The United Republic of Tanzania

Ministry of Health and Social Welfare

Infant and Young Child Feeding



National Guidelines

July 2013



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Tanzania Food and Nutrition Centre

World Health Organization

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National Guidelines on Infant and Young Child feeding

Tanzania Food and Nutrition Centre
22 Ocean Road
P.O. Box 977
Dar-es-Salaam
Tel: (255) 22 211 81 37/9
Fax: (255) 22 211 67 13
Email: info@lishe.org
Website: www.lishe.org

ISBN 978-9976-914-66-7

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LIST OF ABBREVIATIONS & ACRONYMS

AED	-	Academy for Educational Development
AFASS	-	Acceptable, Feasible, Affordable, Sustainable and Safe
AIDS	-	Acquired Immune-Deficiency Syndrome
ANC	-	Antenatal Care
ARI	-	Acute Respiratory Infections
ARV	-	Antiretroviral drug for HIV prophylaxis or treatment
BCC	-	Behaviour Change Communication
BF	-	Breastfeeding
BFCI	-	Baby Friendly Community Initiative
BFHI	-	Baby Friendly Hospital Initiative
BMI	-	Body Mass Index
CBNR	-	Community Based Nutrition Rehabilitation
CEDAW	-	Convention on the Elimination of all Forms of Discrimination to Women
CHMT	-	Council Health Management Team
CORPS	-	Community Owned Resource Persons
COUNSENUTH	-	Centre for Counseling Nutrition and Health Care
CRC	-	Convention of the Rights of the Child
DCCO	-	District Cold Chain Officer
DHO	-	District Health Officer
DMO	-	District Medical Officer
DNO	-	District Nursing Officer
EBF	-	Exclusive Breastfeeding
GMP	-	Growth Monitoring and Promotion
HIV	-	Human Immunodeficiency Virus
IBFAN	-	International Baby Food Action Network
IDD	-	Iodine Deficiency Disorder
IEC	-	Information, Education and Communication
IMCI	-	Integrated Management of Childhood Illness
IU	-	International Unit
IYCN	-	Infant and Young Child Nutrition
KJ	-	Kilojoule
LBW	-	Low Birth Weight
MOHSW	-	Ministry of Health and Social Welfare
MTCT	-	Mother-To-Child-Transmission
NAC	-	National Aids Council
NACP	-	National Aids Control Programme
ORS	-	Oral Dehydration Solution
PMTCT	-	Prevention of Mother to Child Transmission
RCHCo	-	Reproductive and Child Health Coordinator
RCHMT	-	Regional Health management Team
RCHS	-	Reproductive and Child Health Services
RHO	-	Regional Health Officer

RMO	-	Regional Medical Officer
SSS	-	Salt Sugar Solution
STI	-	Sexually Transmitted Infections
TB	-	Tuberculosis
TDHS	-	Tanzania Demographic and Health Survey
TFDA	-	Tanzania Food and Drug Authority
TFNC	-	Tanzania Food and Nutrition Centre
UNAIDS	-	Joint United Nations Programme on HIV/AIDS
UNICEF	-	United National Children Funds
URC/QAP	-	University Research Centre / Quality Assurance Project
URT	-	United Republic of Tanzania
USAID	-	United States Agency for International Development
VAD	-	Vitamin A Deficiency
VCT	-	Voluntary Counseling and Testing
WDC	-	Ward Development Committee
WHA	-	World Health Assembly
WHO	-	World Health Organization

GLOSSARY OF TERMS AND CONCEPTS

ARTIFICIAL FEEDING: Feeding an infant with breast milk substitutes.

BREAST ABSCESS: Collection of pus in the breast. It results in painful swelling of the breast and usually requires a surgical incision and drainage.

BREAST MILK SUBSTITUTE: Any food marketed or otherwise represented as a partial or total replacement for breast milk, whether or not suitable for that purpose. In practical terms this includes milk or milk powders marketed for children less than 2 years and complementary foods, juice and teas marketed for children less than 6 months.

CARESS: Letters stand for Management of Mastitis as follows: C= Compress (Hot and Cold), A= Antibiotics and pain killers (if necessary), R= Rest, E= Effective, gentle and frequent removal of breast milk, S= Stress identification and management S= Support and follow up

CESSATION OF BREASTFEEDING: Stopping breastfeeding

COMMERCIAL INFANT FORMULA: A breast milk substitute formulated industrially in accordance to Tanzania Standard 187 "Infant Formula Specification" intended to satisfy the nutritional requirements of an infant up to six months of age.

COMPLEMENTARY FEEDING: The process of feeding an infant, who is breastfed or fed on infant formula, with other foods and liquids, after completion of six months, when breast milk or infant formula is no longer sufficient to meet the nutritional requirements.

COMPLEMENTARY FOOD: Any food, whether manufactured or locally prepared suitable as a complement to breast milk or breast milk substitutes.

CUP FEEDING: Feeding a child from an open cup irrespective of its content

POSTPARTUM PERIOD: The first 6 weeks after delivery.

EXCLUSIVE BREASTFEEDING: Feeding an infant with breast milk including expressed breast milk only, without any other food or drink, not even water. However, vitamin and mineral supplements or medicines can be given when medically prescribed.

HEAT-TREATED EXPRESSED BREAST MILK: Expressed breast milk that is brought to a temperature of 60ºC or pasteurized to feed an infant.

HIV-NEGATIVE: Tested for HIV infection and found without HIV virus or its antibodies

HEALTH WORKER: Any person working in the health care system, whether professional or non-professional, including voluntary and unpaid workers, in public or private practice, is a health worker. Under this definition, ward assistants, sweepers, nurses, midwives, social workers, nutritionist, dieticians, counselors, in-hospital pharmacists, obstetricians, administrators, clerks, etc. are all health workers.

HIV-POSITIVE: Tested for HIV infection and found with the HIV virus or its antibodies.

HIV COUNSELLING: Confidential dialogue between a person and a care provider aimed at enabling the person to cope with stress and make personal decision related to HIV and AIDS. The counseling process includes an evaluation of personal risk of transmission and facilitation of preventive behaviour.

HOME MODIFIED ANIMAL MILK (HOME PREPARED FORMULA): Infant formula prepared at home

from fresh or processed full cream animal milk, suitably diluted with water and with the addition of appropriate amounts of sugar. Infants fed on such formula should be given micronutrient supplements.

INFANT: A child from birth up to 12 months of age.

INFANT FEEDING: Feeding a child with adequate, safe nutritious food that meets the nutritional requirements for optimal growth and development

LOW BIRTH WEIGHT (LBW) INFANTS: An infant with birth weight of less than 2,500 grams. This includes babies who are born before term, (premature) and/or babies who are small for gestational age.

MASTITIS: Inflammation of the breast tissues surrounding the milk ducts. Mastitis frequently affects only one breast and is characterized by hard swelling, severe pain, and fever and localized redness around affected breast.

MIXED FEEDING: Feeding a baby with breast milk and/or other foods and fluids including infant formula and water.

MOTHER-TO-CHILD TRANSMISSION (MTCT): Transmission of HIV to a child from an HIV-infected woman during pregnancy, delivery or through breastfeeding. The term "Vertical Transmission" is commonly used interchangeably with MTCT.

MILK OVERSUPPLY Breast milk comes too fast and in large quantities that makes it difficult for the baby to suckle effectively.

REPLACEMENT FEEDING: The process of feeding a child, who is not receiving any breast milk, with a diet that provides all the nutrients the child needs until the child is fully fed on family food.

RELACTATION: Putting a child to the breast after stopping breastfeeding for any reason.

TRANSITION PERIOD: This is a period between cessation of breastfeeding and commencement of replacement feeding.

UNKNOWN HIV STATUS: An individual whose sero-status of HIV is not known

VOLUNTARY COUNSELLING AND TESTING: HIV testing that is voluntary, based on fully informed consent, and is accompanied by pre- and post-test counseling.

YOUNG CHILD: In this context a young child means a child aged between 0 to 59 months of age

FOREWORD

The first 1000 days of life starting from the start of pregnancy to the child's second birthday are important for optimal growth, health and development. Therefore, thus is a crucial period for effective infant and young child feeding interventions. Poor feeding practices in infancy and early childhood, resulting in malnutrition, contribute significantly to morbidity delayed mental and motor development, poor school performance and reduced productivity in later life.

Tanzania is working hard to improve the survival, growth, development and welfare of children by taking responsible measures and implementing intervention strategies which seek to improve their health and wellbeing. There has been notable progress in child survival. Child health and wellbeing is a high priority on the development agenda as reflected in both national and international strategies such as the National Growth Strategy of Poverty Alleviation (MKUKUTA), Millennium Development Goals, Nutrition Policy and National Nutrition Strategy, The Convention on the Rights of a Child and The Law of the Child Act.

The development of the National Guidelines on Infant and Young Child Feeding (IYCF) is based on the international instruments, global recommendations and guidelines, and national policies and strategies related to IYCF. The guideline, which summarizes the recommendations for feeding of infants and young children at different ages, is especially meant for service providers in maternal and child health, including health service providers and their supervisor, working in Government and non-Governmental organizations and engaged directly or indirectly in care of infant and young children in health facility and the communities.

The main goal of the National Guideline is to improve the nutritional status, growth and development, health and survival of infants and young children through optimal feeding practices. The guidelines are intended to be used as an operational tool for the Health Care Providers at different levels.



Regina L. Kikuli
Ag. Permanent Secretary

ACKNOWLEDGEMENT

The Ministry of Health and Social Welfare (MoHSW) wishes to acknowledge with sincere thanks to all those who contributed to the production of the National Guidelines on Infant and Young Child Feeding. This guideline would not have been developed without the support and contributions of a number of individuals and organizations.

It is not possible to mention all who contributed to the development of this document however, the MoHSW would like first and foremost to acknowledge WHO and UNICEF for the financial support extended to Tanzania Food and Nutrition Centre (TFNC) without which the development process of this document would not be possible.

The MoHSW also extend acknowledgement to the Former Managing Director of TFNC Dr. G. D. Ndossi and the experts who participated the whole process of development and the finalization of the guidelines.

The MoHSW is grateful for the commitment and hard work of technical team namely Dr. Margaret T. Nyambo (Ilala Municipal) Ms. Maria Msangi and Ms. Neema Joshua (TFNC), Monica Ngonyani (URC/QAP), Ms. Mary Materu (COUNSENUTH) and Dr. Mary Azayo (MoHSW).

Others who participated in the development of this guideline include Ms. F. Magambo, Ms. M. Kibona, Ms. Teddy Mamboleo, Hamida Mbilikila, W. Mgeni, Ms. S. Shao and F. Lwoga, (TFNC), and Grace Denis and Rachel Kaposwe (MoHSW). Finally but not least I would like to thank Dr. Binagwa Fulgence who did the editorial work, design and layout of this document.

Dr. Donan W. Mmbando
Ag. Chief Medical Officer

CHAPTER 1: BACKGROUND

1.1 Problem statement and justification

The period from the birth of a child to two years of age is critical for growth, health and development. The feeding of infant and young children during this period is particularly crucial in determining their growth, health, survival and development. Poor feeding practices coupled with high rates of infection in infancy and early childhood that result in malnutrition contribute to significant morbidity, delayed mental and motor development, poor school performance and reduced productivity in later life.

In Tanzania malnutrition, particularly undernutrition which is reflected by stunting, underweight and wasting, is present. Data from TDHS (2010) show that 42 % of children aged less than 5 years are stunted, 5 % are wasted and 16 % are underweight. Maternal underweight and poor weight gain during pregnancy are often reflected by the proportion of children born with low birth weight (below 2.5 kg) which is 7 % in Tanzania (TDHS 2010). Overall, 11 % of Tanzanian women are considered thin for their height (Body Mass Index (BMI) less than 18.5 kg/m^2), while 1 % are extremely thin (BMI less than 16 kg/m^2) (TDHS 2010). Recent scientific evidence reveals that malnutrition is responsible, directly or indirectly, for 35 % of all deaths among children under five years. One in five child deaths could be prevented through universal coverage of breastfeeding and complementary feeding.

1.2 Situation of infant feeding and related services

According to TDHS 2010, breastfeeding is almost universal in Tanzania, with 97 % of children breastfed at some point in their lives. However, other aspects of infant and young child feeding are far from optimal, and suggest that many mothers and caregivers in Tanzania are not given adequate advice and support on how to feed their children.

Only 49 % of children are breastfed within the first hour of birth and this percentage has reduced by 11 percentage points since 2004/5. Early initiation of breastfeeding is more common in urban areas (62 %) than rural areas (45 %). The use of pre-lacteal feeds in the rural areas is 31 % of as compared to 24 % in urban areas.
Only 50 % of infants aged less than six months are exclusively breastfed. The percentage of exclusively breastfed infants falls rapidly with age: 81 % for infants aged 0-1 months; 51 % for infants aged 2-3 months; and only 23 % for infants aged 4-5 months. The median duration of exclusive breastfeeding is 2.4 months.

The early introduction of complementary foods before the recommended 6 months is widespread in Tanzania. At the age of less than 2 months 11 % of infants are fed complementary foods and this rises to 33 % at 2-3 months and 64 % at 4-5 months. The data also shows that about 7 % of infants do not receive complementary foods at 6-8 months of age. About 5 % of infants are fed from bottles with nipples. Further, the amount of food fed per feed is inadequate, the frequencies are low, the diversity of the diet is poor and there is low utilization of food in the body due to infections and infestations from contaminated foods. Only 34 % of children aged 6-23 months are given adequate meals each day, and only 56 % are given a diet that has adequate diversity. Overall, only 21 % of children aged 6-23 months

receive a "minimum acceptable diet", defined as containing breast milk, milk or milk products, adequate number of meals per day and adequate diversity.

Inadequate hygiene practices, poor sanitation and poor access to safe or clean water further exacerbate the quality of complementary foods.

In emergency and disaster situations infants and young child and maternal nutrition is usually at stake because mothers and children are separated. Inadequate supply of nutritious food to pregnant and breastfeeding mothers coupled with the psychological stress of the situation and poor nutritional status of mothers lead to inability to successfully feed their children.

The presence of HIV in the society poses a challenge in promotion of breastfeeding among unaffected families. National AIDS Control Program (NACP) 2008 data indicates that about 6.9 % of pregnant mothers attending antenatal clinics are infected by HIV. The risk of mother to child transmission of HIV in the absence of any intervention stands at 40 % and through breastfeeding is 10-15 %, however, when preventative interventions are taken including appropriate infant feeding practices and ARV use, HIV transmission to the child is reduced to less than 5 %.

Tanzania like many other developing countries is undergoing rapid social and economic and political changes, which intensify the difficulties that families face in providing appropriate feeding and care for their children. Expanding urbanization and globalization has result in an increased number of families that depend on informal or uncertain employment and incomes with few or no maternity benefits, while increased access to the media can facilitate very fast transmission of knowledge and practices which affect infant and young child feeding.

Meanwhile, community support structures are being eroded and resources devoted to supporting health, nutrition related services are minimal. Accurate information on optimal infant and young child feeding practices is inadequate, particularly qualitative information on the factors underlying the poor infant feeding practices. All these have a negative impact on infant and young child nutrition. (URT/MOH 2004).

1.3 Global and national instruments supporting IYCN

A number of International Conventions have been ratified in Tanzania including the 1990 Convention of the Rights of the Child (CRC), which stipulates the right of the child to adequate nutrition and access to safe and nutritious food, and the Convention on the Elimination of all Forms of Discrimination to Women (CEDAW), which stipulates that women have the right to full information to decide on how to feed their children and to appropriate conditions that support their decision. In addition, Tanzania enacted the Law of the Child Act in 2009.

The International Code of Marketing of Breast milk Substitutes of 1981, adopted by the 34th World Health Assembly (WHA) and Subsequent Relevant WHA Resolutions related to Infant Nutrition, including WHA 54.2 of 2001 which recommends exclusive breastfeeding for 6 months, are key documents. The government developed the National Regulations for Marketing of Breast-milk Substitutes and designated Products in 1994. Currently the national regulation has been revised as the "Tanzania Food, Drugs and Cosmetics (Marketing of Foods and Designated Products for Infant and Young Children) Regulation" to accommodate the current WHO/UNICEF recommendations as minimum requirement to implement the International code and WHA subsequent relevant Resolutions in promotion of optimal nutrition. The Regulation states that infants should be exclusively breastfed for the first six months of life, that complementary feeding should begin at six months of age, and that breastfeeding should continue until the child is at least two years.

The Innocenti Declaration on the protection, promotion and support of breastfeeding from 1990 set the four operational goals which were adopted by Baby Friendly Hospital Initiative of 1991 one of which

entails implementation of The Ten Steps to Successful Breastfeeding in health facilities. In May 2012, the World Health Assembly endorsed a resolution (WHA 65.6) on Comprehensive Implementation Plan on improving maternal, infant and young child nutrition including six global targets concerning improvement by 2025 in stunting, anaemia, low birthweight, overweight, exclusive breast feeding, and wasting. It calls for member states to develop policies and guidelines in line with the Essential Nutrition actions framework" in this regard, the Infant and Young Child feeding guidelines will guide the implementation of the comprehensive implementation plan

The call to nations by the WHA 55.25, 2002 that all Member States implement the WHO and UNICEF Global Strategy on Infant and Young Child Feeding (IYCF), to protect child nutrition irrespective of HIV prevalence, is a manifestation of the realized importance of breastfeeding and optimal infant and young child feeding practices to child survival and development. Tanzania adapted the Global strategy on IYCF and developed the National Strategy on Infant and Young Child Nutrition (IYCN) in 2004.

Despite the fact that Tanzania has not ratified the ILO Convention NO 183 of 2000 on Maternity Protection rights at work place there is a notable progress in addressing the maternity protection and breastfeeding at the work place. The Employment and Labour Relation Act No. 6 of 2004 has provisions to address core labour rights, to establish basic employment standards and framework for collective bargaining.

1.4 Development of National Guidelines on IYCF

The National Guidelines on IYCF are based on the international instruments, national policies, strategies and related guidelines on IYCF. The guideline summarizes the recommendations for the feeding of infants and young children at different ages.

The Guidelines apply to:

- Health care providers including supervisors, managers and other service providers engaged directly or indirectly in maternal and child health in health facilities and communities.
- Institutions such as health facilities, professionals associations, governmental and non-governmental organizations, and private sectors engaged directly or indirectly in care of infants and young children.

1.5 Overall goal of the National IYCF guidelines

The goal of the Guidelines is to improve the nutritional status, growth and development, health and survival of infants and young children through optimal infant and young child feeding practices.

1.6 Specific objectives of the National IYCF guidelines

- To provide guidance on the promotion, protection and support of exclusive breastfeeding for the first six months followed by timely, nutritionally adequate and safe complementary feeding and continued breastfeeding for two years or more.
- To promote and support delivery of quality IYCF and maternal nutrition services at all levels.
- To provide guidance on infant and young child nutrition in exceptionally difficult situations such as emergencies or disasters which are prone to high incidence of malnutrition, low birth weight or HIV and on the related support required by mothers, families and other caregivers.
- To provide appropriate, accurate and consistent information on IYCF to health care providers.
- To harmonize delivery of IYCF and maternal nutrition services among different stake holders.
- To provide guidance on monitoring and evaluation of IYCF services.

CHAPTER 2: BREASTFEEDING

2.1 Introduction

Breastfeeding is a fundamental way of providing food to infants and young children. Breast milk provides ideal nutrition to meet the infant's needs for growth and development for the first six months. Breastfeeding is advantageous for many reasons. It costs less than artificial feeding; helps a mother and baby to bond that develops helps a baby's development; delays a new pregnancy; helps the uterus to return to its previous size which in turn helps to reduce bleeding and may help to prevent anaemia. The nutrients in breast milk, including protein, fat and calcium, are more easily digested by the baby than animal milk. Breast milk is readily available needing no preparation, protects the baby against many infections, reduces risk of allergies and is efficiently used by the baby's body. Breastfeeding also reduces the risk of ovarian cancer, and possibly breast cancer in the mother. It provides warmth, closeness and contact, which helps physical and emotional development of the child. Breastfeeding is environment friendly, economic, saves time and reduces mothers' workload. Furthermore, mothers who breastfeed are less likely to abandon or abuse their babies.

2.2 Exclusive breastfeeding

Exclusive breastfeeding means giving the child breast milk only and no other food or fluids, not even water during the first six months of life. Breast milk provides all the nutrients and fluids that the baby needs for growth and development in the first six months. Babies who are exclusively breastfed are less likely to get diarrhoea and other illnesses because breast milk is clean and protects infants against infections. Exclusive breastfeeding prolongs the duration of lactational amenorrhea and enhances infant motor development.

To encourage and support mothers to exclusively breastfeed their babies for the first six months health workers should promote:

- *Initiation of breastfeeding within the first hour of birth*
- *Feeding of colostrum to newborns*
- *Skin to skin contact of the mother and the newborn baby*
- *Proper positioning and attachment*
- *Expression of breast milk*
- *Breastfeeding on demand day and night*
- *Provision of accurate and consistent information on optimal breastfeeding*

2.3 Initiation of breastfeeding within the first hour of birth

Early initiation of breastfeeding is extremely important for establishing successful breastfeeding practices as well as providing colostrum, the mother's first milk to the baby. Healthy newborns tend to be awake and alert, with inborn rooting and sucking reflexes to help them find the breast and nipple, latch on and start the first feed. Most newborns are ready to find the nipple and latch onto the breast within the first hour of birth, which indirectly reduces the risk of postpartum haemorrhage. This also helps in the early stimulation of breast milk production and promotes better milk flow.

Health care providers should:

- *Support mothers to position and attach babies appropriately to initiate breastfeeding within the first hour of birth.*
- *Support mothers who had caesarian section to initiate breastfeeding within six hours if they had general anesthesia. If mother did not have general anesthesia, she can be supported to initiate breastfeeding relatively earlier.*
- *Discourage mothers to give their babies prelacteal feeds such as water, glucose, water, tea, or any other liquids.*
- *Counsel or educate care givers on dangers of prelacteal feeds*

2.4 Skin to skin contact

This is an early contact between mother and baby, which helps a mother to bond with her baby and to develop a close, loving relationship. A mother holds her baby immediately after delivery, both naked, so that they have skin-to-skin contact. A mother should hold her baby like this as much as possible in the first two hours after delivery. She should let him/her suckle when he/she shows that he/she is ready. Early contact also makes it more likely that a mother will start to breastfeed and breastfeed for longer than compared with mothers who were separated from their babies. It fosters bonding, reduces maternal bleeding and stabilizes baby's temperature, respiratory rate and blood sugar level.

Health care providers should:

- *Help mothers to establish skin to skin contact with the baby immediately after birth.*
- *Wipe the baby from head to toe with a dry cloth and place the baby skin to skin against the mother and cover both of them together.*

2.5 Positioning and attachment

A health care provider can help the mother to position and attach the baby to the breast appropriately. A pillow or folded blanket under the mother's head can be helpful. Alternatively, the mother can roll to one side and tuck the baby next to her to make sure that the baby has taken much of the areola and the underlying tissues into his mouth. The baby should be suckling from the breast and not just the nipple. Effective baby's attachment to the breast can be noted by observing the position of the baby's tongue which should be forward over lower gums and beneath the lactiferous sinuses. His tongue should be cupped round the 'teat' of breast tissue. This allows the baby takes to suckle in the right way.

Health care providers should:

- *Encourage the mother to hold the baby close to her, facing the breast, with the baby's body in a straight line with the head. The baby's whole body should be supported by the mother's arm or her lap or with cushions or clothes.*
- *Explain and demonstrate how to help the baby to attach; touch the baby's lips with the nipple, wait until the mouth is wide open, move the baby quickly onto the breast, aiming his lower lip well below the nipple.* *(See appendix I and IV)*

Health care providers should;

- *Educate mothers on the value of colostrum to ensure that colostrum is fed to the child and is not discarded.*

2.6 Colostrum to newborns

Colostrum is the first yellowish thick milk that a mother produces in the first few days after delivery. Colostrum is ready in the breasts when a baby is born. It contains all the nutrients and fluidsl that babies need before the mature milk comes in. It contains more antibodies and other anti-infective proteins than mature milk which provide the first 'immunization' against infections that are a danger to newborn babies. Colostrum also contains growth factors which help a baby's immature intestine to develop after birth. This helps to prevent the baby from developing allergies and intolerance to foods. Colostrum is richer than mature milk in some vitamins - especially vitamin A which helps to reduce the severity of any infections the baby might have. Colostrum has a mild purgative effect, which helps to clear the baby's gut of meconium, the first rather dark greenish stool. This clears bilirubin from the gut and helps to prevent jaundice. For all these reasons, it is very important for babies to receive colostrum as their first feeds.

