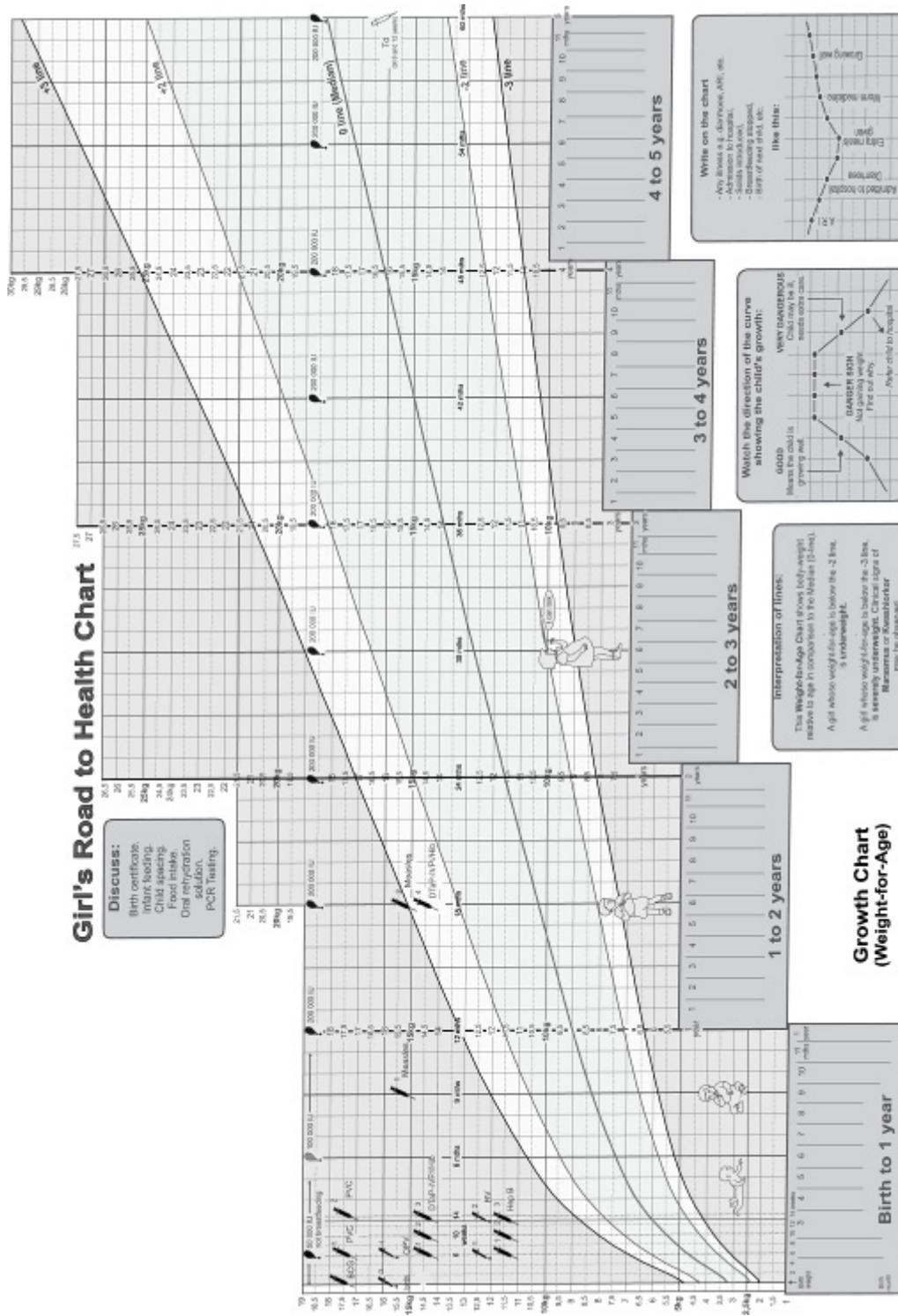


APPENDIX 7: ROAD TO HEALTH CARD (BOYS WEIGHT-FOR-AGE)





APPENDIX 8: ROAD TO HEALTH CARD (GIRLS WEIGHT-FOR-AGE)





RESOURCES FOR FURTHER INFORMATION



Department of Health, Republic of South Africa, CDC. *HIV and Infant Feeding Counselling Cards*.

National Department of Health, South Africa, South African National AIDS Council, 2010. *Clinical Guidelines: PMTCT (Prevention of other-to-Child Transmission)*.

Department of Health, Republic of South Africa. *Infant Feeding in the context of HIV Workshop Meeting of Academics, Researchers & Scientists on Infant Feeding, 18 November 2009, Durban*.

Department of Health, South Africa. 2007. *Infant and Young Child Feeding Policy*.

WHO. (2009). *HIV and infant feeding: Revised principles and recommendations, rapid advice*.

WHO, CDC (2008) *Prevention of Mother-to-Child Transmission, Generic Training Package*.

WHO & FAO. (2007). *Safe Preparation, Storage and Handling of Powdered Infant Formula: Guidelines*, from http://www.who.int/foodsafety/publications/micro/pif_guidelines.pdf

WHO & FAO. (2007). *How to Prepare Formula for Cup-Feeding at Home*, from http://www.who.int/entity/foodsafety/publications/micro/PIF_Cup_en.pdf

WHO & FAO. (2007). *How to Prepare Formula for Bottle-Feeding at Home*, from http://www.fao.org/ag/agn/agns/files/PIF_Bottle_en.pdf

WHO. (2006). *Infant and Young child Feeding Counselling: An Integrated Course*. http://www.who.int/nutrition/publications/IYCF_Trainers_Guide.pdf

WHO, UNICEF & USAID. *HIV and Infant Feeding Counselling Tools: Reference Guide*. (2005). http://www.who.int/child-adolescent-health/New_Publications/NUTRITION/HIV_IF_CT/ISBN_92_4_159301_6.pdf

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