2.7 Expressing breast milk

Expressing breast milk is useful and important to enable a mother to initiate or to continue breastfeeding if the infant has a low birth weight or is too sick to suckle, if the mother has engorged breasts or if the mother has to leave the baby for a while. Breast milk can be stored for about 6-8 hours at room temperature, 24 hours in a refrigerator and 72 hours in a deep freezer.

Steps of expressing breast milk by hand

Mothers should:

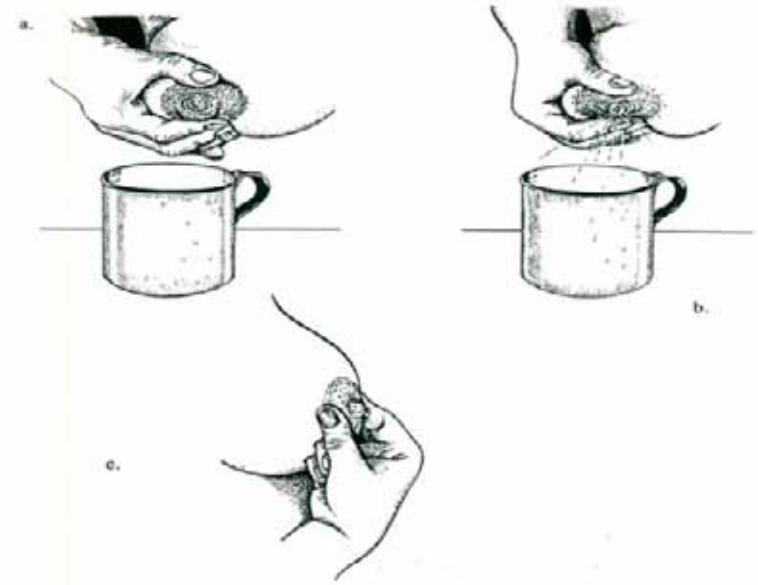
- Wash her hands thoroughly with running water.
- Sit or stand comfortably, and hold the container near her breast.
- Put the thumb on her breast ABOVE the nipple and areola, and her first finger on the breast BELOW the nipple and areola, opposite the thumb. She supports the breast with her other fingers.
- Press her thumb and first finger slightly inwards towards the chest wall. She should avoid pressing too far or she may block the milk ducts.
- Press her breast behind the nipple and areola between her fingers and thumb. She must press on the lactiferous sinuses beneath the areola - sometimes in a lactating breast it is possible to feel the sinuses which are like pods, or peanuts. If she can feel them, she can press on them.
- Press and release, press and release. This should not hurt - if it hurts, the technique is wrong.

Initially no milk may come out, but after pressing a few times, milk starts to drip out. It may flow in streams if the oxytocin reflex is active.

- Press the areola in the same way from the SIDES, to make sure that milk is expressed from all segments of the breast.
- Avoid rubbing or sliding fingers along the skin. The movement of the fingers should be more like rolling.
- Avoid squeezing the nipple itself.

See Figure 1 on how to express breast milk manually and appendix II for details.

Figure 1. Expressing breast milk manually



Health care providers should;

- *Show all postnatal mothers how to express breast milk manually, so that they know what to do if the need arises. (See appendix II)*
- *Explain how to store the expressed breast milk safely.*

Expression of breast milk by hand pumps

Breast milk can also be expressed by hand pumps designed for the purpose. Hand pumps which are properly designed are expensive and hence limit use by the majority of mothers who cannot afford to buy them. With hand pumps, safety and hygienic practices need to be observed even more.

Furthermore, given that there are different makes mothers need to read carefully the directions for the specific model. For the majority of mothers, expression of breast milk manually remains the ideal option.

Health care providers should;

- *Support postnatal mothers who choose to express breast milk by hand pump, stressing on observing safe and hygienic practices.*

2.7 Breastfeeding on demand

Breastfeeding on demand day and night ensures adequate production of milk. Newborn babies should be breastfed at least 10 to 12 times in 24 hours and the length of feed may vary from feed to feed and baby to baby. Let a baby suckle as long as he/she wants, provided he/she is well attached. There is no need to restrict the length of a breastfeed. The mother should learn to respond to the signs that her baby gives, for example rooting, finger sucking, and putting the tongue out which show that the baby is ready for a feed. Demand feeding also reduces the risk of breast problems.

The composition of breast milk varies according to the age of the baby, and from the beginning to the end of a feed. It also varies between feeds, and may be different at different times of the day. Colostrum

which is the first breast milk that women produce in the first few days after delivery changes into mature milk. There is a larger amount of milk, and the breasts feel full, hard and heavy. Foremilk is the milk that is produced early in a feed while hind milk is the whiter milk that is produced later in a feed.

Hind milk contains more fat than foremilk. The extra fat in hind milk makes it looks whiter than foremilk. This fat provides much of the energy of a breastfeed. This is why it is important not to take a baby off the breast too quickly. The baby should be allowed to continue until he has had what he wants, so that he gets plenty of fat-rich hind milk. Foremilk is produced in larger amounts, and it provides plenty of protein, lactose, and other nutrients. Because a baby gets large amounts of foremilk, he gets all the fluid that he needs. Babies do not need other drinks or water before they are 6 months old, even in a hot climate or if the baby has diarrhoea. It is important for a baby to have both foremilk and hind milk to get a complete meal and all the fluid that he/she needs.

Health care providers should;

- *Encourage mothers to breastfeed on demand day and night.*
- *Encourage mothers to stay with their babies most of the time in the first few months.*
- *Encourage a mother to breastfeed her babies until her breast is empty before shifting to another breast.*
- *Provide all mothers with accurate and consistent information on the importance and advantages of optimal breastfeeding.*
- *Inform all parents/care givers and the general public on the advantages of optimal breastfeeding.*

KEY MESSAGES ON BREASTFEEDING

a) Breast milk provides ideal nutrition to meet the infant's needs for growth and development;

b) Breastfeeding initiation is recommended immediately after birth, within first hour;

c) Give colostrum to newborn babies;

d) Breastfeed on demand day and night; and

e) Breastfeed exclusively for the first six months of life.

CHAPTER 3: COMPLEMENTARY FEEDING

3.1 Introduction

The nutritional needs of an infant increases significantly after six months of age and therefore the child needs other foods in addition to breast milk to have enough energy, protein, vitamins and minerals. Feeding the child with other foods in addition to breastfeeding is known as 'complementary feeding' and these other foods are called 'complementary foods'. During the period of complementary feeding the young child gradually becomes accustomed to eating family foods. It is important that mothers and caregivers understand when to commence complementary feeding, what foods to start with, how to feed a child and how to ensure that the food is hygienic and safe.

It is important that breastfeeding is continued up to the age of two years and beyond, if possible. Breast milk continues to be an important part of child's diet up two years; it provide half or more of the child's nutritional needs from 6-12 months and at least one-third of their nutritional needs from 12-24 months. As well as providing nutritional needs, breastfeeding continues to provide protection to the child against many illnesses and provides closeness and contact that helps psychological development.

Babies need to gradually start eating a variety of nutritious foods to continue growing well at six months. Clean, safe preparation and feeding of complementary foods are essential to reduce the risk of contamination and the illnesses that it causes. For clean and safe preparation of feeds clean hands, clean utensils, safe water and food and safe storage are needed.

The risks of introducing complementary foods too early (before six months) includes: Difficulty in meeting the child's nutritional needs; giving children lower nutrient density foods such as thin porridge; increasing the risk of illness because of less protective factors than breast milk and thus increasing the risk of diarrhoea and allergic conditions. It also increases the risk of mother getting early pregnancy. On the other hand, the risk of starting complementary feeding too late (more than six months) is that the child not receiving extra food/nutrients required to meet its growth and development needs and late introduction of complimentary foods may also result in to some children refusing to eat a variety of foods.

3.2 Guiding principles for feeding non-breastfed and breastfeed children 6-24 months of age

3.2.1 Amount of food

Breastfed

Start at six months of age with small amounts of food and increase the quantity as the child gets older, while maintaining frequent breastfeeding. The energy needs from complementary foods for infants with "average" breast milk intake in developing countries are approximately

- 200 kcal per day at 6-8 months of age,
- 300 kcal per day at 9-11 months of age
- 550 kcal per day at 12-23 months of age.

Non-breastfed

Ensure that energy needs are met. These needs are approximately

- 600 kcal per day at 6-8 months of age,
- 700 kcal per day at 9-11 months of age, and
- 900 kcal per day at 12-23 months of age.

3.2.2 Food consistency

Both breastfed and non-breastfed

Gradually increase food consistency and variety as the infant gets older, adapting to the infant's requirements and abilities. Infants can eat pureed, mashed and semi-solid foods beginning at six months. By 8 months most infants can also eat "finger foods" (snacks that can be eaten by children alone). By 12 months, most children can eat the same types of foods as consumed by the rest of the family (keeping in mind the need for nutrient-dense foods). Avoid foods in a form that may cause choking (i.e., items that have a shape and/or consistency that may cause them to become lodged in the trachea, such as whole nuts, whole grapes or raw carrots, whole or in pieces).

3.2.3 Meal frequency and energy density

Infants should start to eat mashed and semi-solid foods gradually increasing food consistency and variety as the infant gets older, adapting to the infant's requirements and abilities. When complementary food is introduced, give the baby one or two tablespoons of a new soft food twice a day. Use a variety of foods from the food groups to prepare the babies food.

A baby should be fed more frequently because it has a small stomach and can only eat little food at a time. Babies should gradually learn to feed themselves and an adult or older child should encourage the baby to eat enough food (active feeding). Lastly, babies should be given foods in their own plate/bowl/cup

Breastfed

Increase the number of times that the child is fed complementary foods as he/she gets older. The appropriate number of feedings depends on the energy density of the local foods and the usual amounts consumed at each feeding.

- For a baby aged between 6 to 12 months who is breastfeeding, give breast milk first before giving other foods.
- At 6 months start by using soft porridge or well mashed foods. Between 6-7 months give two to three table spoons at each meal two times a day.
- At 7 to 8 months of age, use mashed foods at least two thirds (2/3) of a cup (a cup = 250 ml), three times a day.
- At 9 to 11 months of age use finely chopped or mashed food and foods that the baby can pick up, at least three quarters (3/4) of a cup at each meal, three times a day plus one healthy snack.
- At 12 to 24 months, use family foods, chopped or mashed if necessary. Feed at least one full cup at each meal three times a day plus two healthy snacks.

Snacks are defined as foods eaten between meals-usually self-fed, convenient and easy to prepare. If energy density or amount of food per meal is low, or the child is no longer breastfed, more frequent meals may be required.

Non-breastfed

For the average healthy infant, meals should be provided 4-5 times per day, with additional nutritious snacks (such as pieces of fruit or bread or chapatti with nut paste) offered 1-2 times per day, as desired.

The appropriate number of feedings depends on the energy density of the local foods and the usual amounts consumed at each feeding. If energy density or amount of food per meal is low, more frequent meals may be required. If the baby is not breastfed between the age of 6 months and two years and beyond he/she will need two cups of 250mls (500ml) of milk each day.

For more information on how to feed a baby after 6 months see appendix VI.

3.2.4 Nutrient content of foods

Both breastfed and non-breastfed

The baby should be fed on a variety of foods every day from all food groups to ensure that nutritional requirement is met. Meat, poultry, fish or eggs should be eaten daily, or as often as possible, because they are rich sources of many key nutrients such as iron and zinc. The food groups include:

1. Cereals, roots and tubers e.g. rice, wheat, maize, millet, sorghum, cassava, yams potatoes and bananas
2. Foods of animal original and legumes e.g. meats, chicken, fishes, eggs, milk products (e.g. milk, cheese and yoghurt), chickpeas, lentils, beans, cowpeas and bambara nut
3. Green leafy and orange-fleshed vegetables e.g. carrots, pumpkins, sweet potato leaves
4. Fruits such as pawpaws, mangoes, oranges and bananas;
5. Oils, fats, sugar and honey: oils (preferably seed oils e.g. ground nuts, cashew nuts, pumpkins and sunflowers) margarine, butter or lard. Provide diets with adequate fat content

Vegetarian diets cannot meet nutrient needs at this age unless nutrient supplements or fortified products are used. Vitamin A-rich fruits and vegetables should be eaten daily. The daily diet should include Vitamin A-rich foods (e.g. dark coloured fruits and vegetables; red palm oil; vitamin A-fortified oil or foods); vitamin C-rich foods (e.g. many fruits, vegetables and potatoes) consumed with meals to enhance iron absorption; and foods rich in the B vitamins including riboflavin (e.g. liver, egg, dairy products, green leafy vegetables, soybeans), vitamin B6 (e.g. meat, poultry, fish, banana, green leafy vegetables, potato and other tubers, peanuts) and folate (e.g. legumes, green leafy vegetables, orange juice).

Children should also be given clean and safe water to drink. Drinks with low nutrient value, such as tea, coffee and sugary drinks such as soda should be avoided. Limit the amount of juice offered so as to avoid displacing more nutrient-rich foods. Avoid giving drinks with low nutrient value, such as tea, coffee and sugary drinks such as soda.

Non-breastfed

Milk products are rich sources of calcium and several other nutrients. If adequate amounts of other animal-source foods are consumed regularly, the amount of milk needed is ~200-400 mL/d; otherwise, the amount of milk needed is ~300-500 mL/d. Acceptable milk sources include full-cream animal milk (cow, goat, buffalo, sheep, camel) and fermented milk or yogurt. If milk and other animal-source foods are not eaten in adequate amounts, both grains and legumes should be consumed daily, if possible within the same meal, to ensure adequate protein quality.

Dairy products are the richest sources of calcium. If dairy products are not consumed in adequate amounts, other foods that contain relatively large amounts of calcium, such as small fish that include the bones (dried or fresh, with the bones crushed or otherwise processed so that they are safe to eat) and lime-treated maize tortillas can fill the gap. Other foods such as soybeans, cabbage, carrots, squash, papaya, dark green leafy vegetables, guava and pumpkin are useful additional sources of calcium. Provide

diets with adequate fat content. If animal source foods are not consumed regularly, 10-20 g of added fats or oils is needed.

Health care providers should;

- *Inform all parents/caregivers to start complementary feeding at six months of age.*
- *Inform all parents /caregivers that breast milk or other milk continue to be an important part of baby's diet up to two years and beyond.*
- *Foods given to babies should be pureed at first but not be too thin or runny*
- *Enrich the baby's porridge and mashed foods with milk, roasted and mashed groundnuts, and other nuts and seeds.*
- *Besides the staple foods like porridge, rice, mashed bananas and potatoes, babies need to eat some legumes, meat, poultry, fish or eggs every day.*
- *Dark green and orange fleshed vegetables and fruits provide important vitamins and minerals for the baby*
- *Make use of locally available and seasonal foods*
- *Fats, oil, sugar and honey can be added to the baby's food in moderation. They improve the energy content of the diet. Fats and oils also improve the absorption of some vitamins and the taste of foods*
- *Use of germinated cereals (power flour) and fermentation improves food quality and digestion* *See appendix III on Ways to enrich child's foods*
- *Give babies nutritious drinks such as fresh fruits juices, milk, and safe drinking water. Avoid giving tea, coffee, soda and other sugary or colored drinks.*
- *See appendix VI* *for more information on how to feed a baby after 6 months.*

3.2.5 Use of vitamin-mineral supplements, fortified products or home fortificants

Breastfed and non-breastfed

Use fortified complementary foods or vitamin-mineral supplements for the infant, as needed, preferably minced with or fed with food. These fortified foods or supplements should contain iron, zinc, vitamin A, calcium and vitamin B12. The World Health Organization and UNICEF recommend the use of micronutrient powders to prevent micronutrient deficiencies in children aged 6-23 months. Micronutrient powders are single-dose packets of iron and other vitamins and minerals in powder form that can be sprinkled onto any ready to eat semi-solid food. The powders are used to increase the micronutrient content in the infant's diet without changing their usual dietary habits.

Since vitamin A deficiency is prevalent in Tanzania it is recommended that children aged 6-59 months receive a high-dose vitamin A supplement (100,000 IU once for infants 6-11 months old and 200,000 IU twice yearly for young children aged 12-59 months old.

In some populations, breastfeeding mothers may also need vitamin-mineral supplements or fortified products, both for their own health and to ensure normal concentrations of certain nutrients (particularly vitamins) in their breast milk. Such products may also be beneficial for pre-pregnant and pregnant women.

3.2.6 Fluid needs

Non-breastfed

Non-breastfed infants and young children need at least 400-600 mL/d of extra fluids (in addition to the 200-700 mL/d of water that is estimated to come from milk and other foods) in a temperate climate, and

800-1200 mL/d in a hot climate. Plain, clean (boiled, if necessary) water should be offered several times per day to ensure that the infant's thirst is satisfied.

3.2.7 Safe preparation and storage of foods

Both breastfed and non-breastfed

Clean, safe preparation and feeding of complementary foods are essential to reduce the risk of contamination. It is important to observe that hands, utensils, water and food are clean. Drinking water and milk should be boiled and kept in clean covered containers. Food should be well cooked and kept in clean covered containers as well. Practise good hygiene and proper food handling by;

- Washing caregivers' and children's hands with soap (or a rubbing agent such as ash) before food preparation and eating
- Storing foods safely and serving foods immediately after preparation
- Using clean utensils to prepare and serve food
- Using clean cups and bowls when feeding children
- Avoiding the use of feeding bottles, which are difficult to keep clean.

Health care providers should inform mothers/caregivers on the following:

- *Washing hands with running water before food preparation, feeding a baby, after changing nappies and using toilet*
- *Demonstrate how to wash hands thoroughly with soap, ash or leaves and plenty of clean running water.*
- *Educate the mother on giving the baby safe water and food - washing fruits properly before use and keeping water and food in clean covered container and give freshly prepared complementary food.*
- *Preparing food in clean environment and keep it covered*
- *Storing food safely and serve foods immediately after preparation and avoid giving left overs foods to children.*
- *Using clean utensils to prepare and serve food and wash all utensils using with clean water and soap*
- *Serving children using clean cups and bowls and avoid using feeding bottles because they are difficult to clean and may cause diarrhea*
- *Inform mothers that it is not safe to keep warm milk or formula in thermos flask because bacteria can grow when milk is kept warm*
- *Educate that fresh feeds must be prepared each time if they contain milk, and should be used within an hour.*

3.2.8 Responsive feeding

Both breastfed and non-breastfed

Practise responsive feeding, applying the principles of psycho-social care. Specifically:

- Feed infants directly and assist older children when they feed themselves, being sensitive to their hunger and satiety cues
- Feed slowly and patiently, and encourage children to eat, but do not force them;
- If children refuse many foods, experiment with different food combinations, tastes, textures and methods of encouragement
- Minimize distractions during meals if the child loses interest easily;
- Remember that feeding times are periods of learning and love - talk to children during feeding, with eye to eye contact.

3.2.9 Feeding during and after illness

Both breastfed and non-breastfed

Increase fluid intake during illness and encourage the child to eat soft, varied, appetizing, favourite foods. After illness, give food more often than usual and encourage the child to eat more.

KEY MESSAGES ON COMPLEMENTARY FEEDING

Complementary feeding should be:

a) *Timely – meaning that it is introduced at the age of six months when the need for energy and nutrients exceed what is provided from exclusive breastfeeding*

b) *Adequate in nutrient density – meaning that it is not bulky and that it is derived from all food groups providing sufficient energy, protein and micronutrients*

c) *Safe – Meaning that it is hygienically prepared and fed with clean hands using clean utensils and not bottles.*

d) *Properly fed – meaning that children are fed according to their age, appetite and satiety. Children should be actively encouraged even during illness to consume sufficient food, using fingers, spoon and self-feeding suitable for age.*

CHAPTER 4: MANAGEMENT OF BREAST CONDITIONS & BREASTFEEDING DIFFICULTIES

4.1 Breast conditions

Breast conditions are diseases/situations that affect the breasts and may result in difficulties with breastfeeding. These conditions must be diagnosed and managed well for breastfeeding to continue successfully. They include flat or inverted nipple, breast engorgement, blocked duct, breast abscesses, mastitis, sore nipples and nipple fissures. Other problems associated with breastfeeding include refusal by the infant to breastfeed, perception that the mother does not have enough milk and excessive crying of a baby.

4.1.1 Flat or inverted nipples

Flat or inverted nipples should be detected during antenatal check-ups. Information on the management of flat or inverted nipples (see below) should be given to the mother during antenatal period and after delivery. Babies can breastfeed quite well from breasts of any size, with almost any shape of nipple. However, assistance by a health worker is needed to improve the mother's technique of attaching the baby to the breast. If the baby is not able to suck effectively, he/she ***might need to be fed on expressed breast milk using a cup for the first one or two weeks***.

Health care providers should:

- *Build the mother's confidence that she can breastfeed*
- *Explain that baby suckles the BREAST not the nipple*
- *Let the baby explore the breast and facilitate skin to skin contact*
- *Assist the mother to position and attach the baby immediately after delivery*
- *Assist the mother to use a pump/syringe to make the nipple stand out*
- *Show the mother how to express breast milk and feed by cup*

Please see figure 2 on management of flat nipples

Figure 2. Preparation of syringe for management of flat nipples

STEP	DIAGRAM	ACTIONS
1.		*Cut the syringe using a clean razor blade or sharp knife as indicated in the diagram*
2.		*Insert the piston inside the syringe through the side that has been cut*
3.		*Pull the flat nipple using the syringe as indicated in the diagram*

4.1.2 Breast engorgement

Breast engorgement means that the breasts are overfull with milk, increased tissue fluid or blood, which interferes with the flow of milk. Breast engorgement can be caused by plenty of milk, delays in starting to breastfeed, infrequent breastfeeding and restriction of the length of feeds. Sometimes when breasts are engorged, the skin looks red, and the woman has pain and fever as in mastitis, but fever from breast engorgement usually settles within 24 hours.

Health care providers should:

- *Assist the mother to breastfeed immediately after delivery*
- *Assist mother to ensure good attachment*
- *Encourage mother to breastfeed frequently and on demand (unrestricted breastfeeding)*
- *Provide pain killers such as paracetamol to the mother to relieve pain.*
- *Assist the mother to apply warm compression before breastfeeding.*
- *Assist mother to pump or manually express breast milk to reduce engorgement if the child is not able to suckle.*

4.1.3 Blocked duct

A blocked duct is a tender and localized lump in the breast. The breast is red, but the mother normally feels well. It may be caused if breastfeeding is not on demand, if the feeds are too short, if the infant is unable to attach properly and therefore is not emptying the breast, if there is damage to the breast tissue and if there is infection of the nipple.

Health care providers should:

- *Identify the cause and manage it accordingly e.g. poor attachment, assist the mother to attach the baby properly*
- *Assist the mother to apply warm compression between feeds*
- *Encourage breastfeeding on demand*
- *Assist the mother to gently massage the breast lump towards the nipple*
- *Treat or refer the mother for further management*

4.1.4 Mastitis

Mastitis is an inflammation of the breast tissue surrounding the milk ducts usually caused by blocked ducts, engorgement or bacteria entering a cracked nipple. The common signs and symptoms of mastitis are sudden localized tenderness and soreness in one breast, heat and swelling, fever, chills, body aches and fatigue. The management of mastitis involves application of the CARESS model, which stands for C= Compress (Hot and Cold), A= Antibiotics and pain killers (if necessary), R= Rest, E= Effective, gentle and frequent removal of breast milk, S= Stress identification and management S= Support and follow up.

Health care providers should:

- *Inform the mother about the signs and symptoms of mastitis*
- *Advise the mother with mastitis to avoid breastfeeding from the affected breast while mastitis is present*
- *Advise the mother to apply warm compression between feeds*
- *Advise the mother to use hot compression while expressing the milk and cold compression to relive pain*
- *Advise the mother to express and discard milk from affected breast frequently to prevent mastitis from becoming worse and to maintain milk supply.*
- *Apply incision, if required, and treat with appropriate antibiotics and analgesics*
- *Advise the mother to rest and counsel a mother to relieve stress.*
- *Provide support and follow up to the mother*
- *Inform mother that there is no harm feeding the baby on the breast once healed as some mothers fear to breastfeed their babies from the cured breasts*
- *Inform HIV infected mother that mastitis increases the risk of transmitting HIV to their infants through breastfeeding* *(Refer chapter five (5.3)*

4.1.5 Breast abscesses

An abscess is a collection of pus in any part of the breast as a result of unmanaged blocked ducts and mastitis – mastitis should be managed as mentioned above, including antibiotics. The breast develops a painful swelling, which feels full of fluid. An abscess might need drainage and cases should be referred to facilities that can provide this specialized care.

4.1.6 Sore nipples and nipple fissure

The commonest cause of sore nipples is poor attachment. If a baby is poorly attached she/he pulls the nipple in and out as the child sucks, and rubs the skin of the breast against his mouth. This is very painful to the mother. At first there is no fissure, the nipple may look normal or it may look squashed with a line across the tip when the baby releases the breast. If the baby continues to suckle in this way, it damages the nipple skin, and causes a fissure.

Health care providers should:

- *Help the mother position the baby correctly, so that he/she is well attached and change feeding position at each feed.*
- *Advise the mother to offer short frequent feeds to encourage less vigorous sucking.*
- *Advise the mother to breastfeed the baby on the least sore breast first if possible.*
- *Advise the mother that when removing the infant from the breast should break the suction gently by pulling on the infant's chin or corner of the mouth.*
- *Assess the cracked nipple for candidiasis and treat if necessary.*

4.1.7 Breast condition in HIV positive women

In women who are HIV-positive, mastitis or nipple fissure, especially if bleeding or oozing, may increase the risk of HIV transmission to the infant therefore the mother should avoid breastfeeding from the affected breast while the condition persists. The infant can feed from the unaffected side as most infants get enough milk from one breast. If both breasts are affected, the mother will not be /able to feed from either side. The mother will need to express the milk from both breasts.

The health care provider should discuss with the mother on the available options, either heat-treating the milk until she is recovered and resume breastfeeding or replacement feeding. If the mother chooses replacement feeding she should be informed that she cannot breastfeed again after recovery. If the mother expresses the breast milk during the period of illness it is possible for her to breastfeed again.

Health care providers should:

- *Help the mother position the baby correctly, so that he/she is well attached and change feeding position at each feed.*
- *Advise the mother to offer short frequent feeds to encourage less vigorous sucking.*
- *Advise the mother to breastfeed the baby on the least sore breast first if possible.*
- *Advise the mother that when removing the infant from the breast should break the suction gently by pulling on the infant's chin or corner of the mouth.*
- *Assess the cracked nipple for candidiasis and treat if necessary.*

4.2 Other breastfeeding difficulties

Other breastfeeding difficulties include refusal to breastfeed due to blocked nose, teething, oversupply of milk, changes which upset a baby and apparent refusal due to rooting, distraction and self-weaning. Others breastfeeding difficulties include mother's perception that she is not producing enough milk and excessive crying.

4.2.1 Refusal to breastfeed

Many mothers stop exclusive breastfeeding because their child refuses to breastfeed. Causes of refusal to breastfeed include illness, pain or sedation, difficulty with breastfeeding technique, changes which upset the baby and apparent refusal. Table 1 indicates the role of the health care provider in helping mothers whose children refuse to breastfeed.

Table 1. The role of health care provider in helping mothers whose children refuse to breastfeed

CONDITION	ROLE OF HEALTH PROVIDER
Child is sick or in pain	Treat infections with appropriate medication, and refer if necessary. Provide special care in hospital, if a baby is unable to suckle. Help the mother to express her breast milk and feed the baby by cup or by tube, until when the baby is able to breastfeed again. Help the mother to find a way to hold the baby without pressing on the painful place. See appendix V and VII on Feeding History Job Aid and Breastfeed Observation Job Aid
Teething	Encourage mother to be patient and to keep offering the baby breast
Blocked nose	Explain how the mother can clear the baby's nose (e.g. steam inhalation, clean the nostril with clean cotton bud). Suggest short feeds, more often than usual for a few days, express breast milk and feed with cup.
Sedation	Try to find an alternative medicine if the mother is on regular medication
Breastfeeding technique	Assist the mother to position and attach the baby properly. Help the mother with correct breastfeeding techniques when her baby is willing to breastfeed again.
Oversupply of milk	Helps the mother to improve her baby's attachment to reduce oversupply. Suggest that she lets him suckle from only one breast at each feed. Let him continue at that breast until he finishes by himself, so that he gets plenty of the fat-rich hind milk. At the next feed, give him the other breast. Suggest to the mother to lie on her back to breastfeed (if milk flows upwards, it is slower); Hold her breast with the scissor hold to slow the flow.
Changes which upset a baby	Discuss the need to reduce separation and changes if possible. Suggest that she stops using the new soap, perfume, or food.
Poor rooting	Explain that this is normal. Advise the mother to hold the baby at her breast to explore the nipple. Help the mother to hold the baby closer, so that it is easier for the baby to attach.
Distraction	Suggest that she tries to feed the baby somewhere quiet for a while. The problem usually passes.
Self-weaning	Advice the mother to breastfeed the child first and thereafter feeds enough family food. Advise the mother to give the baby plenty of extra attention.

4.2.2 Not enough milk

Almost all mothers can produce enough breast milk for one or even two babies. However, some mothers think that they do not have enough milk thus starting early complementation, bottle feeding or stop breastfeeding. Common reasons for baby not getting enough breast milk can be grouped into breastfeeding and psychological factors. Breastfeeding factors include delayed initiation, feeding at fixed times (instead of on baby's demand), not feeding as frequently as needed, no night feeds, too short feeds, poor attachment, using bottles or pacifiers or giving other foods or fluids e.g. tea or water. Mother's psychological factors include lack of confidence, depression, worries, stress, dislike of breastfeeding and rejection of baby. There are only two signs which reliably show that a baby is not getting enough milk - poor weight gain and passing small amounts of concentrated urine.

Table 2. Steps for addressing lack of breast milk

WHAT TO CHECK /DO	EXPLANATION
Check the baby's weight gain	Weight gain is the most reliable sign. For the first six months of life, a baby should gain at least 500 g each month. Look at the baby's growth chart if available, or at any other record of previous weights. If no weight record is available, weigh the baby, and arrange to weigh her/him again in one week's time.
Check the baby's urine output.	An exclusively breastfed baby who is getting enough milk usually passes dilute urine at least 6-8 times in 24 hours. A baby who is not getting enough breast milk passes strong smelling and dark yellow to orange urine, especially in a baby more than 4 weeks old. Ask the mother how often her baby is passing urine, colour and smell of the urine.
Counsel the mother	Assure the mother that the baby is getting enough milk. Build her confidence and remind her on good breastfeeding practices
Help the mother	Look for causes (taking feeding history, observing and assessing a feed) and advise the mother accordingly (see appendix V and VII). Build confidence and give support Help with less common causes: If baby is ill or abnormal, treat or refer; if mother is taking oestrogen pills or diuretic, refer for change if possible. Make follow-up daily, then weekly until baby gains weight and mother is confident.

4.2.3 Excessive crying

Excessive crying by a baby can upset the relationship between the baby and the mother, and can cause tension among other members of the family. An important way to help a breastfeeding mother is to counsel her about her baby's crying. There are several reasons why babies cry such as:

- Discomfort: The baby may feel uncomfortable from several causes such as dirty dressing, hot or cold weather.
- Hunger due to growth spurt: A baby seems very hungry for a few days, possibly because he is growing faster than before. He demands to be fed very often. This is commonest at the ages of about 2 weeks, 6 weeks and 3 months, but can occur at other times. If he suckles often for a few days, the breast milk supplies increases, and he breastfeeds less often again.
- Drugs or drinks mother takes: Caffeine in coffee, tea, and colas or other food can pass into breast milk and upset a baby. If the mother is on medication her baby might be more likely to cry than other babies. If the mother or someone else in the family smokes it can also affect the baby. Please see 8.4 Medications and breastfeeding.
- Colic: Some babies cry a lot without one of the above causes. Sometimes the crying has a clear pattern. The baby cries continuously at certain times of day, often in the evening. He may pull up his legs as if he has abdominal pain. He may appear to want to suckle, but it is very difficult to comfort him. Babies who cry in this way may have a very active gut, or wind, but the cause is not clear. This is called 'colic'. Colicky babies usually grow well, and the crying becomes less after the baby is 3 months old.
- Others: Such as Illness or pain from any source. Tiredness from many visitors

The role of health care provider with a child who cries a lot: *Explain to the mother that infants cry for several reasons, not just because they are hungry*

- *Take a history to look for the cause*
- *Check the baby's suckling position, and the length of a feed*
- *Examine the baby to make sure he is not ill or in pain. Check his growth, and take action accordingly*
- *Build confidence and give support to the mother while providing relevant information*
- *Suggestion depends on what has been learnt about the cause of the crying. Common causes may be different in different situations.*
- *Advise the mother to let the baby continue breastfeed until satisfied and give the other breast at the next feed*
- *Explain that if her baby stays on the first breast longer, he will get more fat-rich hind milk (see also 'Refusal to breastfeed')*
- *Ask other members of the family not to smoke in the same room as the baby.*
- *Give practical help such as explaining the best way to comfort a crying baby is to hold him close, with gentle movement and gentle pressure on his abdomen. Offer to show her some ways to hold and carry her baby. Please see figure 3 on holding a baby. See appendices IV-VI*

Figure 3. Different ways to hold a colicky baby



KEY MESSAGES ON BREAST CONDITIONS

a) Breast conditions include flat or inverted nipple, breast engorgement, blocked duct, breast abscesses, mastitis, sore nipples and nipple fissure.

b) Other breastfeeding difficulties include refusal to breastfeed due to blocked nose, teething, apparent refusal, excessive crying, and mother's perception that she is not producing enough milk.

c) Breast conditions must be diagnosed and managed early and mothers supported and counseled for breastfeeding to continue.

d) With exception of few conditions such as mastitis and breast abscess breastfeeding should not stop.

e) Early initiation, breastfeeding on demand, and correct position and attachment prevent most of the breast conditions

f) Health worker should help the mother breastfeed successfully by building mothers confidence and support

CHAPTER 5: INFANT FEEDING IN THE CONTEXT OF HIV AND AIDS

5.1 Introduction

It is important to understand that not all babies born to HIV+ mothers are infected through vertical transmission i.e. mother-to-child-transmission. About two-thirds of infants born to HIV-infected mothers will not be infected, even without any intervention. About 15 % of infants born to HIV-infected mothers will get the virus through breastfeeding if no preventative actions are taken. The risk continues as long as the mother breastfeeds, and is more or less constant over time. **When interventions are taken like the use of ARV's and other preventive measures, HIV transmission to the child is reduced to less than 5 %.**

Exclusive breastfeeding during the first six months of life carries a lower risk of HIV transmission than mixed feeding[1]. Research has shown that the transmission risk at six months in exclusively breastfed babies is lower (6 %) than in mixed fed babies. Early breastfeeding cessation is associated with reduced HIV transmission but also with increased child morbidity (especially diarrhoea) and mortality therefore it is important to promote exclusive breastfeeding irrespective of HIV situation. **Breastfeeding of HIV-infected infants beyond 6 months is associated with improved survival compared to stopping breastfeeding.**

The dilemma of infant feeding in the context of HIV is balancing the risk of infants acquiring HIV through breast milk with the higher risk of death from causes other than HIV if the infant does not breastfeed, in particular malnutrition and serious illnesses such as diarrhoea. Therefore recommended infant feeding practices by mothers known to be HIV-infected should support the greatest likelihood of HIV-free survival of their children and not harm the health of mothers. To achieve this, prioritization of prevention of HIV transmission needs to be balanced with meeting the nutritional requirements and protection of infants against non-HIV morbidity and mortality.

This section will discuss;

- Mother-to-child transmission of HIV
- Factors which influence mother-to-child transmission during breastfeeding
- Counselling for infant feeding in the context of HIV

5.2 Mother-to-child transmission

It is important to note that in Tanzania majority of pregnant women (more than 90 %) are not HIV infected and therefore it is important to promote, protect and support breastfeeding in the general population.

1 Mixed feeding is feeding a baby with breast milk and/or other foods and fluids including infant formula and water

Table 3: Estimated risk and timing of mother-to-child transmission of HIV

Timing of MTCT of HIV	Transmission Rate in %
During pregnancy	**5-10**
During labour and delivery	**10-15**
During breastfeeding	**5-20**
Overall without breastfeeding	**15-25**
	20-35
Overall with breastfeeding to 6 months	**30-45**
Overall with breastfeeding to 18–24 months	
Overall with breastfeeding up to 12 months with use of ARV	**5**

5.3 Factors which influence mother-to-child transmission during breastfeeding

Transmission rates during breastfeeding vary because of differences in population characteristics such as how ill the mothers are, how much virus is in their blood and how long breastfeeding lasts. Factors which affect mother-to-child transmission of HIV are as follows:

Recent infection with HIV: If a woman becomes infected with HIV during pregnancy or while breastfeeding, she has higher levels of virus in her blood, and her infant is more likely to be infected. A woman who is already HIV infected can get a new HIV infection and this will also increase the risk of transmission to her baby. It is especially important to prevent an HIV-negative woman from becoming infected during pregnancy and breastfeeding because then both the woman and her baby are at risk.

Severity of HIV infection: If the mother is ill with HIV-related disease or AIDS and is not being treated with drugs for her own health she has more viruses in her body and transmission to the baby is more likely.

Viral strain: Transmission rates differ is higher with HIV 1 than with HIV2.

Viral resistance: The presence of ARV resistant strains of HIV can increase the risk of MTCT. If the HIV virus is resistant to certain ARV medications, the medications will not work as effectively to prevent MTCT.

Duration of breastfeeding

The virus can be transmitted at any time during breastfeeding. Generally, the longer the duration of breastfeeding, the greater the risk of transmission.

Mixed feeding

There is evidence that the risk of transmission is greater if an infant is breastfed and given any other foods or drinks at the same time during the first six months. Other food or drinks may cause diarrhoea and damage the gut, which might make it easier for the virus to enter the baby's body.

Condition of the breasts

Nipple fissure and sores (particularly if the nipple is bleeding), mastitis or breast abscess may increase

the risk of HIV transmission through breastfeeding. Good breastfeeding technique, early identification and proper management of the breast conditions may reduce vertical transmission of HIV through breastfeeding.

Condition of the baby's mouth

Mouth sores or thrush in the infant may make it easier for the virus to get into the baby through the damaged skin.

This list of factors suggests several strategies that would be useful for all women, whether they are HIV-positive or HIV-negative, to reduce the risk of vertical transmission of HIV.

5.4 Counseling for infant feeding in the context of HIV

5.4.1 Pre and post-test counseling

The aim of pre-test counselling is to help a client to make an informed decision about whether or not to have an HIV test. In the process information on HIV and AIDS, available services for HIV infected mother and her infant is provided. All mothers attending the ANC and maternity services undergo HIV test to establish their HIV status and enable counselling on appropriate feeding.

After testing, post–test counselling needs to take place to prepare the client to receive the result, and respond in a 'constructive' way. Give an appointment to discuss feeding options. At this point a woman is also encouraged to bring her partners for testing. This is important as decision about how to feed a child for a HIV positive mother will need both parents. If the mother is HIV sero positive, infant feeding counselling could be offered if she is in labour or soon after delivery.

5.4.2 HIV negative women or women unaware of their HIV status

Mothers who are known to be HIV negative or whose HIV status is unknown should be counselled to exclusively breastfeed their infants for the first six months of life and then introduce complementary foods while continuing breastfeeding for 24 months or beyond. Mothers whose status is unknown should be offered HIV testing. Mothers who are HIV uninfected should be counselled about ways to prevent HIV infection to help them to remain uninfected, including the use of condoms.

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

Health care provider should:

- *Inform mothers that the only way to know their HIV status is by testing*
- *Offer HIV counselling and testing services to all mothers who are attending RCHS and their partners (antenatal, labour and postnatal clinics)*
- *Inform pregnant and breastfeeding women that HIV can be transmitted through breast milk but that the risk of transmission can be significant reduced through appropriate breastfeeding techniques and use of ARVs.*
- *Inform mothers that infections such as mastitis, STI can increase MTCT*
- *Counsel mothers who are HIV negative on ways to prevent HIV infection and about the services that are available such as use of condom to help them to remain uninfected.*
- *Encourage mothers to discuss HIV with their partners and practice safe sex at all times to reduce the risk of becoming infected with HIV.*

5.4.3 HIV positive mothers

5.4.3.1 ARV prophylaxis and treatment

HIV positive pregnant women should be initiated with antiretroviral therapy for treatment and prevention of MTCT according to National ART/PMTCT Guidelines.

HIV-positive pregnant women should be strongly encouraged and motivated to deliver at a healthcare facility where both the mother and child can benefit from safer delivery practices and have access to healthcare workers who are knowledgeable about interventions that reduce the risk of HIV transmission.

The decision for feeding practice to be promoted is based on WHO recommendations and consideration on the following:

- Socio-economic and cultural contexts of the populations served by maternal and child health services
- Availability and quality of health services
- Local epidemiology including HIV
- Prevalence of HIV among pregnant women; and
- Main causes of maternal, infant and child mortality and child under- nutrition.

Therefore in Tanzania it is recommended that pregnant women and mothers known to be HIV-infected should be principally be supported to breastfeed and use ARVs as the strategy that will most likely give their infants the greatest chance of HIV-free survival.

The mother is expected to exclusively breastfeed for the first six months, which means that the child receives only breast milk and no other foods, drinks or water. However, nutrient supplements and medicines may be provided if prescribed by an authorized prescriber. At six months of age the mother should introduce complementary foods while continuing breastfeeding up to 12 months.

In order to support a mother to practice exclusive breastfeeding the health care provider should:

- *Counsel all HIV infected mothers about the risks and benefits of breastfeeding with use of ARVs*
- *Counsel all HIV infected mothers about the risks and benefits of breastfeeding with use of ARVs*
- *Support mothers with information, knowledge and practical skills on how to breastfeed exclusively from 0-6 months (Refer Chapter on optimal BF).*
- *Counsel mothers on breast management during breastfeeding to prevent chances of getting breast problems.*
- *Counsel on safer sex to avoid HIV re-infection while breastfeeding to maintain good health as this will increase survival chances for both mother and the infants.*
- *Educate on dangers of mixed feeding earlier than 6 months*
- *Counsel the mother on the importance of introducing locally available nutritious complementary foods at six months of age.*
- *Counsel mother on eating varieties of foods from the food groups and avoidance of alcohol.*
- *Monitor CD4 count of the mothers every six months.*
- *Encourage and support mother to adhere to the ARV prophylaxis regime.*
- *Provide ARV medication to mothers and infants as per national guidelines.*

5.4.3.2 What to feed infants when mothers stop breastfeeding

When mothers known to be HIV-infected decide to stop breastfeeding at any time after six months, infants should be provided with safe and adequate replacement feeds to enable normal growth and development. Replacement feeding can be with formula milk or animal milk.

Circumstances/conditions needed to safely formula feed

- Safe water and sanitation are assured at the household level and in the community
- The mother or other caregiver can reliably provide sufficient infant formula milk to support normal growth and development of the infant
- The mother or caregiver can prepare it cleanly and frequently enough so that it is safe and carries a low risk of diarrhoea and malnutrition
- The mother or caregiver can, in the first six months, exclusively give infant formula milk
- The family is supportive of this practice
- The mother or caregiver can access health care that offers comprehensive child health services.

Home-modified animal milk

Home-modified animal milk is not recommended as a replacement food in the first six months of life

However in cases where breast feeding is not possible (e.g. mother has died or is very sick) and the family is unable to provide formula milk, modified cow's milk may be used to feed a child in the first six months of life (see Appendix XIII on how to prepare modified cow's milk). It is important that a child is given micronutrient supplement when home modified cow's milk is used. For children over six months of age, animal milk can be boiled to drink.

5.4.3.3 How to stop breastfeeding

Mothers should be advised to exclusively breastfeed for 6 months and continue up to 1 year. Stopping breastfeeding abruptly is not advisable. Mothers known to be HIV-infected who decide to stop breastfeeding at any time after six months should stop gradually within one month.

5.4.3.4 Heat treated expressed breast milk

Mothers known to be HIV-infected may consider expressing and heat-treating breast milk as a short-term feeding strategy in special circumstances such as:

- When the mother has a temporary breast health problem such as mastitis, nipple fissure and sore
- If antiretroviral drugs are temporarily not available

See Appendix XIX for instructions on how to heat treat expressed breast milk.

5.4.4 HIV positive mothers whose infants are HIV positive

The status of a HIV exposed children can be known as early as 4-6 weeks after birth (Early infant diagnosis).

Mothers tested HIV positive whose infants are known to be HIV-infected should be exclusively breastfed for the first 6 months of life and continue breastfeeding as per the recommendations for the general population up to two years or beyond.

Health care provider should

- *Inform the mother on the advantages of breastfeeding and the importance of exclusive breastfeeding for the first six months.*
- *Assist the mother to initiate breastfeeding within one hour of birth.*
- *Demonstrate and support the mother on correct positioning and attachment to the breast.*
- *Inform the mother on the dangers of artificial feeding, bottle feeding and use of pacifiers.*
- *Inform the mother on advantages of demand feeding and rooming in/bedding in*
- *Advice the mother on timely and appropriate complementary feeding with nutritious and safe foods.*
- *Encourage the mother to discuss HIV with their partners and practice safe sex at all times to reduce the risk of becoming re-infected with HIV*
- *Counsel mothers to use recommended family planning methods.*



KEY MESSAGES INFANT FEEDING IN THE CONTEXT OF HIV

a) *It is important to counsel all pregnant mothers and their partners to test for HIV*
b) *Less than 5 % of infants born to HIV infected mothers will get the virus through breastfeeding if appropriate precautions are taken, including the use of ARVs*
c) *The transmission risk at six months in exclusively breastfed babies is lower than in mixed fed babies.*
d) *Factors which affect MTCT of HIV include recent HIV infection, severity of infection, viral strain and resistance, longer duration of breastfeeding, mixed feeding, breast conditions and baby's mouth condition*
e) *Pregnant women who test positive require ARV prophylaxis or treatment as per national guidelines.*
f) *Reproductive and child health services will principally promote and support exclusive breastfeeding for the first six months and continued breastfeeding up to 12 months together with antiretroviral interventions as the strategy that will most likely give infants born to mothers known to be HIV-infected the greatest chance of HIV-free survival.*
g) *Clean hands, clean utensils, safe water and food and safe storage are important things to remember for clean and safe preparation of replacement feeds.*

CHAPTER 6: FEEDING INFANTS AND YOUNG CHILDREN WITH SPECIAL NEEDS

6.1 Introduction

Children with special medical conditions, including children born with physical or mental disabilities, are vulnerable to feeding problems and therefore require special support to enable adequate feeding and appropriate care. The approach to feeding will depend on the individual baby and his or her condition.

The care can be divided into categories based on the baby's condition:

- Baby can suckle well
- Baby able to suckle but not until he is full
- Baby able to take oral feeds but is not able to suckle
- Baby not able to take oral feeds

In this section feeding of infants and children with the following problems will be discussed:

low-birth-weight babies, neonatal hypoglycaemia, jaundice, dehydration, neurological conditions, cleft lip/palate, sick and inborn errors of metabolism (lactose intolerance, phenylketonuria and galactosemia)

6.2 Low-Birth-Weight babies

Low-birth-weight (LBW) babies include those born before term (premature) and those born at term but with birth weights less than 2.5 kilograms. These babies are at particular risk of infection and malnutrition and need more breast milk than bigger babies.

Babies who can suck should be breastfed. Small-for-dates babies usually suckle effectively and are often very hungry. Start feeds within 1 hour of delivery as many of these babies will be able to suck. Those who cannot breastfeed should be given expressed breast milk with a cup and spoon. When the baby is sucking well from the breast and gaining weight, reduce the cup and spoon feeds.

Babies who are less than 30 weeks gestational age are usually fed with expressed milk by nasogastric tube. The mother can let her baby suck on her clean finger while he is having the tube feeds. Let the mother hold her baby and give him skin-to-skin contact against her body for some time every day from this age.

Babies between 30-32 weeks gestational age can start taking feeds from a small cup. Start by giving cup feeds once or twice a day while the baby is still having most of his feeds by tube. If he takes cup feeds well, reduce the tube feeds.

Babies of 32-34 weeks gestational age or more are able to start suckling on the breast. 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 or tube to make sure that the baby gets all that he needs.

Babies of 34-36 weeks gestational age or more (sometimes earlier) can often take all that they need directly from the breast. However, occasionally supplements of expressed breast milk from a cup continue to be necessary if he is tired. If a baby suckles poorly, offer a cup feed after the breastfeed; if he is hungry, he will take milk from the cup and if he had enough, he will not take milk from the cup.

When a LBW 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 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. He can continue for up to an hour if necessary. Offer a cup feed after the breastfeed and offer alternate breast and cup feeds. Make sure that mother puts a baby in a good position to suckle well. Good position and attachment may make effective suckling possible at an earlier stage. The best position for a mother to hold her LBW baby is either at her breast or across her body "holding him with the arm on the opposite side to the breast" or "the underarm position". **See figures below**

Continue to monitor LBW babies and weigh them regularly to make sure that they are gaining weight and grow well. This is an indication that they are getting all the breast milk they need.

Figure 4: Holding a baby during breastfeeding

i. Underarm position suitable for small babies and twins,
ii. The arm opposite the breast suitable for small babies
iii. Ball position
iv. Lateral supine position









In order to ensure optimal feeding for these LBW babies health care providers should:

- Encourage mothers to visit, touch, and care for their babies
- Encourage and support skin to skin contact of mother-baby pair (Kangaroo mother care technique).
- Assist mother to notice signs which shows that the baby is ready for a feed.
- Observe breastfeeding and assist mothers to position and attach the baby to the breast.
- Weigh the infant daily and use the weight to calculate the amount of feed.
- Show mothers how to express breast milk, measure and cup feeding, adhere to volume reference charts and feeding schedules. See appendix IV on how to feed a baby using a cup and a table on recommended fluid intake for LBW

Time of first oral feed

If oral feeding is possible as soon as a baby is born, the first feed should be given within 1 hour, and every 2-3 hours thereafter to prevent hypoglycaemia (low blood sugar). Glucose water is not necessary for a well, full-term babies who are not at risk of hypoglycaemia.

Amount of breast milk for Babies who weigh less than 2.5 kg (low birth weight):

Start with 60 ml/kg body weight in the first day increase the volume by 20ml/kg body weight per day until the baby is taking 200 ml per day. Divide the total into 8 – 12 feeds, to feed every 2 – 3 hours.

Table 4: Recommended fluid intake for LBW infants

DAY OF LIFE	FLUID REQUIREMENTS(ml/kg/day		
	2000-2500g	1500-2000g	1000-1500g
Day 1	60	60	60
Day 2	80	75	70
Day 3	100	90	80
Day 4	120	115	90
Day 5	140	130	110
Day 6	150	145	130
Day 7	160+	160	150*

*If the infant is on intravenous fluid, do not increase above 140ml/kg/day

Skin-to-skin contact (kangaroo mother care)



Skin-to-skin contact between a mother (or father) and baby has been found to help both bonding and breastfeeding, probably because it stimulates the secretion of prolactin and oxytocin. If a baby is too sick to move, contact can be between the mother's hand and the baby's body. If a baby is well enough, let his mother hold him next to her body. Usually the best place is between her breasts, inside her clothes. This is called kangaroo mother care. Kangaroo mother care has the following advantages:

- The warmth of the mother's body keeps her baby warm. He does not get cold, and he does not use up extra energy to keep warm. There is less need for incubators.
- The baby's heart works better, and he breathes more regularly.

- The baby cries less and sleeps better.
- It is easier to establish breastfeeding.
- The baby gains weight more quickly due to frequent breastfeeding

6.3 Hypoglycaemia

Hypoglycaemia is present if blood sugar level is <3 mmol/L or 54 mg/dL. Hypoglycaemia and hypothermia usually occur together and are signs of infection.
Clinical signs are:

- Low body temperature (under-arm <35.0 ºC; rectal <35.5 ºC)
- Lethargy or limpness
- Possible loss of consciousness
- Eye-lid retraction (a child sleeps with his eyes slightly open)

Babies who are born prematurely or small for gestational age, who are ill or whose mothers are ill may develop hypoglycaemia. There is no evidence to suggest that low blood glucose concentrations in the absence of any signs of illness are harmful to healthy, full term babies. A healthy term baby cannot develop hypoglycaemia within 24 hours of birth simply because of under-feeding as they are born with enough body reserve. If signs of hypoglycaemia develop the baby should be investigated for another underlying problem and managed accordingly.

In order to prevent neonatal hypoglycemia health care providers should:

- *Assist mothers to initiate breastfeeding within one hour of birth*
- *Not give fluids such as water or glucose solution*
- *Encourage mothers to breastfeed on demand*
- *Feed the baby by NGT or cup if unable to suckle*
- *Encourage the mother to put the baby on kangaroo mother care position*
- *Investigate and treat infection*

6.4 Neonatal jaundice:

Jaundice is a yellow colour of the skin and eyes and is caused by high levels of bilirubin in the blood. The commonest kind of jaundice (jaundice physiological jaundice) occurs between the 2nd and 10th day of life. Jaundice is more common and severe among babies who do not get enough breast milk. It is routine in some hospitals to give babies fluids such as glucose water to clear jaundice but research has now shown that fluids such as water or glucose water do not help. Please refer to clinical guidelines such as IMCI for more information on newborn and neonatal jaundice.

To help prevent jaundice health care providers should:

- *Not give fluids such as water or glucose water, because they reduce breast milk intake*
- *Assist mothers to initiate breastfeeding to prevent jaundice as early feeds provide colostrum which has a mild purgative effect that helps to clear bilirubin through meconium*
- *Encourage feeding on demand since jaundiced babies need more breast milk*
- *Give 20% extra expressed breast milk for babies fed on expressed breast milk.*
- *Look for other signs such as an enlarged liver, dark urine and pale stool if jaundice persist for more than ten days*
- *Reassure the mother that this condition will disappear with time and increased breastfeeding*
- *Follow the IMCI guideline for management of jaundice.*

6.5 Dehydration

Dehydration is a condition which occurs when a child has lost much of the body fluids due to diarrhoea or vomiting. In a normal well-nourished child signs of dehydration are:

- Irritability/lethargy/or unconscious
- Sunken eyes
- Drinking eagerly/thirstily/not able to drink
- Skin pinch goes back slowly or very slowly taking longer than two seconds

Healthy exclusively breastfed infants do not require additional fluids to prevent dehydration even during diarrhoea. Babies with diarrhoea should be breastfed more frequently. Frequent breastfeeding provides fluid, nutrients, and protective factors. In addition, the growth factors in breast milk aid in the re-growth of the damaged intestine due to diarrhoea. However in severe dehydration the child might need intravenous fluid.

The health care provider should

- *Counsel mothers on optimal infant feeding:*
  - *Increase the frequency of breastfeeding.*
  - *Observe hygiene and safety practices during preparation of food and feeding.*
- *Increasing the intake of fluid (manage the dehydration according to IMCI guideline)*

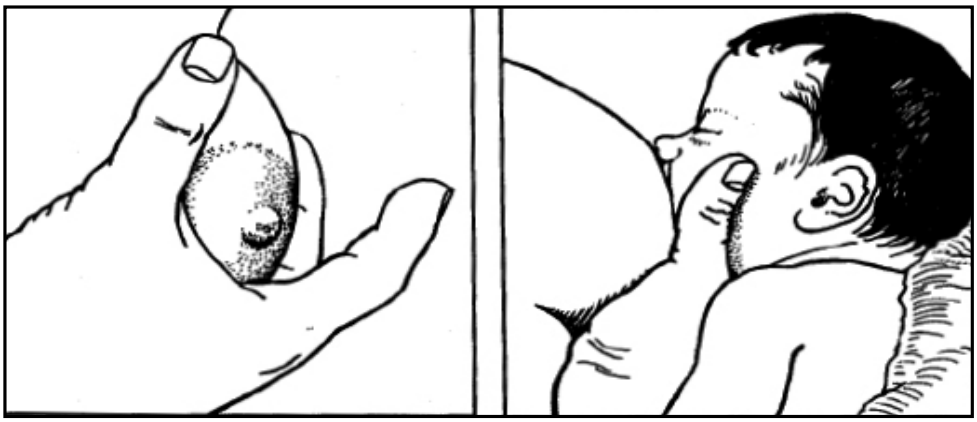
6.6 Neurological conditions

Babies with Down's syndrome and cerebral palsy have difficulty attaching to the breast and suckling because of muscular weakness. Even if the baby is not able to breastfeed, breast milk is still very important.

Health care providers should:

- *Encourage early contact and breastfeeding initiation within one hour of delivery.*
- *Advise the mother to wake up the baby for frequent breastfeeds and stimulate the baby to remain alert during feeding.*
- *Help the mother to position and attach the baby well. It may help if the mother supports her breast and her baby's chin to stabilize the baby jaw and maintain good attachment throughout the feed.*
- *Demonstrate to the mother how she can gently cup the baby's chin between her thumb and first finger and cup the remaining three fingers under her breast using dancers hand technique (see figure below)*
- *Help a mother to express the breast milk and feed by cup or tube.*

Fig 5. Dancer's hand



6.7 Cleft lip/palate

Some babies are born with congenital deformities in the mouth such as cleft lip or palate. Babies with cleft lip/palate need to be stimulated to breastfeed often enough and for longer time at each feed. Breastfeeding these babies take extra time and patience, thus their mothers need extra help and support. The baby should be referred for surgery, which usually takes place in one or more stages after some months. It is important for the baby to grow and to be well nourished before undergoing surgery.

Health care providers should:

- *Help mothers to position and attach the baby well if the cleft is at the front of the mouth.*
- *Show the mother how to express her milk and feed the baby with cup if the cleft is at the back of the mouth because suckling may be more difficult.*
- *Counsel mother to be patient while breastfeeding as this may take long time.*

6.8 Sick babies

A baby may have difficulty with breastfeeding when sick with, for example, a respiratory infection or sore mouth. When a baby is sick he may lose appetite and refuse to breastfeed or suckle less than before. Sometimes when a baby is sick his mother may stop breastfeeding him because the baby doesn't has appetite, is vomiting or has diarrhoea.

If a child is less than six months of age health care providers should:

- *Admit a baby and mother so that she can stay with him and breastfeed*
- *Encourage the mother to breastfeed more often if a baby can suckle well (increase the number of feeds up to 12 times a day or more during and after recovery)*
- *Help mother to express her milk, and feed with cup if he is not suckling enough or refuses to breastfeed*
- *Give the expressed breast milk through a nasogastric tube for a few feeds if a baby is unable to take expressed milk from a cup*
- *Encourage mother to express her milk when a baby cannot take oral feeds to keep up milk supply*

If a child is older than six months of age health care providers should:

- *Admit a baby and mother so that she can stay with him and breastfeed*
- *Encourage mothers to continue breastfeeding more frequently*
- *Encourage mothers to give frequent small feeds every 2-3 hours*
- *Feed by nasogastric tube if the child is seriously sick*
- *Encourage responsive feeding*
- *Give oral rehydration fluids and zinc in addition to breast milk if a child has diarrhea*
- *Encourage mothers to give extra meals when the child recovers*

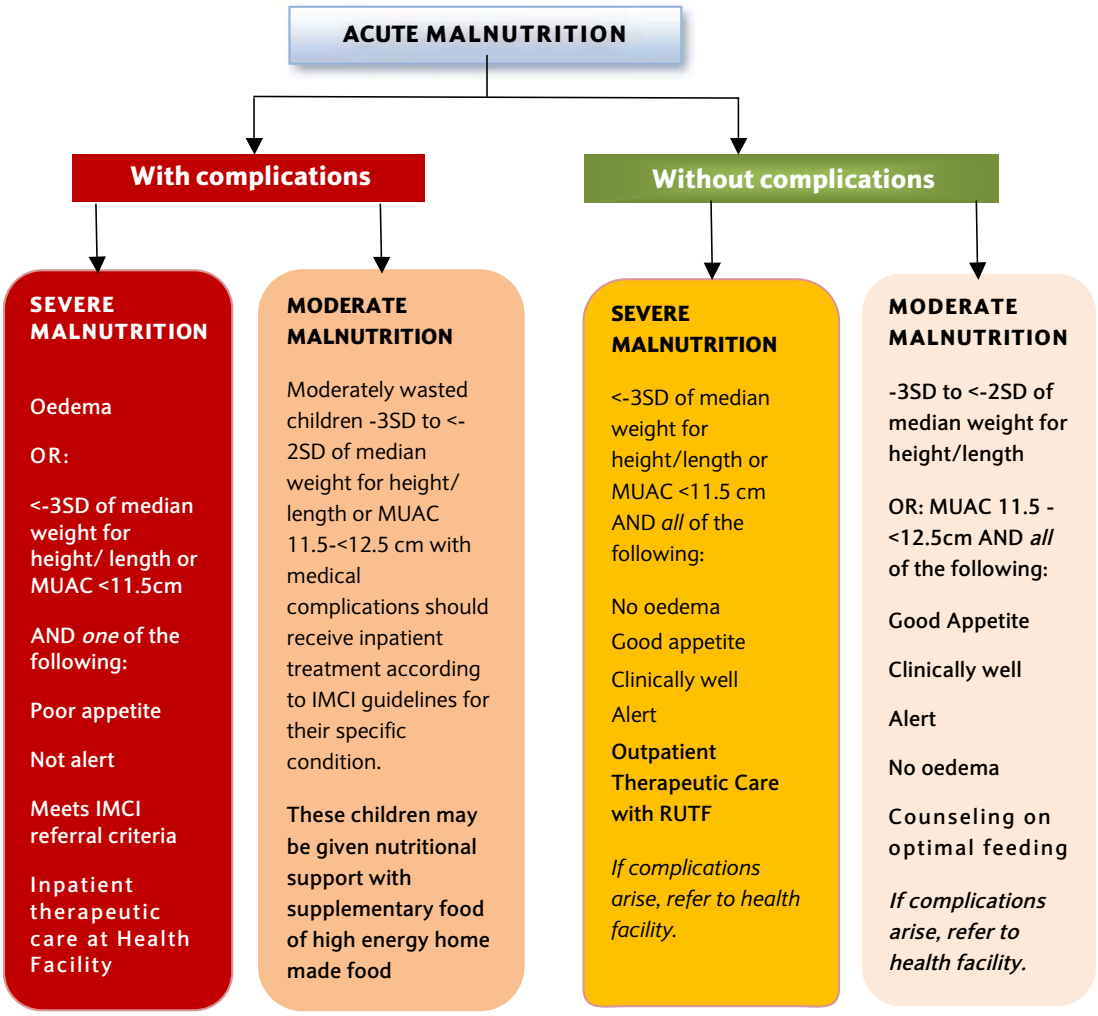
6.9 Malnourished Children

Acute Malnutrition is classified into severe acute malnutrition (SAM) and moderate acute malnutrition (MAM) according to the degree of wasting and the presence or absence of oedema.

- SAM is defined as: Severe wasting (weight for Height/Length <-3SD or MUAC <11.5cm) and/or Oedema of both feet
- Moderate acute malnutrition is defined as: Moderate wasting (weight for Height/Length ≥-3 SD and <-2 SD or MUAC 11.5-<12.5cm)

Children with acute malnutrition who need medical attention should be managed in the health facility, either as an inpatient or outpatient according to the national guidelines on the management of acute malnutrition.

Figure 6. Classification of Acute Malnutrition and actions to be taken in the management



6.10 Inborn errors of metabolism

Babies with inborn errors of metabolism such as lactose intolerance, galactocaemia, phenylketonuria or maple syrup urine disease need to be seen and followed-up by a well-trained health professional. These infants need individualized feeding plans and the mother and family needs to be guided on how to feed their babies. They may require partial or complete feeding with a special breast milk substitute that is appropriate to their specific metabolic condition

KEY MESSAGES ON FEEDING INFANT AND YOUNG CHILDREN WITH SPECIAL NEEDS

a) Children with physical or mental disabilities are vulnerable to feeding problems and require special support to enable adequate feeding and appropriate care.

b) LBW infants should be fed within 2 hours of delivery to prevent hypoglycemia. Those aged less than 30 weeks by nasogastric tube, those between 30-32 weeks with a small cup and those 32-34 weeks are able to suckle on the breast

c) Encourage mothers of infants with hypoglycemia, jaundice or dehydration to breastfeed frequently and follow IMCI treatment guidelines.

d) Babies with Down's syndrome, cerebral palsy and cleft palate have difficulty attaching to the breast and suckling because of muscular weakness, and their caregivers need special guidance.

e) Children with acute malnutrition should be treated according to the national guidelines on the management of acute malnutrition, which encouraged appropriate IYCF practices.

f) Babies with inborn errors of metabolism such as lactose intolerance, galactocaemia, phenylketonuria or maple syrup urine disease need to be seen and followed-up by a well-trained health professional.

CHAPTER 7: FEEDING OF INFANTS AND YOUNG CHILDREN IN EMERGENCY SITUATIONS

7.1 Introduction

Emergencies are natural or man-made tragedies such as wars, conflict, droughts, floods, landslides and earthquakes. Such situations disrupt the social and economic settings of communities and threaten all the conditions needed for nutrition, including the ability of caregivers to provide proper care, the maintenance of adequate health services and the food security of household. During emergency situations, children and women are the most vulnerable victims. Disease and death rates among under-five children are generally higher than in any other age group. Mortality may be particularly high due to the combined impact of a greatly increased prevalence of communicable diseases and diarrhoea and soaring rates of malnutrition. Interrupted breastfeeding and inappropriate complementary feeding heighten the risk of malnutrition, illness and mortality. Uncontrolled distribution of breast milk substitutes, for example, can lead to early and unnecessary cessation of breastfeeding. The fundamental means of preventing malnutrition and mortality among infants and young children during emergency is to ensure their appropriate feeding and care.

It is well known that in emergency situations, many agencies/institutions and donors come forward to offer relief without any proper coordination. It is therefore of importance to adhere to the international and national policies and guidelines available. In this section the following areas will be addressed:

- Promoting, protecting and supporting breastfeeding of infants
- Replacement feeding
- Complementary feeding
- Food donations and supplies
- Management of severely acute malnutrition

7.2 Promoting and supporting breastfeeding.

In emergency situations, the focus needs to be on creating conditions that will facilitate breastfeeding, such as establishing safe 'corners' for breastfeeding mothers and infants, one-to-one counselling, and mother-to-mother support. Traumatized and depressed women may have difficulty in responding to their infants and require particular mental and emotional support. Every effort should be made to identify ways to breastfeed infants and young children who are separated from their mothers.

Exclusive breastfeeding is extremely important especially in emergency situations where accessibility to adequate clean and safe water is usually a major problem and economic environments are poor because of the displacement. It has been shown that even in emergency situations women can breastfeed exclusively for the first six months after giving birth. Breastfeeding support should therefore be integrated in other services for mothers, infants and young children.

The service provider in emergency should:

- *Enroll all pregnant and lactating mothers and screen new arrival to identify and refer mothers or infants with severe feeding problems for immediate assistance*
- *Assess feeding practices including early initiation of breastfeeding within one hour of birth*
- *Assist mothers in positioning and attachment*
- *Encourage mothers to breastfeed on demand and exclusively breastfeed their infants for the first six months*
- *Assist mothers to re-lactate and maintain production of breast milk if necessary*
- *Establish and foster mother to mother support*

7.3 Replacement feeding

Replacement feeding is unlikely to meet conditions needed to safely formula feeding for most women in emergencies. The risks of infection or malnutrition from using breast milk substitutes are likely to be greater than the risk of HIV transmission through breastfeeding. In emergencies, the procurement, distribution, targeting and use of breast milk substitutes and milk products should be strictly controlled based on technical advice, and comply with the National Regulations. During the first six months of the child's life, replacement feeding should be done with a suitable infant formula. From six months up to two years the child need suitable breast milk substitute with complementary foods.

The health care providers should:

- *Encourage mothers to test for HIV in order to know their status for decision making on how to feed their infants*
- *Distribute suitable infant formula only to mothers or care givers for infants who need them according to strict criteria as stipulated in the international and national guidelines. Unsuitable milk products, feeding bottles and teats are forbidden*
- *Provide mothers and caregivers with knowledge and skills for safe preparation, storage, cleaning of utensils and use of cups instead of bottles because they are difficult to clean*

7.4 Complementary feeding

In all situations, special attention should be given to the nutritional value of the food ration distributed to infants and young children whose particular nutrient requirements are often not covered by the general ration. Households with children aged 6-23 months should be provided with specialized foods to enable them to prepare complementary foods for their young children, such as micronutrient fortified blended foods e.g. corn soya blend, wheat soya blend, fortified maize / wheat flour.

In the emergency situation the health care provider should:

- *Emphasize appropriate complementary feeding of infants aged six months to two years*
- *Adhere to the recommendations of complementary feeding*
- *Assess the availability of appropriate foods to prepare complementary foods for infants and young children in the general ration and targeted feeding programs*
- *Provide fortified foods to assist households in preparing complementary foods for infants and young children, taking into account prevailing micronutrient deficiencies*
- *Provide multiple micronutrient supplements*
- *Assess the health environment, including water quality, fuel, sanitation, and housing facilities for food preparation and cooking*

7.5 Food donations and supplies

Inappropriate donations of infant formula and other milk products may be a result of a desire to help. Organizations who are involved in funding, planning and implementing an emergency response are often not coordinated leading to uncontrolled distribution of breast milk substitutes. If supplies of infant formula and/or powdered milks are widely available, mothers who might otherwise breastfeed might needlessly start giving artificial feeds. This exposes many infants and young children to increased risk of infectious diseases, malnutrition and death, especially from diarrhoea when clean water and sanitary facilities are scarce.

Donations of breast milk substitutes may be needed in emergencies but they should be provided through appropriate channels to avoid putting infants' lives at risk. All donor agencies, non-governmental organizations (NGOs), media, faith based organization (FBOs), individuals and other partners wishing to help should adhere to the national regulations and guidelines on emergencies. Provision of fortified foods, micronutrient supplements such as vitamin A or zinc and other foods such as pulses, meat, or fish in supervised programs for young children represents a much more appropriate form of assistance.

The health care providers should:

- *Not include breast milk substitutes in distribution for the general population*
- *Ensure any unsolicited donations are directed to the designated coordinating agency*
- *Provide breast milk substitutes to eligible children in accordance with the Tanzania Food, Drugs and Cosmetics (Marketing of Foods and Designated Products for Infant and Young Children) Regulation*
- *Counsel mothers and caregivers to observe good hygienic practices*
- *Monitor and control the distribution of breast milk substitutes and designated products*
- *Provide orphans and unaccompanied children with appropriate immediate nutritional care and support*

7.6 Management of Severe Acute Malnutrition

The treatment of severe acute malnutrition in children, whether facility or community based, should be carried out in accordance with national guidelines (see Section 6.9). Commercial infant formulas are not appropriate for treating severe acute malnutrition in any situation including emergencies.

The health care providers should:

- *Screen the child by taking anthropometric measurements: weight, height and MUAC and check for presence of oedema*
- *Classify and categorize the child using National guideline on management of acute malnutrition*
- *Manage the condition as per national guidelines*
- *Encourage mothers to increase the frequency of breastfeeding*
- *Counsel mothers to give a child nutrient dense complementary foods for children with moderate acute malnutrition who are six months and older*
- *Monitor the child and promote growth*

KEY MESSAGES ON FEEDING IN EMERGENCY SITUATION

a) Traumatized and depressed women in difficult circumstances may have difficulty in responding to their infants and require particular mental and emotional support

b) Adequate clean and safe water is a problem in emergency situation; therefore all efforts must be made to promote exclusive breastfeeding, support re-lactation where necessary and keep mothers and children together.

c) Pay special attention to the nutritional value of the food ration distributed to infants and young children.

d) Strictly control the procurement and the distribution of breast milk substitutes and milk products based on technical advice and comply with the National Regulations.

e) Donations of breast milk substitutes may be needed in emergencies but they should be provided through appropriate channels so as to avoid putting infants' lives at risk.

f) Commercial infant formulas are not meant for the purpose of managing malnutrition in any situation including emergencies. These children should be managed according to the international and national guidelines

CHAPTER 8: MATERNAL NUTRITION AND HEALTH

8.1 Introduction

Maternal health and nutrition influences pregnancy outcome. Maternal short stature and thinness prior to pregnancy and poor weight gain during pregnancy can lead to LBW infants and increased risk of obstetric complications and maternal death. Effective intervention will reduce these conditions.

A small number of health conditions of the mother may justify the mother not to breastfeed either temporarily or permanently. Whenever stopping breastfeeding is considered, the benefits of breastfeeding should be weighed against the risks posed by the specific conditions. In addition to breastfeeding, family planning also contributes to better maternal and child health.

In this section the following aspects will be discussed:

- Nutrition during pregnancy and lactation.
- Mother's illness and breastfeeding.
- Medications and breastfeeding.
- Child spacing and breastfeeding

8.2 Nutrition during pregnancy and breastfeeding

Weight gain during pregnancy is an important indicator for good nutritional status. A well-nourished woman is expected to gain about 12 kg during pregnancy with an average of 1 kg weight gain per month during the last three months of pregnancy. The gain in weight during pregnancy is also part of preparation of the mother's body for breastfeeding. Good nutritional status of the mother can decrease chances of mother delivering a LBW, premature or still born infant. It can also can prevent maternal anaemia and improve the physical and mental development of the baby. Energy and nutrient needs increase during pregnancy and these needs are even higher during breastfeeding.

Table 5: Interpretation of measurement of nutritional status in pregnant women

Measurement	Nutrition status
Weight of < 45kg	Undernutrition
Weight gain of <1.0 kg/month/ in 2nd & 3rd trimesters	Undernutrition
MUAC <23.5 cm	Undernutrition
Height of <1.45m	Undernutrition
Hb below 11.0 g/dl	Anaemic

A breastfeeding woman uses about 700 calories a day to make breast milk of which about 200 calories come from her fat stores and 500 calories should come from the diet that she eats. A woman with moderate malnutrition produces adequate amount of breast milk (800-1000 ml per day) and of good quality. It is only with severe malnutrition that breast milk production is reduced. A severely malnourished woman may continue to produce about 500 ml of breast milk per day if her baby suckles frequently. Her breast milk may contain a lower quantity of fat and some vitamins than breast milk from a well-nourished mother; however, it is of better quality than a breast milk substitute.

For the mother to maintain good nutrition and health status the health care providers should:

- *Counsel women to start antenatal clinics as soon as she suspects she is pregnant to monitor weight gain and the health and the growth of the baby*
- *Advise pregnant and breastfeeding women to eat a variety of foods from the five food groups in adequate amounts every day and to drink enough safe water every day (8 glasses or 1.5 liters)*
- *Advise pregnant women to eat an extra meal and healthy snacks in between meals every day*
- *Counsel pregnant and breastfeeding women to avoid drinking tea or coffee with meals because it will interfere with iron absorption and may contribute to anemia. If tea or coffee is taken it should be at least one hour before or after meal*
- *Counsel pregnant and breastfeeding women to avoid alcohol, narcotics or tobacco products*
- *Give pregnant and breastfeeding women iron and folic acid as per national guidelines and Counsel on the use of iodized salt to avoid iodine deficiency*
- *Give all mothers vitamin A supplement (200,000 IU) immediately after delivery or within 8 weeks of delivery*
- *Counsel pregnant women on the importance of immunization, use insecticide treated bed-nets and give her deworming tablets and ant malarial as per national guidelines*
- *Advise pregnant women to reduce heavy work load and rest for at least one hour during a day especially in the last three months of pregnancy*
- *Counsel pregnant and breastfeeding women on the importance of maintaining self-hygiene and hygiene of food, water and environment.*

8.3 Mother's illness and breastfeeding

Some mothers stop breastfeeding when they are ill for various reasons such as fear that the baby will catch the illness or separation of the mother and her baby. It is rarely necessary for a sick mother to stop breastfeeding due to these reasons. With most common infections, breastfeeding does not increase the chance of the baby becoming ill. Women can continue to breastfeed in nearly all cases because antibodies in breast milk are the best protection for the baby.

Hospitalization in itself is not a contraindication to breastfeeding. For most maternal infections, including tuberculosis, hepatitis B, and mastitis, breastfeeding is not contraindicated. It is no longer considered necessary to separate mothers with tuberculosis or leprosy from their infants. Treat both mother and baby together as per national TB guidelines.

Health care providers should

- *Explain to the mother the value of continuing to breastfeed during her illness*
- *Counsel the mother to continue breastfeeding when she has a common contagious illness such as a chest infection, sore throat, or gastrointestinal infection because the baby receives some protection from the infection. If breastfeeding stops at this time, the baby is at higher risk of contracting the mother's infection*
- *Minimize separation and keep the mother and baby together*
- *Give plenty of fluids, especially if the mother has a fever*
- *Assist the mother to find a comfortable position for feeding or show someone else how to help her to hold the baby comfortably*
- *Help the mother to express her milk and feed the baby with a cup if she is too unwell to breastfeed her baby*
- *Assist the mother to re-establish breastfeeding after she recovers, if there has been an interruption during the illness and there are no restrictions in doing so*
- *Ask the family member to stay with mother if she is hospitalized and needs help*

8.4 Medications and breastfeeding

If a mother requires medication it is often possible for the health care provider to prescribe a drug that is safely taken during breastfeeding. Most drugs pass into breast milk only in small amounts and few affect the baby. In most cases stopping breastfeeding may be more dangerous to the baby than the drug. A medication that the mother takes is more likely to affect a premature baby or those less than two months old. If there is concern, it is usually possible to find a drug or treatment that is more compatible with breastfeeding.

Health care providers should

- *Encourage the mother to continue breastfeeding while continuing monitoring the baby*
- *Observe the baby for side effects such as abnormal sleepiness, unwillingness to feed and jaundice, especially if the mother needs to take the drug for a long time*
- *Ask a more specialized prescriber, to find an alternative drug that is safer if needed or refer the mother to a higher health facility*
- *Consider replacement feeding temporarily and counsel the family if the baby has side effects and the mother's medication cannot be changed*

8.5 Maternal conditions that may justify temporary avoidance of breastfeeding

Non-infectious conditions

- Severe illness that prevents a mother from caring for her infant, for example sepsis, psychosis, severe eclampsia and its complications

Maternal infectious illnesses;

- **Breast abscess** - feeding from the affected breast is not recommended but milk should be expressed from the breast. Feeding can be resumed once the abscess has been drained and the mother's treatment with antibiotics has been completed. Breastfeeding should continue on the

unaffected breast.

- **Herpes Simplex Virus Type I** (HSV-1) – women with herpes lesions on their breasts should refrain from breastfeeding until all active lesions on the breast have resolved.
- **Varicella-zoster** – breastfeeding of a newborn infant is discouraged while the mother is infectious, but should be resumed as soon as the mother becomes non-infectious.
- **Lyme disease** – breastfeeding may continue during mother's treatment.
- **HTLV-I** (Human T-cell leukaemia virus) - breastfeeding is not encouraged.
- **Hepatitis B - i**nfants should be given hepatitis B vaccine, within the first 48 hours or as soon as possible thereafter Hepatitis C
- **Mastitis -** if breastfeeding is very painful, milk should be removed by expression to prevent progression of the condition.
- **Tuberculosis -** mother and baby should be managed together and baby continues to breastfeed.

Maternal medication

- ***Sedating psychotherapeutic drugs*** - anti-epileptic drugs and opioids and their combinations may cause side effects such as drowsiness and respiratory depression and are better avoided if a safer alternative is available;
- ***Radioactive iodine-131*** - is better avoided given that safer alternatives are available a mother can resume breastfeeding about two months after receiving this substance;
- Excessive ***use of topical iodine or iodophors*** (e.g., povidone-iodine), especially on open wounds or mucous membranes, can result in thyroid suppression or electrolyte abnormalities in the breastfed infant and should be avoided;
- ***Cytotoxic*** chemotherapy requires that a mother stops breastfeeding during therapy.
- **Substance use**:
  - Maternal use of nicotine, alcohol, ecstasy, amphetamines, cocaine and related stimulants has been demonstrated to have harmful effects on breastfed babies;
  - Alcohol, opioids, benzodiazepines and cannabis can cause sedation in both the mother and the baby.
  - Discourage use of these substances to mothers, and give opportunities and support to abstain.

Health care providers should:

- ***Encourage and support sick mothers to stay with their children so that they can breastfeed***
- ***Inform mothers that majority of maternal illness do not call for stopping breastfeeding, however, few justify temporary avoidance***
- ***Advice mothers to avoid substance use***
- ***Counsel mothers to continue breastfeeding while treatment continues***
- ***Monitor and observe the child whose mother is on medication and change medication if need arises***

8.6 Child spacing and breastfeeding

Child spacing allows the mother to maintain good nutrition status and gives the mother time to care for the baby. Breastfeeding can delay the return of ovulation and menstruation and thus can help to space pregnancies. The Lactation Amenorrhea Method (LAM) helps women who wish to use breastfeeding

for child spacing. The LAM is 98 % effective in preventing conception in the first six months if three conditions are met:

- The mother is not menstruating,
- The mother is exclusively breastfeeding (day and night), and
- The baby is less than 6 months old.

If any of these three conditions are not met, it is advisable for the mother to use another method of family planning to delay pregnancy.

Most family planning methods are compatible with breastfeeding with exception of oestrogen containing contraceptive pills.

Health care providers should:

- *Advise the mothers that LAM is effective if she exclusively breastfeed in the first six month on demand day and night in the absence of menstruation*
- *Counsel mothers to wait for about 3 years before getting pregnant again to allow them to recover from stress of pregnancy and breastfeeding*

KEY MESSAGES ON MATERNAL NUTRITION AND HEALTH

a) During pregnancy and lactation the nutritional requirement increases

b) Poor nutritional status of the woman both before and during pregnancy may result in LBW infants and increased the risk of obstetric complications and maternal death.

c) Weight gain during pregnancy is an important indicator for good nutritional status. A well-nourished woman is expected to gain about 12kg during pregnancy

d) Women can continue to breastfeed in nearly all cases when she is ill because antibodies in breast milk are the best protection for the baby

e) It is no longer considered necessary to separate mothers with tuberculosis or leprosy from their infants. Treat both mother and baby together as per national guidelines.

f) In most cases stopping breastfeeding may be more dangerous to the baby than the drug. Always look for a safer drug where possible

g) Severe illness that prevents a mother from caring for her infant, for example sepsis, psychosis, severe eclampsia and its complications may justify temporary avoidance of breastfeeding

h) The Lactation Amenorrhea Method (LAM) is 98 % effective in preventing conception in the first six month if the mother is not menstruating, is exclusively breastfeeding on demand day and night.

CHAPTER 9: ON-GOING SUPPORT FOR MOTHERS

9.1 Introduction

The health facility where the baby is born can do much to initiate and establish breastfeeding or safer replacement feeding, if necessary. However, the need for support continues after the mother is discharged. In some communities, mothers are well supported by friends and family members. Where this is not available, e.g. if the mother is living away from her own family, the health facility needs to arrange some alternative follow up. Some mothers might deliver outside the health facility. These mothers will need on-going support on the best way to feed their infants. This must be discussed with mothers before discharge or during the first contact with health facility after delivery. The support which is needed to enable mothers to feed their infants and young children optimally includes;

- Preparation for discharge from the health facility.
- Follow-up and support after discharge or first contact with health facility.
- Sustaining breastfeeding in the second year or longer
- Providing proper complementary feeding

9.2 Preparing a mother for discharge

Before a mother leaves a maternity facility, she needs to:

- Be able to feed her baby
- Understand the importance of exclusive breastfeeding for 6 months and continued breastfeeding after the introduction of complementary foods to two years and beyond.
- Be able to recognize that feeding is going well.
- Find out how to get the on-going support that she needs.

Health worker should:

- **Ensure that the mother and baby use the appropriate breastfeeding technique**
- **Counsel mothers on;**
  - *baby-led, or demand feeding, and how babies behave,*
  - *recognizing baby's feeding signs,*
  - *what to do if she thinks that she does not have enough milk,*
- **Demonstrate to a mother how to:**
  - *Position her baby for good attachment at the breast.*
  - *Recognize signs of effective breastfeeding and that of a healthy baby.*
  - *Express her breast milk and cup feeding.*
  - *If the mother is HIV+ remind her to take her medicines and give the baby as per PMCTCT guidence.*

9.3 Follow-up and support after discharge or first contact with health facility

9.3.1 Reasons for supporting mothers

When a mother goes home after discharge or first contact with a health facility, she might need a family member, friend, health worker or other person who will help her to become confident as she learns about caring for her baby. A mother needs help particularly if she:

- Is a first time mother.
- Has difficulty in feeding her baby.
- Has many demands on her time such as caring for other children and household tasks.
- Needs to work outside the home and leave her baby.
- Is isolated and has little contact with supportive people.
- Receives confusing and conflicting advice from many people.
- If she or the baby has a health problem.

A new mother may need encouragement to look for help and to use support that is available. Follow-up of the mother who is on replacement feeding is very important to ensure that she is using the option properly.

Health workers in a health facility should:

- ***Counsel pregnant women during antenatal care services on support services available in case of need to improve their confidence from the beginning***

9.3.2 Groups of people in the community who could provide on-going support

Family and friends

Families and friends can be an important source of support for breastfeeding in general. Unfortunately support for exclusive breastfeeding in the six months is often lacking in families where other women have always given their infants liquids and foods at an early age. Mothers who are practising replacement feeding especially HIV-positive mothers need support from family and friends.

Health workers in a health facility should;

- ***Counsel the mother, family members and friends on the importance of exclusive breastfeeding***
- ***Counsel the mother who is not breastfeeding and family members and friends on the dangers of mixing breastfeeding and replacement feeding in children less than six months***

Primary health care and community health workers

Any time a health worker is in contact with a mother and young child, the health worker can help and support the mother in feeding and caring for her baby. If the health worker cannot do so themselves, they may be able to refer the mother to someone else who can provide support. Community health workers are often nearer to families than hospital-based health workers and may be able to spend more time with them. To be effective, community health workers need to be trained to support mothers to feed and care for their babies. Community health facilities (health centres and dispensaries) should have trained staff that will help a breastfeeding mother when she contacts the clinic. It may be effective to form a mother support group from the clinics. Health workers should be an example in their own communities by exclusively breastfeeding their own babies with the addition of appropriate complementary foods after six months of age.

Health workers in a health facility should;

- *Identify Community Health Workers in the catchment area and train them to impart knowledge and skills to support mothers on optimal feeding*
- *Encourage mothers from the same area to form a support groups on discharge*
- *Link mothers/support groups with the trained Community Health Workers*
- *Counsel groups on optimal breastfeeding and complementary feeding*

Mother to mother support

This support is usually community-based and may be provided one-to-one or group based. An experienced mother with good infant feeding practices can provide individual support to a new mother. A group may be started by a few mothers themselves or by a health or community worker. In a mother-to-mother support group you can find that:

- Help can be available in the mother's own community,
- Women's traditional patterns of getting information and support from relatives and friends are reinforced,
- Feeding and caring for a baby are seen as normal activities rather than problems that need to be solved by a health worker,
- Discussion groups are led and help is given by experienced mothers,
- Mothers feel reassured and become more self-confident,
- Pregnant women as well as more experienced mothers are welcome,
- Mothers can help each other outside of group meetings and build friendships.

Some mother-to-mother support groups can be part of larger networks to be provided with training, written materials and other related services. The mothers with best practices in the groups should be invited to contribute to health worker's training, and to visit wards and clinics to introduce themselves to pregnant women and new mothers so as to give their testimonies.

Before the mother leaves the maternity facility health workers should:

- *Discuss what family support she has at home*
- *If possible, talk with family members about how they can help*
- *Give the mother the name of the section at the hospital, or at a clinic for future follow up contacts at any other time, if she has any difficulties or questions*
- *Counsel mothers to come for her routine postpartum, and take the baby with her, so that she or he can be followed-up too*
- *Remind mothers of the key points about optimal feeding*
- *Give written materials as a reminder. These must not be from companies that produce or distribute breast milk substitutes, bottles or teats*
- *Give mothers contact support group in her area and encourage them to join the groups*

If there are no existing support groups available in the area, health workers should:

- *Establish mother support groups that are lead by Community Health Worker and meet in the community with a link to the health facility*
- *Train mothers with assistance of CORPS in the area.*
- *Encourage/support CORPS on counseling individual mothers in their areas on optimal feeding and refer those with problems which need attention to the health facility*

9.3.3 Baby-friendly Initiative

The Baby Friendly Initiative is an accreditation methodology for hospitals, community settings or universities and makes a significant difference to outcomes for breastfeeding. The standards for accreditation have recently been revised and can be found on the UNICEF website (http://www.unicef.org.uk/BabyFriendly/Health-Professionals/Going-Baby-Friendly/)

For the Baby Friendly Initiative 10 steps to successful breastfeeding have been identified, these are explained in detail in chapter 10, section 10.3:

1. Have a written breastfeeding policy that is routinely communicated to all healthcare staff.
2. Train all healthcare staff in the skills necessary to implement the breastfeeding policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding soon after birth.
5. Show mothers how to breastfeed and how to maintain lactation even if they are separated from their babies.
6. Give newborn infants no food or drink other than breast milk, unless medically indicated.
7. Practice rooming-in, allowing mothers and infants to remain together 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no artificial teats or dummies to breastfeeding infants.
10. Identify sources of national and local support for breastfeeding and ensure that mothers know how to access these prior to discharge from hospital.

The Baby Friendly Initiative also has a community component, which may include the following:

- Health system, or local health care provision, is designated "Baby-friendly" and actively supports both early and exclusive breastfeeding;
- Access to a referral site with skilled support for early, exclusive and continued breastfeeding is available and community approved;
- Support is provided for age-appropriate, frequent, and responsive complementary feeding with continued breastfeeding;
- Mother-to-mother support system, or similar, is in place;
- No practices, distributors, shops or services that violate the national regulations for marketing of breast milk substitutes are present in the community;
- Local government or civil society creates and supports the implementation of change that actively supports mothers and families to succeed with optimal infant feeding practices. Examples of this change could be time-sharing of tasks, granting authority to transport a breastfeeding mother for referral if needed, identification of "breastfeeding advocates or protectors" among community leaders, and breastfeeding supportive workplaces.

Health workers in a health facility of a particular community should;

- ***Provide technical support to facilitate the implementation of ten steps in the community***
- ***Provide skilled support for early, exclusive and continued breastfeeding to ensure that health facility, or local health care provision, is designated "Baby friendly"***
- ***Ensure mother-to-mother support system is in place***
- ***Ensure that no practices, distributors, shops or services that violate the national regulations for marketing of breast milk substitutes are present in the community***

9.3.4 Breastfeeding and employment

A woman who works outside the home may value breastfeeding because of:

- Less illness in the baby, so she misses less time from work to care for a sick child
- Ease of night feeds, thus mothers get more sleep
- Opportunity to spend time with the baby and continue the closeness to the baby
- A chance to a rest while she feeds the baby
- A special personal relationship with her baby

Benefit to employers who support women to continue breastfeeding include:

- Mothers are away from work less because their children are healthy
- Mothers can concentrate on their work because they have less concern about their babies' health
- Employers retain skilled workers because women are more interested in working for employers who are supportive
- Families and the community think well of the employers that are supportive
- Breastfed babies grow up to be a healthy future workforce

Some weeks before the mother is due to go back to work, health worker should:

- ***Discuss the benefits of breastfeeding exclusively and frequently during maternity leave***
- ***Discuss the possibility of going to the work place with her baby***
- ***Discuss the possibility of caring for the baby near her workplace so that she can feed the baby at break times or the baby can be brought to her***
- ***Discuss possibility of using the two 1 hour breaks as per national employment and labour relations act (2004)***
- ***Discuss how the mother can seek support and guidance from other mothers who are working and breastfeeding***
- ***Counsel mothers to breastfeed whenever mother and baby are together – nights, early morning, and days off***
- ***Counsel mothers on use of expressed breast milk and expression of breast milk about every 3 hours at work to keep up the milk supply and the breasts more comfortable. The breasts will make more milk when the milk is removed***
- ***Counsel mothers/care givers to give feeds in a safe and loving way, by cup rather than by bottle, so to avoid nipple confusion***

Much of the information about breastfeeding for working mothers also applies to mothers who are students.

National employment and labour relations acts No.6 of 2004 provide the following entitlements:

- Maternity leave of 84 days for on child and 100 days for more than one child after every three years without forfeiting the annual leave.
- 2 hours breastfeeding breaks for working women
- 3 days of paternity leave to assist mothers with early caring of the newborn(s).

Health worker should

- *Inform all pregnant and lactating women about maternity benefits as stipulated in the Labour Act*
- *Advocate for male participation in care of the infants and young children*

9.4 Sustaining breastfeeding in the second year or longer

There is no specific age at which breastfeeding is no longer important. Breastfeeding continues to keep the bond between mother and child close, protects against illness and ensures good nutrition. Breastfeeding young children can be valuable even after 2 years, especially when the child becomes ill. Often a sick child will be able to breastfeed even when she/he is not interested in eating other foods. This helps the child to get fluids as well as helping to avoid weight loss during illness. Breastfeeding can also sooth a child who is in pain or upset.

Breastfeeding an older baby is different from breastfeeding a newborn. As a baby becomes more alert, she or he may be distracted by noises and activity easily during breastfeeds. Older children may breastfeed twice a day or more frequently. Some children need to breastfeed only if they are hurt or upset.

Health worker should

- *Counsel mothers to breastfeed in a quiet place to limit distractions*
- *Discuss with mothers how to overcome competing pressures on her, whether from the workplace or family, as the child gets older*

9.5 National health programs for mother and child supporting appropriate feeding

Continued support for breastfeeding is done through other national health and nutrition programs including:

- Maternity leave of 84 days for one child
- The Integrated Management of Childhood Illness (IMCI)
- The Expanded Programme of Immunization (EPI)
- Micronutrient supplementation programs for iron, folic acid and vitamin A
- Essential New born Care programmes: Usually done from birth up to 42 days, which is an important time to ensure that breastfeeding is going well
- Growth monitoring and promotion
- Family planning programmes

Health worker should

- *Refer and link the mother and her child for other services as needed.*

KEY MESSAGES ON SUPPORT FOR MOTHERS

a) *Breastfeeding mothers should be supported by the friends and family members after the discharge. If this is not available the health facility worker needs to organise alternative follow up*

b) *Pregnant mothers need counselling on the support available during the ANC services in case they are required to improve her confidence*

c) *Community health workers are often nearer to families than are hospital-based health workers and may be able to spend more time with them*

d) *Facility health workers can mobilise the community to form mother-to-mother support groups*

e) *Baby-friendly communities should discuss and practice Ten Steps to Successful Breastfeeding and may have mother to mother groups as part of larger networks, which can be provided with training, written materials and other related services*

f) *Health workers should inform employed pregnant women about maternity benefits as stipulated in various acts, while advocating for male partner's participation*

g) *Continued support for breastfeeding is done through other national health and nutrition programs such as IMCI, EPI, FP and growth monitoring and promotion*

CHAPTER 10: SUPPORTIVE SERVICES FOR OPTIMAL INFANT AND YOUNG CHILD FEEDING

10.1 Introduction

Child survival starts at the point when the mother becomes pregnant. The survival of the unborn child depends on health and nutritional status of the mother and the environment in which they live. The survival, growth and development of the child after birth is dependent on the child receiving all basic needs, which are feeding, health and protection from their parents, the community, the government and stakeholders. Relevant supportive services include:

- Growth and development monitoring and promotion
- Health facilities at all levels promoting, supporting and protecting breastfeeding and complementary feeding – as assessed e.g. through Baby Friendly Hospital Initiatives

10.1.1 Indicators for growth

Physical growth is generally measured in terms of height, weight and mid-upper am circumference (MUAC). Growth changes occur so rapidly during the first 18 months, and check-ups need to be organized monthly during this important period.

A growth chart is designed primarily for the longitudinal follow up of a child, so that changes of weight and height over time can be interpreted. Single measurement of the weight and height of the child may be very difficult to interpret properly without additional information.

Periodic measurements of the weight and height of a child are therefore necessary. The first measurement should be obtained from birth or as soon as possible after wards. This guideline will focus on the following indicators.

Height for age (stunting)
Stunting refers to a child that is short for his/her age and is also known as chronic malnutrition. The levels are very high in Tanzania and it is a result of long-term poor nutrition. Correct infant and young child feeding practices has a great impact of stunting levels.

Weight for Age (underweight)
The relative change of weight for age is more rapid than height and is much more sensitive to any deterioration or improvement in the health of the child. Significant changes can be observed over period of few days making the measurements easy, so a high level of accuracy is possible. It is for these reasons that weight for age is the measurement employed in growth monitoring, particularly in infants and young children. One possible disadvantage is that it may be affected by abnormalities in body composition, for instance by development of oedema and these confuse its interpretation. Particular attention should be given to this possibility when dealing with severely malnourished children; however, it should not interfere with the early detection of malnutrition which is one of the main reasons for carrying growth monitoring.

Weight for Height (wasting)
By relating the weight of the child to its height or length, the child's degree of thinness can be obtained. Weight for height is more specific in this respect than the measurement of weight alone, which does not

distinguish between a tall, thin child and a short, fat one. When the child health services are not able to carry out regular monitoring and children are seen irregularly or only once, weight for height is of value because it is independent of age and can be used in populations where children's ages are not known.

Mid Upper Arm Circumference (MUAC)
Arm circumference can be useful measurements for assessing thinness and therefore advanced malnutrition, particularly under field conditions when measuring both weights and heights is impracticable. It could thus be of value in screening large populations, for instance when it is necessary, under field conditions, to identify those children in great need of nutritional assistance. It can be used in any situation when one wants to assess nutritional status of the children from the age of six months and beyond.

Health worker should

- *Inform and counsel the mother about appropriate infant and young child feeding practices.*
- *During growth monitoring, check for signs of malnutrition and illness and provide counseling and treatment, or refer the child for treatment or further care*
- *If the child does not gain weight for two months, refer the child for further investigation of the problem*

10.1.2 How to measure a child and interpreting the growth chart

Infants and children should be weighed every month for the first 24 months then after every 3 months up to five years. Length/height of infants and children should be taken every 3 month up to five years according to the MOHSW guideline.

Because the weight of a child provides very useful information in assessing its health status, it is important that weighing is done as accurate as possible particularly when measurements are made at short intervals to monitor growth (See appendix VIII).

- The weight should be recorded at the nearest 0.1 kilogram (kg)
- The height should be recorded at the nearest 0.1 centimetre (cm)
- MUAC to be recorded at the nearest 0.1 centimetre (cm)
- The direction of growth curve of a child (upwards, horizontal or downwards) is what matters
  - Upward direction of growth curve indicates good growth. The child is growing adequately
  - Horizontal of growth curve is the warning sign. The child is not putting on weight, he has stopped growing.
  - Down wards direction of growth curve is the danger sign .The child is losing weight. The child needs immediate medical attention
  - Horizontal or down wards direction of the growth curve is the danger sign (regardless of the score) it indicate health problem which needs intervention
  - Faltering of growth is the warning sign
- The scale should be checked each time it is moved by verifying that is reads zero when empty and checking the reading for a known weight
- The arrow should be adjusted to zero before each weighing session

How to measure MUAC *(See appendix VIII)*

Table 6: Interpretation of measurement of Mid Upper Arm Circumferences (MUAC)

Colour	Length	Nutritional Status
Red	<11.5 cm	Severe Malnutrition
Yellow	11.5 -12.4 cm	Moderate Malnutrition
Green	≥ 12.5 cm	Normal Nutrition

Health care provider should

- *Weigh the baby immediately after delivery and monthly for the first two years and later every three months until the child is 5 years*
- *Record weight to the nearest 0.1 kilogram*
- *Take MUAC measurements of children every three months and record to the nearest 0.1 centimetre*
- *Take height after every three months and record to the nearest 0.1 centimetre*
- *Discuss with the mother the results of the measurements and take appropriate action.*

10.2 Legislations (National Regulations for Marketing BMS and Maternity Protection)

Breastfeeding should be protected promoted and supported. One essential way to protect breastfeeding is to regulate the promotion of infant formula. Individuals, health facilities and health workers can also protect breastfeeding if they resist letting companies use them to promote formula.

10.2.1 Manufacturers promote their products

Manufacturers promote their products; they persuade people to buy more of them and persuade mothers to buy more formula. This promotion undermines women's confidence in their breast milk, and makes them think that it is not the best for their babies which harms breastfeeding. Breastfeeding needs to be protected from the effects of formula promotion and hence the development of the national regulations for marketing of BMS.

10.2.2 National Regulations for Marketing BMS

Tanzania adopted the National regulations in 1994 under the Food (Control of Quality) Act of 1978. The regulation is currently incorporated in the Food, Drug and Cosmetics Act of 2002 which has replaced the Food (Control of Quality) Act of 1978. This regulation has been reviewed to incorporate WHO Resolutions on infant feeding in the context of HIV. Health workers should observe and adhere to the following:

- No advertising of breast milk substitutes to the public
- No free samples to mothers
- No promotion of breast milk substitutes and designated product to health facilities
- No company personnel to advice mothers
- No gifts or personal samples to health workers
- No pictures of infants or other pictures idealizing artificial feeding, on the labels of products
- Information to health workers should be scientific and factual
- Information on artificial feeding, including that on labels, should explain the benefits of breastfeeding and costs and dangers associated with artificial feeding
- Unsuitable products, such as sweetened condensed milk, should not be promoted for babies

10.2.3 Maternity protection

Maternity protection enables women to fulfil their productive and reproductive roles free from discrimination, harassment, or loss of employment, which in turn fulfils the fundamental rights of the child to food and health. According to the Tanzania, Employment and Labour relations Act No.6 of 2004 women are entitled to**:**

- 84 (100 days for multiple birth) paid maternity leave plus the usual 28 days paid annual leave every 3 years
- Two hours paid break for breastfeeding daily during working hours
- Commence maternity leave at any time from four weeks before the expected date of confinement
- Commence maternity leave on an earlier date if a medical practitioner certifies that it is necessary for the employee's health or that of her unborn child
- Not to work within six weeks of the birth of her child, unless a medical practitioner certifies that she is fit to do so
- Not to perform work that is hazardous to her health or the health of her child (this applies to both pregnant women and nursing mothers). If necessary a suitable alternative employment should be provided on terms and conditions that are no less favourable than her terms and conditions.
- Give notice to the employer of her intention to take maternity leave at least 3 months before the expected date of birth and such notice shall be supported by a medical certificate

Health care provider should;

- ***Promote, protect and support breastfeeding***
- ***Orient himself /herself with the National Regulation for Marketing of Breast milk substitutes and designated products***
- ***Adhere to the provisions of the national regulations***
- ***Inform employed mothers about employment and Labour Relation Act No.6 of 2004 which enables women to fulfill their productive and reproductive roles free from discrimination, harassment, or loss of employment***

Employers should;

- ***Abide by provisions of the Labour Relation Act***
- ***Inform employed mothers about employment and Labour Relation Act No.6 of 2004 which enables women to fulfill their productive and reproductive roles free from discrimination, harassment, or loss of employment***

10.3 Baby Friendly Hospital Initiative (BFHI)

About 50 % of deliveries in Tanzania take place in health facilities, and health care practices in these facilities can have a major effect on infant feeding. To encourage breastfeeding from the time of childbirth, to prevent difficulties from arising and to overcome difficulties should they occur; mothers need appropriate information, counselling and skilled help. Support and counselling should be available routinely during antenatal care to prepare mothers at the time of birth to help them initiate breastfeeding and in the postnatal period to ensure that breastfeeding is fully established. Mothers and other caregivers who are not able to breastfeed need counselling and support for alternative methods of infant feeding. The Baby Friendly Hospital Initiative (BFHI) was launched in 1992 with the aim of transforming maternity facilities to provide this standard of care. Without the BFHI, practices often undermine breastfeeding, with damaging consequences for infant's health. Hospitals become baby-friendly by implementing the Ten Steps to Successful Breastfeeding

The assessment of the health facility performance is done using the international BFHI facility assessment tool ***(See appendix IX criteria for successful implementation BFHI)***

STEP1: ***Have a written breastfeeding guideline that is routinely communicated to all health care staff.***

A hospital guideline and other related guidelines should cover all aspects of management outlined by the Ten Steps, and all staff should be fully informed about the guideline. To be accredited as baby-friendly, a hospital is required to avoid all promotion of breast milk substitutes (BMS) and related products, bottles and teats, and not to accept free or low-cost supplies or to give out samples of those products. The guideline also should require all HIV-positive mothers to receive counselling on infant feeding. The guideline should be available so that all staff that takes care of mothers and babies can refer to it in the following areas:

- Antenatal care
- Labour and delivery areas
- Maternity wards and rooms
- Reproductive and child health clinic
- **Infant special care units.**

STEP 2: ***Train all health care staff in skills necessary to implement the guideline***

All health care staff with responsibility for mothers and babies should be trained to implement the guideline, which includes being able to help mothers to initiate and establish breastfeeding, and to overcome difficulties. Clinical and non-clinical staff members needs orientation and/or training concerning breastfeeding while working at the facility on why breastfeeding is important and lactation management to be able to support women so they can feed their babies well.

STEP 3: Inform all pregnant women about the benefits and management of breastfeeding

Women need information about:

- The benefits of breastfeeding and the risks of artificial or mixed feeding
- Optimal practices, such as early skin-to-skin contact, exclusive breastfeeding, rooming-in, starting to breastfeed soon after delivery, and why colostrum is important
- What to expect, including how the milk 'comes in', and how a baby suckles
- What they will need to do - skin-to-skin contact, putting the baby to the breast, and appropriate patterns of feeding

STEP 4: Help mothers initiate breastfeeding within one-hour of birth

The first hour of a baby's life is of great importance for the initiation and continuation of breastfeeding, and to establish the emotional bond between mother and baby. Delays in initiation of breastfeeding after the first hour increase the risk of neonatal mortality.

Health care providers should:

- *Place the baby onto the mother's abdomen and chest before delivery of the placenta or any other procedures, unless there are medical or obstetric complications that make it impossible*
- *Dry immediately to prevent heat loss and then place in skin-to-skin contact with the mother. Skin-to- skin contact means that both the mother's upper body and her baby should be naked, with the baby's upper body between the mother's breasts. They should be covered together to keep them warm*
- *Ensure that mothers who are HIV positive initiate breastfeeding on the same methods as above*

STEP 5: Show mothers how to breastfeed and how to maintain lactation, even if they should be separated from their infants.
All mothers need help to ensure that their babies are suckling effectively, and to express breast milk when this is necessary.

Health care provider should:

- *Show a mother how to breastfeed (positioning and attachment) while avoiding touching the mother and the baby as much as possible*
- *If a mother needs practical help, the helper can use either her own body or a model breast and doll or a picture to show the mother what to do*
- *Build the mothers confidence that she can breastfeed and encourage her to do demand feeding*
- *Show mothers how to express their breast milk to maintain lactation*
- *Assist non-breastfeeding mothers to safely prepare their feeds*
- *Support mothers who delivered by caesarean section to feed. It is usually possible for a mother to breastfeed within about four hours of a caesarean section - as soon as she has regained consciousness. After epidural anaesthesia, babies can often breastfeed within 30 minutes-1 hour. Exactly how soon depends partly on how ill the mother is, and partly on the type of anaesthetic used.*

STEP 6: Give newborn infants no food or drink other than breast milk unless medically indicated

Foods and drinks given to a newborn baby before breastfeeding has started are called **prelacteal feeds**. Giving these feeds increases the risk of illnesses such as diarrhoea and other infections and allergies, particularly if they are given before the baby has had colostrum. Prelacteal feeds satisfy a baby's hunger and thirst, making him or her less interested in feeding at the breast, so there is less stimulation of breast milk production.

Health care provider should:

- *Avoid giving pre-lacteal feeds to newborns*
- *Discourage giving pre-lacteal feeds to newborns unless medically indicated*

STEP 7: *Practice rooming-in: Allow mothers and infants to remain together-24 hours a day*

Mother and baby should not be separated – they should remain in the same room throughout the stay in the health facility to enable breastfeeding day and night. Rooming-in is essential to enable a mother to breastfeed her baby on demand and for her to learn the cues such as wakefulness, rooting and mouthing, which show that her baby is ready for a feed.

STEP 8: *Encourage breastfeeding on demand*

It is better to feed the baby in response to these cues than to wait until the baby is crying. Mothers who are HIV-positive do not need to be separated from their babies.

Health workers should:

- *Help mothers to learn to respond to the signs that her baby gives such as rooting, and not to wait until her baby is upset and crying to offer the breast*
- *Advise mothers to feed their babies as often and for as long as the babies want.*
- *Encourage mothers to stay with their babies all the time*

STEP 9: *Give no artificial teats or pacifiers (also called dummies and soothers) to breastfeeding infants*

Teats, bottles and pacifiers can carry infection and are not recommended. Cup-feeding is recommended, as a cup is easier to clean and also ensures that the baby is held and looked at while feeding. It takes no longer than bottle feeding. If a hungry baby is given a pacifier instead of a feed, he may not grow well.

Health care provider should:

- *Educate mother on dangers of using teats bottle and pacifiers*

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

Breastfeeding may not be fully established for a few weeks, and many problems can arise during this time. To be accredited as baby-friendly, a hospital must be able to refer a mother to an accessible source of on-going skilled support. This may be outpatient care provided by the hospital, a health centre or clinic, a primary care worker or a community health worker trained in breastfeeding counselling, a peer counsellor, or a mother-to-mother support group.

The key to best breastfeeding practices is continued day-to-day support for the breastfeeding mother within her home and community. Those who support breastfeeding mothers in the community do not have to be medically trained personnel.

Health care provider should:

- *Ensure implementation of the Ten steps to successful breastfeeding by the facility*
- *Give printed information to mothers before discharge on how to feeding their infants after returning home*
- *Give information on how to get help from the facility, support groups or other community health services if they have questions about feeding their babies*
- *Visit the mothers in their homes after discharge from the clinic or hospital, and support them*
- *Assist in the establishment of community support groups*
- *Train the support groups and link the mothers with the groups*

Criteria for successful promotion, protection and support of breastfeeding in a health facility i.e. implementation of BFHI is done by The Baby Friendly criteria. This will be used to assess the facilities for performance. See Table 9

Table 7: BFHI Assessment tool

Performance (% score)	**Baby Friendly Status**
< 70	Poor/Failed
70 – <80	Commitment
80 -100	Baby friendly

KEY MESSAGES ON SUPPORTIVE SERVICES FOR OPTIMAL INFANT AND YOUNG CHILD FEEDING

a) *The growth and development of the child after birth depends on feeding, health and protection from parents and the community*

b) *Regular growth monitoring is an important method for identifying problems in a child growth and help in to provide needed care timely, weight for age is more sensitive to child's health changes*

c) *A child should be weighed monthly up to age of two years according to the MOHSW guidelines and every three months thereafter up to five years*

d) *Breastfeeding needs to be protected from the effects of formula promotion by manufactures' that undermines women's confidence in their breast milk*

e) *Tanzania adopted the National regulations for Marketing BMS in 1994 under the Food (Control of Quality) Act of 1978 which has been reviewed to incorporate WHO Resolutions on infant feeding*

f) *Hospitals become baby-friendly by implementing the Ten Steps to Successful Breastfeeding*

CHAPTER 11: MONITORING AND EVALUATION

11.1 Importance of monitoring and evaluation for IYCF services

Monitoring helps to identify what is working well (strengths), what is not working well and where there are gaps (weaknesses) so that they can be addressed. Monitoring and evaluation in IYCF services is done to determine whether health care providers are enabled to continually offer quality IYCF services, and whether mothers and care takers are counselled and supported appropriately and effectively. Monitoring and evaluation also helps to determining whether manufacturers, distributors and employers adhere to the legislation that is aimed at protecting breastfeeding. As with other interventions, the first step in developing an M&E system for IYCF is to identify the inputs, processes, outputs, outcomes and impacts to be measured. These are based on the guideline's objectives and the specific to be interventions used to achieve the objectives. The conceptual framework in Figure 8 can be used to identify these stages for specific interventions and shows a framework for monitoring and valuation for IYCF services.

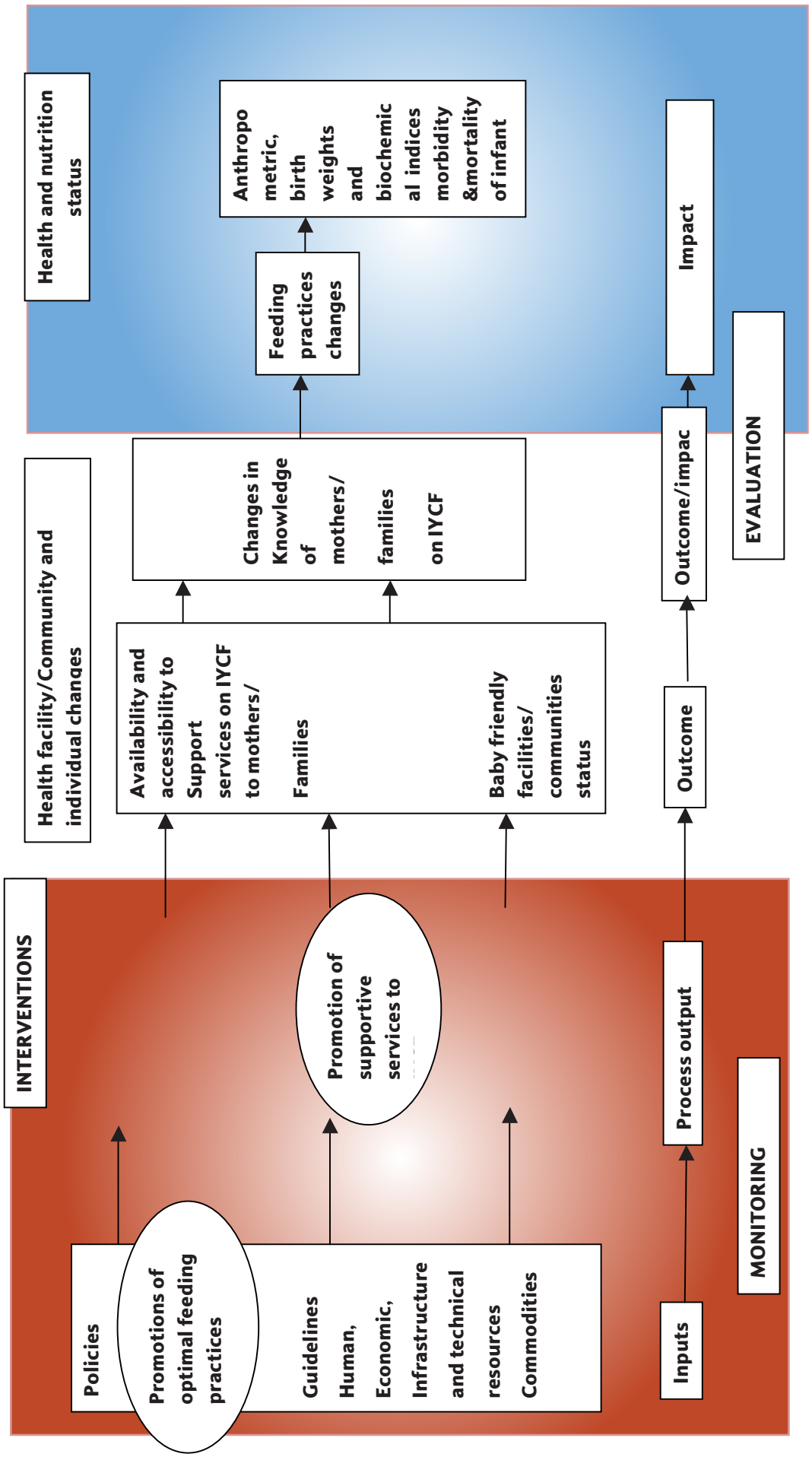


Figure 7: Framework for M&E of Infant and young child feeding services

11.2 Indicators

11.2.1 Basis for indicators

For each input, process, output, outcome and impact to be measured, verifiable and measurable indicators need to be identified. This enables a program to monitor each stage of implementation and identify gaps that may require additional attention or resources. Priority components and indicators to measure will depend on the objectives, interventions, context and information needs.

The indicators identified are based on a review of current practices, the types of challenges IYCN commonly face and they capture critical, measurable aspects of IYCF. Since IYCF activities vary across services, indicators are selected that are applicable to a large number of programs. IYCF indicators require data to be collected from different sources. Indicators for IYCF use or build on information that is already routinely collected at health care facilities and indicators are based on standards of care and operation for the health care services. Another consideration in selecting indicators is the type and number of indicators that can be feasibly integrated into registers and other data collection tools. This guide provides detailed guidance and tools for collecting, interpreting and using data for the core indicators.

More detailed description of the IYCF indicators in the document of Indicators for Assessing Infant and Young Child Feeding Practices by WHO, UNICEF and others which can be found on this link: http://www.who.int/nutrition/publications/infantfeeding/9789241596664/en/index.html

11.3 Core Indicators

11.3.1 Breastfeeding initiation

Early initiation of breastfeeding: Proportion of children born in the last 24 months who were put to the breast within one hour of birth

$$\frac{\textit{Children born in the last 24 months who were put to the breast within 1hr of birth}}{\textit{Children born in the last 24 months}}$$

Notes: This indicator is based on historic recall. The denominator and numerator include living children and deceased children who were born within the past 24 months. It is recommended that the indicator be further disaggregated and reported for (i) live births occurring in the last 12 months; and (ii) live births occurring between the last 12 and 24 months.

11.3.2 Exclusive breastfeeding

Exclusive breastfeeding under 6 months: Proportion of infants 0–5 months of age who are fed exclusively with breast milk

$$\frac{\textit{Infants 0–5 months of age who received only breast milk during the previous day}}{\textit{Infants 0-5 months of age}}$$

11.3.3 Continued breastfeeding

Continued breastfeeding at 1 year: Proportion of children 12–15 months of age who are fed breast milk

$$\frac{\textit{Children 12–15 months of age who received breast milk during the previous day}}{\textit{Children 12–15 months of age}}$$

11.3.4 Introduction of complementary feeding

Introduction of solid, semi-solid or soft foods: Proportion of infants 6–8 months of age who receive solid, semi-solid or soft foods

Infants 6–8 months of age who received solid, semi-solid or soft foods during the previous day
Infants 6–8 months of age

11.3.5 Dietary diversity

Minimum dietary diversity: Proportion of children 6–23 months of age who receive foods from 4 or more food groups

Children 6–23 months of age who received foods from ≥ 4 food groups during the previous day
Children 6–23 months of age

Notes: The 7 foods groups used for tabulation of this indicator are:

1) Grains, roots and tubers
2) Legumes and nuts
3) Dairy products (milk, yogurt, cheese)
4) Flesh foods (meat, fish, poultry and liver/organ meats)
5) Eggs
6) Vitamin-A rich fruits and vegetables
7) Other fruits and vegetables

Consumption of any amount of food from each food group is sufficient to "count", i.e., there is no minimum quantity except if an item is only used as a condiment. The cut-off of at least 4 of the above 7 food groups above was selected because it is associated with better quality diets for both breastfed and non-breastfed children. Consumption of foods from at least 4 food groups on the previous day would mean that in most populations the child had a high likelihood of consuming at least one animal-source food and at least one fruit or vegetable that day, in addition to a staple food (grain, root or tuber).

11.3.6 Meal frequency

Minimum meal frequency: Proportion of breastfed and non-breastfed children 6–23 months of age, who receive solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more.

Breastfed children 6–23 months of age who received solid, semi-solid or soft foods the minimum number of times or more during the previous day
Breastfed children 6–23 months of age

and

Non-breastfed children 6–23 months of age who received solid, semi-solid or soft foods or milk feeds the minimum number of times or more during the previous day
Non-breastfed children 6–23 months of age

Notes: Minimum is defined as:

- 2 times for breastfed infants 6–8 months
- 3 times for breastfed children 9–23 months

- 4 times for non-breastfed children 6–23 months

"Meals" include both meals and snacks (other than trivial amounts), and frequency is based on caregiver report.

11.3.7 Summary of infant and young child feeding indicator

Minimum acceptable diet: Proportion of children 6–23 months of age who receive a minimum acceptable diet (apart from breast milk).

Breastfed children 6–23 months of age who had at least the minimum dietary diversity and the minimum meal frequency during the previous day
Breastfed children 6–23 months of age

and

Non-breastfed children 6–23 months of age who received at least 2 milk feedings and had at least the minimum dietary diversity not including milk feeds and the minimum meal frequency during the previous day
Non-breastfed children 6–23 months of age

Notes: *For breastfed children, see indicators above for "Minimum dietary diversity" and "Minimum meal frequency" definitions. For non-breastfed children, see above for definition of "Minimum meal frequency". The definition of "Minimum dietary diversity" is similar to the definition for "Minimum meal frequency". but milk feeds are excluded from the diversity score for non-breastfed children when calculating "Minimum acceptable diet".*

11.3.8 Consumption of iron-rich or iron-fortified foods

Consumption of iron-rich or iron-fortified foods: Proportion of children 6–23 months of age who receive an iron-rich food or iron-fortified food that is specially designed for infants and young children, or that is fortified in the home.

Children 6–23 months of age who received an iron-rich food or a food that was specially designed for infants and young children and was fortified with iron, or a food that was fortified in the home with a product that included iron during the previous day
Children 6–23 months of age

Notes: *Suitable iron-rich or iron-fortified foods include flesh foods, commercially fortified foods specially designed for infants and young children that contain iron, or foods fortified in the home with a micronutrient powder containing iron or a lipid-based nutrient supplement containing iron.*

11.4 Optional Indicators

Considering the need to limit the number of indicators and quantity of data to be collected to a minimum, the indicators described above are the most critical for population-based assessment and programme evaluation. However, to ensure continuity in monitoring of previously used indicators and recognizing that some programmes may wish to measure additional indicators, the following optional indicators are recommended:

11.4.1 Breastfeeding

Children ever breastfed: Proportion of children born in the last 24 months who were ever breastfed

$$\frac{\text{Children born in the last 24 months who were ever breastfed}}{\text{Children born in the last 24 months}}$$

Notes: *This indicator is based on historic recall. The denominator and numerator include living and deceased children who were born within the past 24 months.*

Continued breastfeeding at 2 years: Proportion of children 20–23 months of age who are fed breast milk

$$\frac{\text{Children 20–23 months of age who received breast milk during the previous day}}{\text{Children 20–23 months of age}}$$

Age-appropriate breastfeeding: Proportion of children 0–23 months of age who are appropriately breastfed.

$$\frac{\text{Infants 0–5 months of age who received only breast milk during the previous day}}{\text{Infants 0–5 months of age}}$$

and

$$\frac{\text{Children 6–23 months of age who received breast milk, as well as solid, semi-solid or soft foods, during the previous day}}{\text{Children 6–23 months of age}}$$

Predominant breastfeeding under 6 months: Proportion of infants 0–5 months of age who are predominantly breastfed

$$\frac{\text{Infants 0–5 months of age who received breast milk as the predominant source of nourishment during the previous day}}{\text{Infants 0–5 months of age}}$$

11.4.1 Duration of breastfeeding

Bottle feeding of infants: Proportion of children 0–23 months of age who are fed with a bottle

$$\frac{\text{Children 0–23 months of age who were fed with a bottle during the previous day}}{\text{Children 0–23 months of age}}$$

Notes: *Information on bottle feeding is useful because of the potential interference of bottle feeding with optimal breastfeeding practices and the association between bottle feeding and increased diarrheal disease morbidity and mortality. Bottles with a nipple are particularly prone to contamination. Included in the numerator of this indicator are children less than 24 months of age who received any food or drink from a bottle with a nipple/teat during the previous day (including breast milk), regardless of whether or not the infant was breastfed.*

11.4.2 Milk feeding frequency for non-breastfed children

Milk feeding frequency for non-breastfed children: Proportion of non-breastfed children 6–23 months of age who receive at least 2 milk feedings

$$\frac{\textit{Non-breastfed children 6–23 months of age who received at least 2 milk feedings during the previous day}}{\textit{Non-breastfed children 6–23 months of age}}$$

Notes: Milk feedings include liquid milk products such as infant formula, cow milk or other animal milk. The specific products to be included need to be defined for each target population, to take into account local milk products that are commonly fed to young children in substantial quantities (e.g. fermented dairy products).

Data for these indicators can be collected from all clients using a census-based approach or from a sample of clients using a random sample approach. Whenever an event is completed, service providers should record the date on a record such as RCHS 1 card or RCHS 4 or register. Health service staff can use this record to determine whether an event has been taken as recommended in the guideline.

11.5 Site, staff and client level indicators

11.5.1 Health facility level

Input Indicators

Input indicators measure the resources that are required for a health facility to provide specific program services. In this context a 'site' is a location where IYCF services are offered and in this guide a site could mean either health facility or community. The following is a list of input and indicators

Input indicators:

- Number of health facilities with national strategy and guidelines on IYCF and breastfeeding policy (BFHI)
- Number of health facilities with training materials, job aids and IEC materials
- Number of health facilities with trained personnel
- Number of health facilities with anthropometric equipment
- Number of health facilities with therapeutic feeds for malnourished children and supplements
- Number of health facilities with counselling rooms

Output indicators

Output indicators measure the number or proportion of health facilities that provide a particular service or training activity. It is recommended that supervisors collect data for health facility-level input and output indicators periodically from every health facility. Data collected at each health facility can be recorded on a supervisor checklist or can be integrated into an existing HMIS that service providers complete. Correct filling in and analysis of results of the infant feeding record are very important because the record allows easy and simple monitoring of infant feeding and practices that promote optimal feeding. One entry should be made for each baby born at the hospital. The record may be needed to be updated, if there are any changes in the baby's status or practices before the baby is discharged. (See appendix XI Infant feeding records)

Output indicators

- Health care facilities offering health education and counselling on IYCF
- Number of health care facilities implementing 10 steps of BFHI
- Number of communities implementing the 10th step for successful breastfeeding
- Number of mother to mother support groups formed
- Number of health facilities implementing the national regulations for marketing of BMS

11.5.2 Staff-level

Process indicators

These indicators enable program managers and supervisors to monitor the extent to which service providers are properly performing their duties in educating clients, counselling growth monitoring, addressing IYCF problems and following up clients to achieve goals. The core indicator focuses on the quality of individual counselling and support because these are critical component of IYCF and the quality of counselling and support varies widely.

To collect data for process indicators of IYCF counselling and support, the data collector must observe individual nutrition counselling sessions. Since it is not possible to observe every counselling session, a random sample is recommended in which a sample of service providers will be observed. The quality of IYCF counselling and support session depends on several key components; it is therefore recommended that the indicator reflect multiple components of IYCF counselling and support session. To collect data for staff level process indicator a checklist of criteria on which to evaluate IYCF counselling and support sessions are attached. (***See Appendix XII Support on optimal feeding performance assessment checklist)***

Process indicators

- Proportion of staff providing quality health education and counselling on IYCF
- Proportion of staff providing quality growth monitoring and promotion services in both heath facilities and community to mothers/families
- Proportion of staff providing quality on-going support to mothers-child after discharge
- Proportion of health care providers enforcing the national regulations for marketing of BMS
- Number of review meetings and advocacy sessions on IYCN conducted

11.5.3 Client-level indicators

In the context of IYCF, client-level indicators include the services received, knowledge gained, practices adopted and physical changes exhibited by clients registered at a site. In collecting data for client level indicators a random sample approach is recommended in which a sample of clients observed. Indicators at the client level consist of output, outcome and impact indicators as follows:

Output indicators

Client-level outputs are the services reaching clients that result from a combination of a service's inputs and processes. Measures broad results achieved through provision of services and goods. Client-level output indicators for IYCF interventions measure the coverage of services provided by a service.

Output Indicators:

- Proportion of mothers/families received health education and counselling on IYCF from health services
- Proportion of facilities and communities declared baby friendly
- Proportion of mothers/families who received follow-up support after discharge
- Proportion of children whose weight was measured and recorded
- Proportion of mothers/families received counselling on growth monitoring and promotion services
- Proportion of mothers/children who received supplementation
- Proportion of malnourished children who received treatment with therapeutic feeds
- Number of employers abiding to the maternity protection rights
- Number of suppliers and distributors implementing the national regulations for marketing of breast milk substitutes and designated products

Outcome indicators

Program outcomes are changes in client knowledge and practice that program activities are expected to generate. Including outcome indicators in a program's M&E system enables program managers and supervisors to evaluate the extent to which the program's services have led to the intended changes in knowledge and practice among clients. Knowledge indicators measure client knowledge of appropriate dietary practices to improve nutritional intake, dietary responses to symptoms and timing of meals to manage food and drug complications. Practice indicators measure consumption of food at recommended frequencies, consumption of an adequately diverse diet, use of recommended nutritional practices to manage symptoms and appropriate hygiene and safe food and water practices

Outcome indicators:

- Proportion of infants put to the breast within 1 hour of birth
- Proportion of infants exclusively breastfed 0–5 months
- Proportion of children 12-15 months breastfed
- Proportion of infants 6-8 months who receive solid, semi-solid or soft foods
- Proportion of children 6-23 months who receive foods from 4 or more food groups
- Proportion of children 6-23 months who receive solid, semi-solid or soft foods – including milk feeds for non-breastfed
- Proportion of children 6-23 months who receive a minimum acceptable diet
- Proportion of children 6-23 months who receive and iron-rich or iron-fortified food

Impact Indicators

Health and nutrition status of infants and young children

- Anthropometric indices (birth weight, wasting, underweight and stunting)
- Biochemical indices (Hb levels, urinary iodine)

Morbidity and mortality of infants and young children.

11.5.4 Progress Reporting

Summary reports are important in monitoring health facility and community based IYCF interventions. Records of mother-child both in health facilities and community should be appropriately documented and kept for the purpose of monitoring the service performance as well as individual mother-child progress. **Appendix XI** summarizes a monthly report based on hospital data sheet. This information should flow from a health facility to the district then to the region and national.

KEY MESSAGES ON MONITORING AND EVALUATION

Monitoring helps to identify what is working well (strengths), what is not working well (weaknesses) so that they are addressed to improve feeding practices and protecting breastfeeding

b) Evaluation is important to determine whether the expected results were achieved using outcome and impact indicators

c) Components to be measured for IYCF monitoring and evaluation fall under inputs, processes, outputs, outcomes and impact. Priority components and indicators to measure will depend on the objectives, interventions, context and information needs

d) The indicators identified are based on a review of current practices, the types of challenges IYCF commonly face and they capture critical, measurable aspects of IYCF

e) There are 11 core indicators under breastfeeding which are used to track the progress of breastfeeding. Data is from various sources which are health facility, staff, and client

f) Descriptions of indicators and how they are measured is organized according to the source of data

g) Records of mother and child in health facilities and community should be appropriately documented and kept for progress report

APPENDICES

APPENDIX I: HOW TO HELP A MOTHER TO POSITION HER BABY

- Greet the mother and ask how breastfeeding is going.
- Observe and assess the mother breastfeeding her child.
- Explain what might help, and ask if she would like you to show her.
- Make sure that she is comfortable and relaxed.
- Sit down yourself in a comfortable, convenient position.
- Explain how to hold her baby, and show her if necessary.
- The four key points are:
    - with his head and body straight;
    - with his face facing her breast, and his nose opposite her nipple;
    - with his body close to her body;
    - Supporting his bottom (if newborn).
- Show her how to support her breast:
    - with her fingers against her chest wall below her breast;
    - with her first finger supporting the breast;
    - with her thumb above
- Her fingers should not be too near the nipple.
- Explain or show her how to help the baby to attach:
    - touch her baby's lips with her nipple;
    - wait until her baby's mouth is opening wide;
    - Move her baby quickly onto her breast, aiming his 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.

APPENDIX II: HOW TO EXPRESS BREAST MILK BY HAND

- Wash her hands thoroughly with running.
- Sit or stand comfortably, and hold the container near her breast.
- Put the thumb on her breast ABOVE the nipple and areola, and her first finger on the breast BELOW the nipple and areola, opposite the thumb. She supports the breast with her other fingers.
- Press her thumb and first finger slightly inwards towards the chest wall. She should avoid pressing too far or she may block the milk ducts.
- Press her breast behind the nipple and areola between her finger and thumb. She must press on the lactiferous sinuses beneath the areola Sometimes in a lactating breast it is possible to feel the sinuses. They are like pods, or peanuts. If she can feel them, she can press on them.
- Press and release, press and release. This should not hurt - if it hurts, the technique is wrong.
- At first no milk may come, but after pressing a few times, milk starts to drip out. It may flow in streams if the oxytocin reflex is active.
- Press the areola in the same way from the SIDES, to make sure that milk is expressed from all segments of the breast.
- Avoid rubbing or sliding her fingers along the skin. The movement of the fingers should be more like rolling.
- Avoid squeezing the nipple itself. Pressing or pulling the nipple cannot express the milk. It is the same as the baby sucking only the nipple.
- Express one breast for at least 3 - 5 minutes until the flow slows; then express the other side; and then repeat both sides. She can use either hand for both breast, and change when they tire.
- Expressing breast milk adequately takes 20 - 30 minutes, especially in the first few days when only a little milk may be produced. It is important not to try to express in a shorter time.

APPENDIX III: WAYS TO ENRICH CHILD'S FOODS

Fats and Oils

- Oils and fats are concentrated sources of energy. A little oil or fat, such as one-half teaspoon, added to the child's bowl of food, gives extra energy in a small volume. It also helps in the absorption of fat-soluble vitamins (vitamin A, D, E and K). The addition of fatty/oily foods also makes thicker porridge or other staple softer and easier to eat.
- Essential fatty acids are needed for a child's growing brain and eyes, and for healthy blood vessels. These essential fatty acids are present in breast milk. For children over six months old who are not breastfed, good sources of essential fatty acids are fish, avocado, nut pastes and vegetable oil. Animal-source foods also provide essential fatty acids
- Fats and oils can also be used for frying foods, or spread on foods such as bread. The fat or oil should be fresh as it can go bad with storage.
- If a large amount of oil is added the child may become full before they have eaten all the food. This means they may get the energy from the oil but less of the other nutrients because they eat less food overall.
- If a child is growing well, extra oil is usually not needed. The child who takes too much oil or fried foods can become overweight.

Sugary foods

- Sugar, sugary foods and honey are energy-rich and can be added to foods in small quantities to increase the energy concentration. However, these foods do not contain any nutrients.
- Caregivers need to watch that sugary foods do not replace other foods in the diet. For example, sweets, sweet biscuits and sugary drinks should not replace a meal for a young child.

Fermentation and Germination

Fermented porridge

Fermented porridge can be made in two ways - the grain can be mixed with water and set to ferment overnight or longer before cooking, or the grain and water is cooked into porridge and then fermented. Sometimes some of a previous batch of the fermented porridge (starter) is added to speed up the process of fermentation. Porridge made from germinated grain can also be fermented.

The advantages of using fermented porridge are

- It is less thick than plain porridge so more grain/flour can be used for the same amount of water. This means each cupful of porridge contains more energy and nutrients than plain (unfermented) porridge.
- Children may prefer the taste of 'sour' porridge and so eat more.

The absorption of iron and some other minerals is better from the soured porridge. **Germinated or sprouted Flour**

It is more difficult for harmful bacteria to grow in soured porridge, so it can be kept for a day or two. Cereal or legume seeds are soaked in water and then left to sprout. The grains are then dried (sometimes toasted) and ground into flour. A family can do this at home but it is more common to buy flour already germinated. Mixed flours that include germinated (or malted) flour in addition to the main flour may be available in the store.

For families using germinated grain, the following ways can be used to make a thicker and more nutritious porridge:

- Use this germinated flour to make porridge. This type of flour does not thicken much during cooking so less water can be used.
- Add a pinch of the germinated flour to cooked thick porridge that has cooled a little bit.
- The porridge should be boiled again for a few minutes after adding the germinated flour. This addition will make the porridge softer and easier for the child to eat.
- Germination also helps the absorption of iron

APPENDIX IV: ATTACHMENT TO MOTHER'S BREAST

- Much of the areola and the underlying tissues are into his mouth.
- The lactiferous sinuses are included in these underlying tissues.
- He has stretched the breast tissue out to form a long `teat'.
- The nipple forms only about one-third of the `teat'.
- The baby is suckling from the breast, not the nipple.

Position of the baby's tongue:

- His tongue is forward, over his lower gums, and beneath the lactiferous sinuses.
- His tongue is cupped round the `teat' of breast tissue.





Signs that you can see clearly when a baby is well attached to breast are:

- There is more areola above the baby's top lip than below the bottom lip
- His mouth is quite wide open
- His lower lip is turned outwards
- His chin is almost touching the breast.
- These signs show that the baby is well attached to the breast.
- In addition, the baby is close to the breast and facing it.
- The baby is breathing quite well without his mother holding her breast back with her finger.

APPENDIX V: FEEDING HISTORY JOB AID

Age of child

Particular concerns about feeding of child

1) **Feeding**
   Type of milk (breast milk, formula, cow milk, other)
   Frequency of milk feeds
   Length of breastfeeds/quantity of other milks
   Night feeds
   Other foods in addition to milk (when started, what, frequency)
   Other fluids in addition to milk (when started, what, frequency)
   Feeding difficulties (breastfeeding/other feeding)
   Illnesses

2) **Pregnancy, birth, early feeds (where applicable)**
   Antenatal care
   Feeding discussed at antenatal care
   Delivery experience
   Rooming-in
   Postnatal help with feeding

3) **Mother's condition and family planning**
   Age
   Health – including nutrition and medications
   Breast health
   Family planning

4) **Previous infant feeding experience**
   Number of previous babies
   How many breastfed and for how long
   If breastfed – exclusive or mixed-fed
   Other feeding experiences

5) **Family and social situation**
   Work situation
   Economic situation
   Family's attitude to infant feeding practices

APPENDIX VI: HOW TO FEED A BABY AFTER MONTHS

How to

Feed a Baby
After 6 Months



Feed more as the baby grows



Begin to feed at 6 months
Type of food:
Soft porridge, well mashed food
How often:
2 times each day
How much:
Feed 2 to 3 tablespoons at each meal.



Age 7–8 months
Type of food:
Mashed food
How often:
3 times each day
How much:
Feed at least two-thirds (2/3) cup at each meal. (A cup is 250 ml)

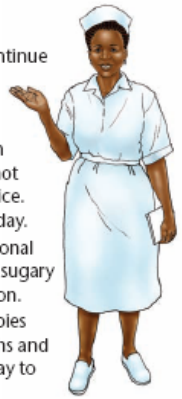


Age 9–11 months
Type of food:
Finely chopped or mashed food and foods that baby can pick up
How often:
3 times each day plus 1 snack
How much:
Feed at least three-quarters (3/4) cup at each meal. (A cup is 250 ml)



Age 12–24 months
Type of food:
Family foods, chopped or mashed if necessary
How often:
3 times each day plus 2 snacks
How much:
Feed at least 1 full cup at each meal. (A cup is 250 ml)

Things to remember



- Between 6 months and 2 years babies continue to need breast milk each day, in addition to nutritious foods, for energy and good health. If the baby is not breastfed, he or she will need 2 cups (500 ml) of milk each day up to 2 years and beyond. If you do not have milk, consult your counselor for advice. Meanwhile, give 1 to 2 extra meals each day.
- Avoid giving a baby drinks with no nutritional value, such as tea, coffee, soda and other sugary or colored drinks. Give juices in moderation.
- Fresh animal milks and water given to babies should be boiled. Babies who are 6 months and older should be given clean water each day to satisfy their thirst.
- Always feed the baby using a clean open cup. Avoid using bottles and nipples. They are difficult to clean and can cause your baby to become sick.
- Weight gain is a sign of good health and nutrition. Continue to take your child to the health care clinic for regular check-ups, immunizations and to monitor growth and development.
- During illness give the baby small frequent meals and more fluids, including breast milk or other milk. Encourage the baby to eat a variety of his or her favorite soft foods. After illness feed more food and more often than usual.

This brochure was adapted from materials developed originally by WHO/AED. Technical support for the development of this brochure was provided by the Quality Assurance Project (QAP), managed by University Research Co., LLC (URC), under USAID Contract Number GPH-C-00-02-00004-00, and with financial support from the President's Emergency Plan for AIDS Relief (PEPFAR). July 2007.

After 6 Months

What do I need to know?



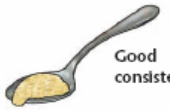
- It is important for mothers to practice exclusive breast-feeding until their babies are 6 months old. This means that mothers and other caregivers should not give babies any other milks, foods or liquids, not even sips of water.
- After 6 months breast milk alone is not enough. Babies need to gradually start eating a variety of foods to continue growing well.
- Breast milk continues to be an important part of the diet until the baby is at least 2 years.
- When feeding a baby between 6 and 12 months old always give milk first before giving other foods.
- If a mother is HIV-positive, it is important for her to consult a health care provider for counseling on her infant feeding options, such as safer breastfeeding or the use of other suitable milks.
- Babies should be fed more frequently because they have very small stomachs and can only eat a little food at a time.

When your baby first starts to eat

- Give a baby 1 or 2 tablespoons of a new soft food twice each day. Gradually increase the consistency, amount and variety of food in the baby's diet. Food given to babies should be pureed at first, but not be too thin or runny.

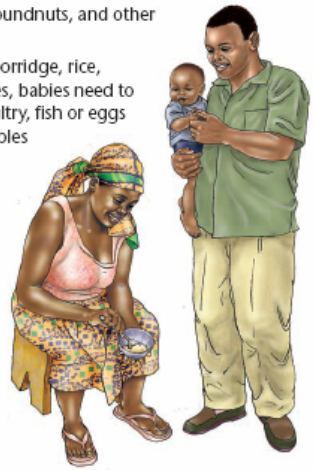


Too thin or runny



Good consistency

- Infants should gradually start to eat mashed and semi-solid foods as they become used to eating and chewing different foods.
- Enrich the baby's porridge and mashed foods with milk, roasted and mashed groundnuts, and other nuts and seeds.
- Besides the staple foods like porridge, rice, mashed bananas and potatoes, babies need to eat some legumes, meat, poultry, fish or eggs every day. Dark green vegetables and fruits provide important nutrients for a baby.
- Fats, oils and sugar can be added to baby's food in moderation. They improve the energy content of the diet. Fats also improve the absorption of some vitamins and the taste of foods.
- Use of germinated cereals (power flour) and fermentation improves food quality and digestion.



Safe preparation and storage of food for babies



- Mothers and other caregivers should wash their hands with clean running water and soap before preparing food, and before and after feeding a baby. Hand washing is important after changing nappies or going to the toilet. Baby's hands should be washed also.



- All bowls, cups and utensils should be washed well with clean water and soap and should be kept covered before using. Avoid using bottles and nipples. They are difficult to clean and can cause your baby to become sick.



- Prepare food in a clean area and keep it covered to protect it. Babies should have their own cup and bowl. Serve food immediately after preparation. Left-over food should not be given to the baby later.



- Babies should gradually learn to feed themselves. An adult or an older child should encourage the baby to eat enough food and ensure that the food remains clean.

APPENDIX VII: BREASTFEED OBSERVATION JOB AIDS

Breastfeed Observation Job Aid

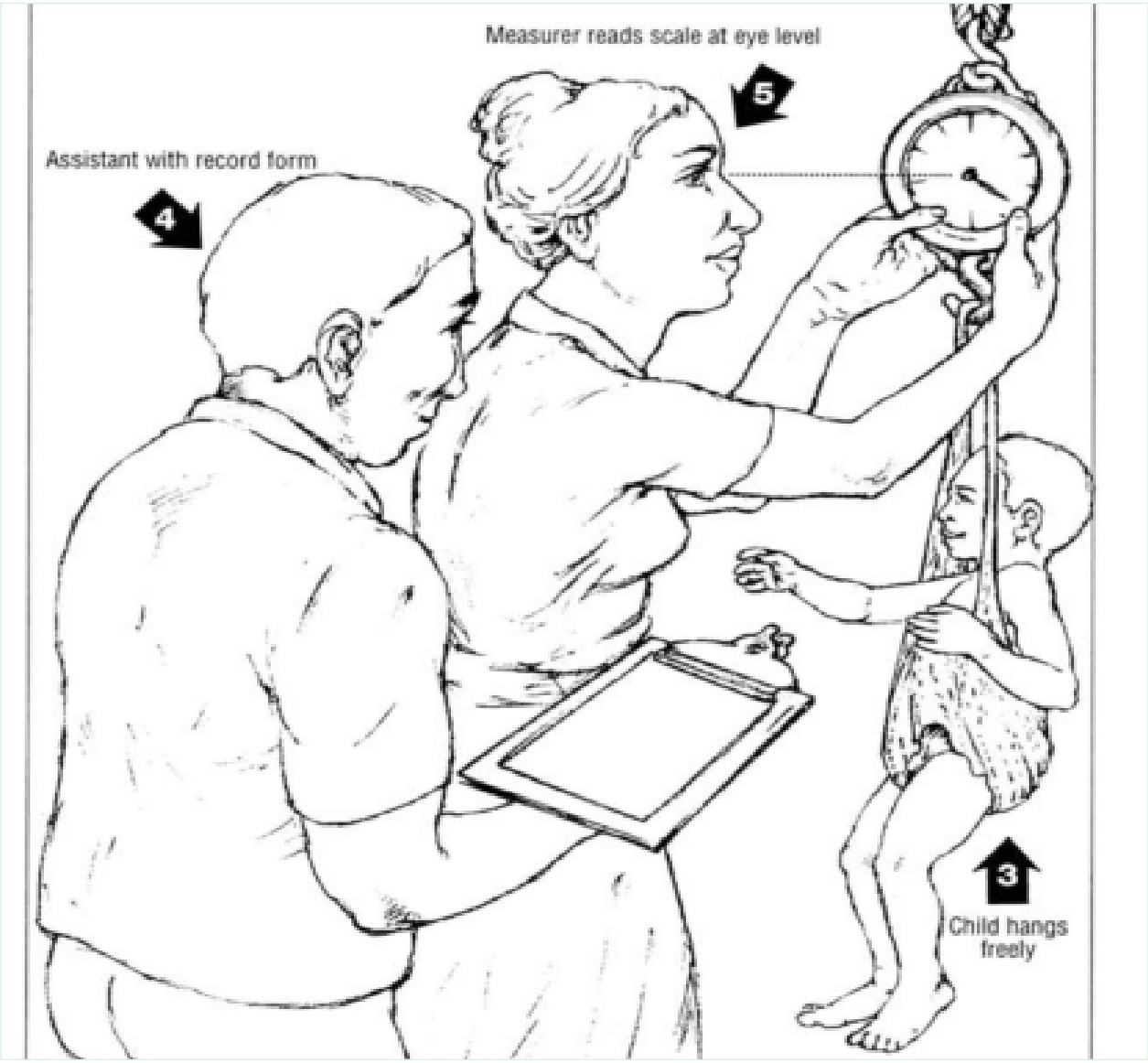
Mother's name..... Date.....

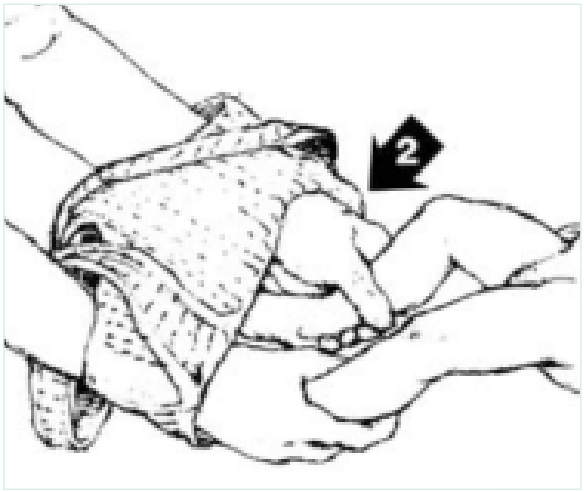
Baby's name..... Baby's age.....

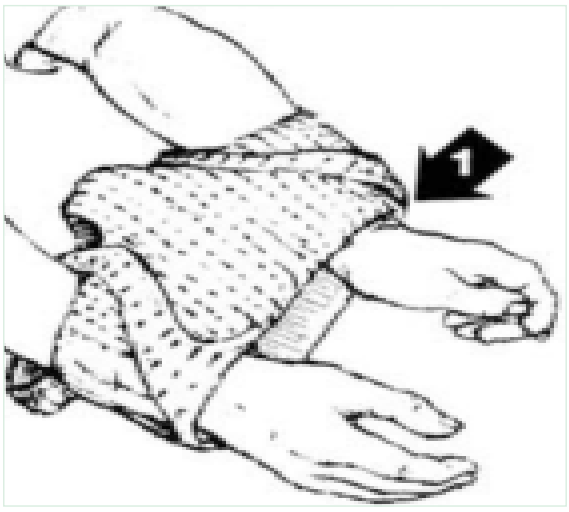
Signs that breastfeeding is going well:	Signs of possible difficulty:
GENERAL	
Mother:	*Mother:*
☐ Mother looks healthy	☐ Mother looks ill or depressed
☐ Mother relaxed and comfortable	☐ Mother looks tense and uncomfortable
☐ Signs of bonding between mother and baby	☐ No mother/baby eye contact
Baby:	*Baby:*
☐ Baby looks healthy	☐ Baby looks sleepy or ill
☐ Baby calm and relaxed	☐ Baby is restless or crying
☐ Baby reaches or roots for breast if hungry	☐ Baby does not reach or root
BREASTS	
☐ Breasts look healthy	☐ Breasts look red, swollen, or sore
☐ No pain or discomfort	☐ Breast or nipple painful
☐ Breast well supported with fingers away from nipple	☐ Breasts held with fingers on areola
☐ Nipple stands out, protractile	☐ Nipple flat, not protractile
BABY'S POSITION	
☐ Baby's head and body in line	☐ Baby's neck and head twisted to feed
☐ Baby held close to mother's body	☐ Baby not held close
☐ Baby's whole body supported	☐ Baby supported by head and neck
☐ Baby approaches breast, nose opposite nipple	☐ Baby approaches breast, lower lip to nipple
BABY'S ATTACHMENT	
☐ More areola seen above baby's top lip	☐ More areola seen below bottom lip
☐ Baby's mouth open wide	☐ Baby's mouth not open wide
☐ Lower lip turned outwards	☐ Lips pointing forward or turned in
☐ Baby's chin touches breast	☐ Baby's chin not touching breast
SUCKLING	
☐ Slow, deep sucks with pauses	☐ Rapid shallow sucks
☐ Cheeks round when suckling	☐ Cheeks pulled in when suckling
☐ Baby releases breast when finished	☐ Mother takes baby off the breast
☐ Mother notices signs of oxytocin reflex	☐ No signs of oxytocin reflex noticed

APPENDIX VIII: TAKING ANTHROPOMETRIC MEASUREMENT

Weighing a child

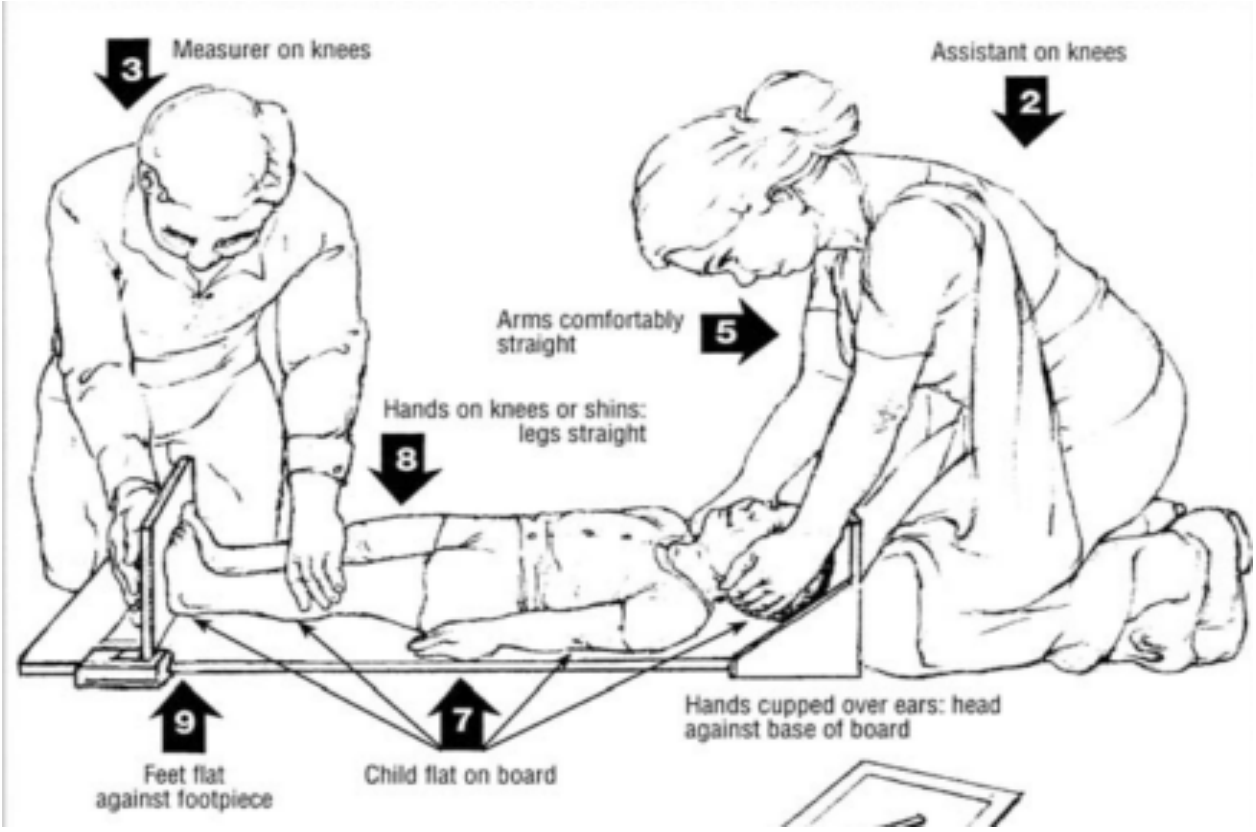






- Describe to the mother the procedure for the measurement of weight.
- Undress the child
- Set up the scale with the stick held on the shoulders of two people. The dial must be at **eye level**.
- Hang the trousers and reset the balance to **zero (0)** with the dress.
- Unhook the Salter trousers and put the child in it.
- Watch out for falls and be prepared to catch falling children!
- One of the measurers should weigh the child and ensure that nothing is touching the child.
- The Team leader reads the measure to the **nearest 0.1kg** (ex. 12.3kg) **at eye level**.
- The Team leader records the weight in the appropriate box of the anthropometric sheet **FORM 1**.
- Before moving on to the next child, attach the Salter trousers to the scale and reset the balance to **zero (0).**

Measuring length of a child

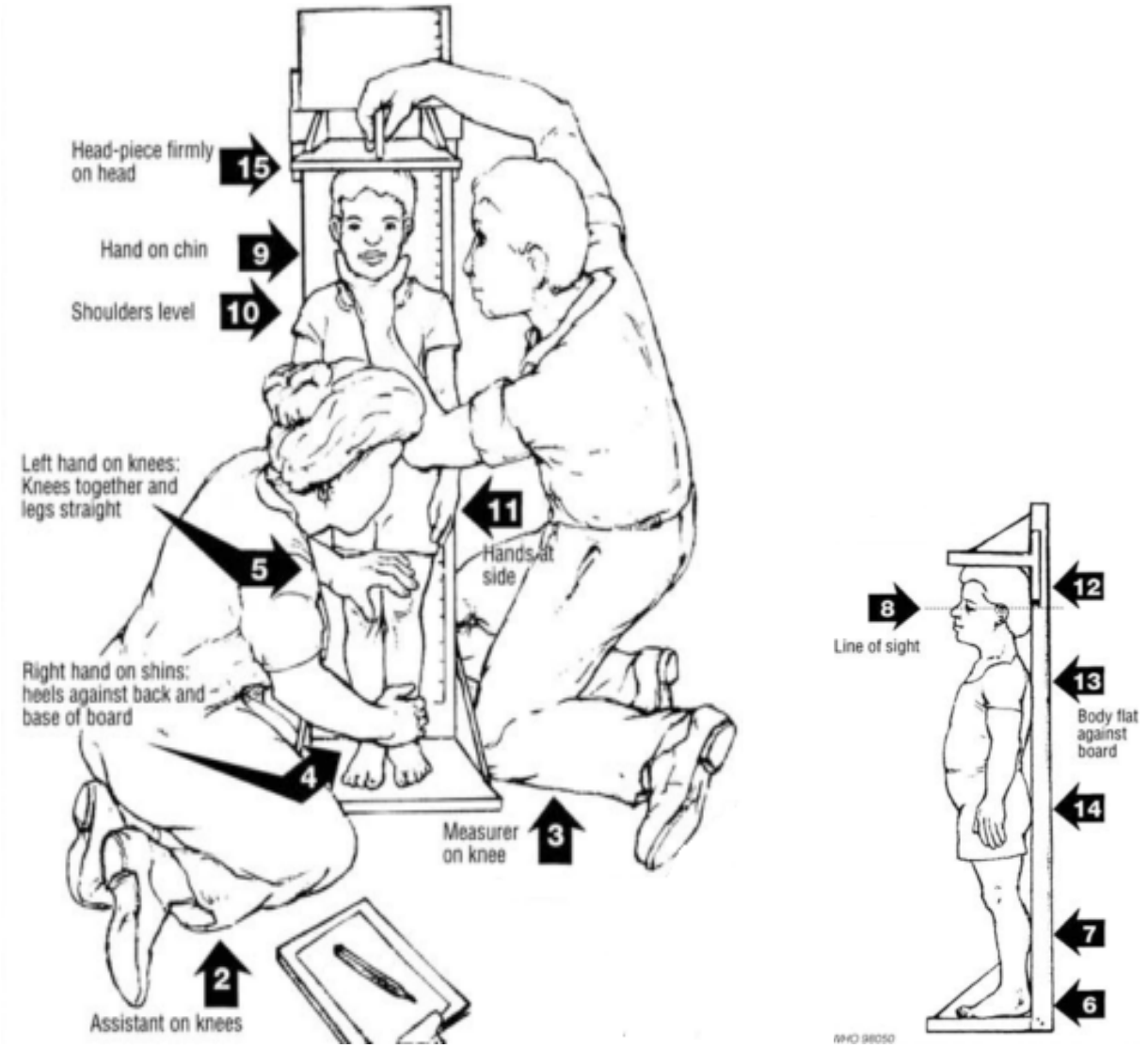


- Describe to the mother the procedure for the measurement of height.
- Install the measuring board.
- Remove the child's shoes and any knots or hairpin. .
- Gently place the child on the board with their head facing the fixed vertical side, and the heels facing the mobile part of the measuring apparatus.
- Ensure that the child is placed exactly in the middle of the board, is looking directly up or directly in front of him/her when standing vertically.
- One measurer should firmly hold the child's head against the base of the board and the other measurer should hold the knees to keep the legs straight.

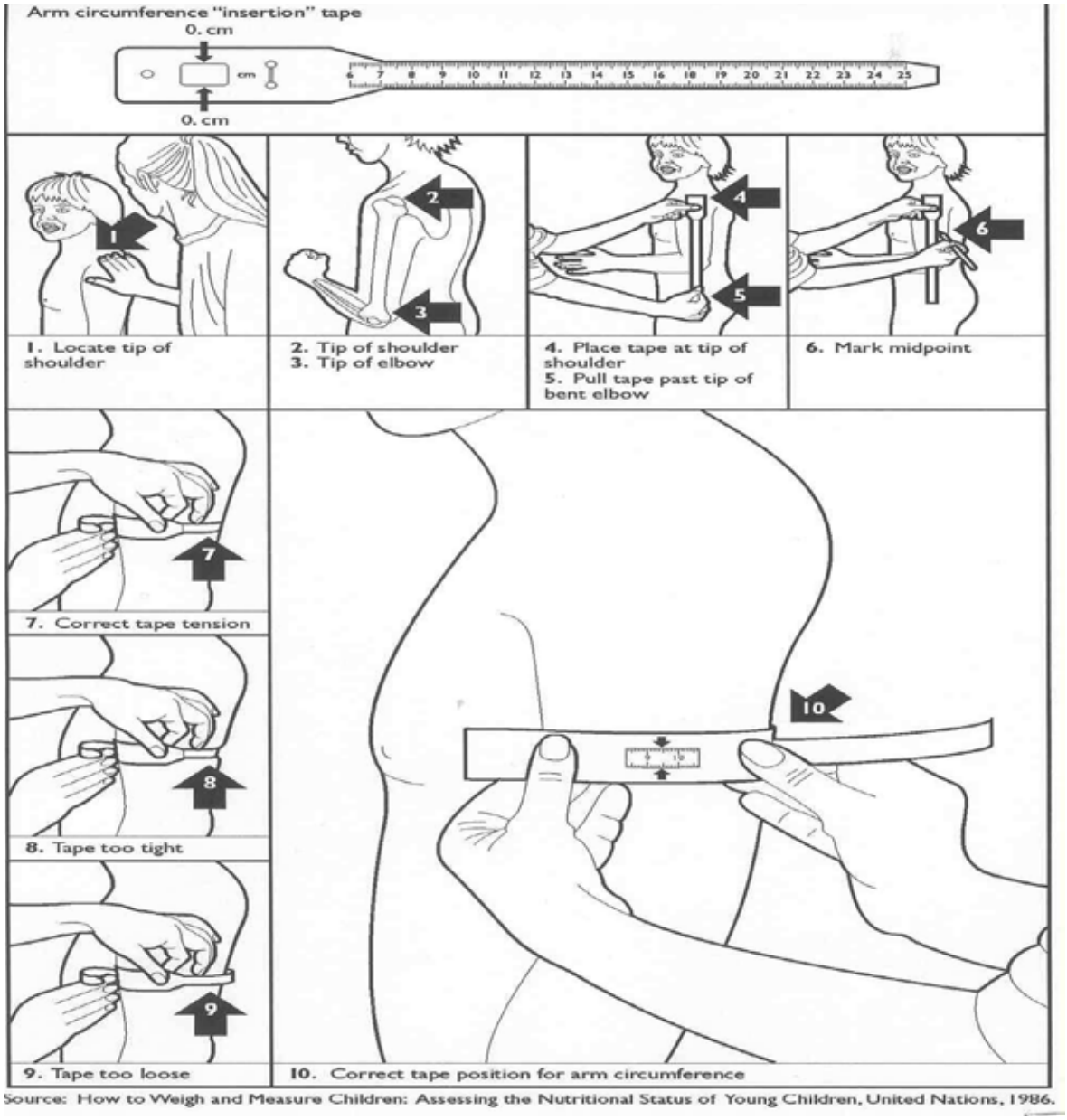
It is very important to ensure that the child's toes are not pushing against the moving parts of the scale.

How to measure height

The measurer measures to the **nearest 0.1 cm**



Measuring MUAC



- Describe to the mother the procedure for the measurement of MUAC.
- If possible, the child should stand erect and sideways to the measurer.
- Bend the child's left arm at 90 degrees to the body.
- Place a measuring tape along the upper arm and find the mid-point of the upper arm. The mid-point is between the tip of the shoulder and the elbow
- Mark the mid-upper arm point with a pen and let the left arm hand relaxed at the side of the body.
- Place the MUAC measuring tape on the midway point.
- Pull the tape until it fits securely around the arm. The tape should not be left too slack nor pulled too tightly.
- The measurer reads the measurement at the window of the tape.
- Check it and records it in mm

APPENDIX IX: CRITERIA FOR SUCCESSFUL IMPLEMENTATION OF BFHI

Step	Criteria
1. Have a written breastfeeding guidelines that is routinely communicated to all health care staff.	The health facility has a written breastfeeding or infant feeding guidelines that addresses all 10 Steps of the BFHI and protects breastfeeding by adhering to the National regulations of Marketing of Breast milk Substitutes and the National Regulations for Marketing of BMS. It also requires that HIV-positive mothers receive counselling on infant feeding and guidance on selecting options likely to be suitable for their situations. The policy is available so that all staffs that take care of mothers and babies can refer to it. Summaries of the policy covering, at minimum, the Ten Steps, the Code, National Regulations for Marketing of BMS and subsequent WHA resolutions, and support for HIV-positive mothers, are visibly posted in all areas of the health care facility which serve pregnant women, mothers, infants, and/or children. These areas include the antenatal care, labour and delivery areas, maternity wards and rooms, all infant care areas, including well baby observation areas (if there are any), and any infant special care units. The summaries are displayed in Kiswahili and written with wording most commonly understood by mothers and staff.
2. Train all health care staff in skills necessary to implement the guidelines.	Out of the randomly selected clinical staff members: ○ At least 80 % confirm that they have received the described training or, if they have been working in the maternity services less than 6 months, have, at minimum, received orientation on the guidelines and their roles in implementing it ○ At least 80 % are able to answer 4 out of 5 questions on breastfeeding support and promotion correctly ○ At least 80 % can describe two issues that should be discussed with a pregnant woman if she indicates that she is considering giving her baby something other than breast milk Out of the randomly selected non-clinical staff members At least 70 % confirm that they have received orientation and/or training concerning breastfeeding since they started working at the facility At least 70 % are able to describe at least one reason why breastfeeding is important, At least 70 % are able to mention one possible practice in maternity services that would support breastfeeding. At least 70 % are able to mention at least one thing they can do to support women so they can feed their babies well.
3. Inform all pregnant women about the benefits and management of breastfeeding.	Out of the randomly selected pregnant women in their third trimester who have come for at least two antenatal visits: ○ At least 70% confirm that a staff member has talked with them or offered a group talk that includes information on breastfeeding ○ At least 70 % are able to adequately describe what was discussed about two of the following topics: importance of skin-to-skin contact, rooming-in, and risks of giving other liquids and foods while breastfeeding in the first 6 months.

4. Help mothers initiate breastfeeding within one-hour of birth. This Step is now interpreted as: Place babies in skin-to-skin contact with their mothers immediately following birth for at least an hour and encourage mothers to recognize when their babies are ready to breastfeed, offering help if needed.	Out of the randomly selected mothers with vaginal births or caesarean sections without general anaesthesia in the maternity wards: o At least 80 % confirm that their babies were placed in skin-to-skin contact with them immediately or within five minutes after birth and that this contact continued for at least an hour, unless there were medically justifiable reasons for delayed contact. o At least 80 % also confirm that they were encouraged to look for signs for when their babies were ready to breastfeed during this first period of contact and offered help, if needed. (The baby should not be forced to breastfeed but, rather, supported to do so when ready.) If any of the randomly selected mothers have had caesarean deliveries with general anaesthesia, at least 50 % should report that their babies were placed in skin-to-skin contact with them as soon as the mothers were responsive and alert, with the same procedures followed. At least 80 % of the randomly selected mothers with babies in special care report that they have had a chance to hold their babies skin-to-skin or, if not, the staff could provide justifiable reasons why they could not.
5. Show mothers how to breastfeed and how to maintain lactation, even if they should be separated from their infants	Observations of staff demonstrating how to safely prepare and feed breast milk substitutes confirm that in 75 % of the cases, the demonstrations were accurate and complete, and the mothers were asked to give "return demonstrations". Out of the randomly selected clinical staff members: o At least 80 % report that they teach mothers how to position and attach their babies for breastfeeding and are able to describe or demonstrate correct techniques for both, or can describe to whom to refer mothers for this advice. o At least 80 % report that they teach mothers how to hand express breast milk and can describe or demonstrate an acceptable technique for this, or can describe to whom to refer mothers for this advice. o At least 80 % can describe how non-breastfeeding mothers can be assisted to safely prepare their feeds, or to whom they can be referred for this advice. Out of the randomly selected mothers with babies in special care: o At least 80 % of those who are breastfeeding report that nursing staff offered further assistance with breastfeeding the next time they fed their babies or within six hours of birth (or when they were able to respond). o At least 80 % of those who are breastfeeding are able to demonstrate or describe correct positioning, attachment and suckling o At least 80 % of those who are breastfeeding report that they were shown how to express their milk by hand or were given written information and told where they could get help if needed o At least 80 % of the mothers who have decided not to breastfeed report that they have been offered help in preparing and giving their babies feeds, can describe the advice they were given, and have been asked to prepare feeds themselves, after being shown how.

	Out of the randomly selected mothers with babies in special care: ○ At least 80 % of those who are breastfeeding or intending to do so report that they have been offered help to start their breast milk coming and to keep up the supply within 6 hours of their babies' births ○ At least 80 % of those breastfeeding or intending to do so report that they have been shown how to express their breast milk by hand. ○ At least 80 % of those breastfeeding or intending to do so can adequately describe and demonstrate how they were shown to express their breast milk by hand at least 80 % of those breastfeeding or intending to do so report that they have been told they need to breastfeed or express their milk 6 times (Check) or more every 24 hours to keep up their supply
6. Give newborn infants no food or drink other than breast milk, unless medically indicated	Hospital data indicate that at least 75 % of the full-term babies delivered in the last year have been exclusively breastfed or exclusively fed expressed breast milk from birth to discharge, or, if not, that there were documented medical reasons or fully informed choices. Observations in the postpartum wards/rooms and any well baby observation areas show that at least 80 % of the babies are being fed only breast milk or there are acceptable medical reasons or informed choices for receiving something else. ○ At least 80 % of the randomly selected clinical staff members can describe two types of information that should be discussed with mothers who indicate they are considering feeding breast milk substitutes ○ At least 80 % of the randomly selected mothers report that their babies had received only breast milk or, if they had received anything else, it was either for acceptable medical reasons, described by the staff, or as a result of fully informed choices. ○ At least 80 % of the randomly selected mothers who have decided not to breastfeed report that the staff discussed with them the feeding options and helped them to decide what were suitable in their situations. ○ At least 80 % of the randomly selected mothers with babies in special care who have decided not to breastfeed report that staff have talked with them about risks and benefits of feeding options.
7.Practice rooming-in - allow mothers and infants to remain together – 24 hours a day	Observations in the postpartum wards and any well-baby observation areas and discussions with mothers and staff confirm that at least 80 % of the mothers and babies are rooming-in or, if not, have justifiable reasons for not being together. At least 80 % of the randomly selected mothers report that their babies have stayed with them in their rooms/beds since they were born, or, if not, there were justifiable reasons.
8. Encourage breastfeeding on demand.	Out of the randomly selected mothers: ○ At least 80 % report that they have been told how to recognize when their babies are hungry and can describe at least two feeding cues. ○ At least 80 % report that they have been advised to feed their babies as often and for as long as the babies want or something similar.

9. Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.	Observations in the postpartum wards/rooms and any well baby observation areas indicate that at least 80 % of the breastfeeding babies observed are not using bottles, teats or other similar devices with or without teats, if they are, their mothers have been informed of the risks. o At least 80 % of the randomly selected breastfeeding mothers report that, to the best of their knowledge, their infants have not been fed using bottles with artificial teats (nipples) or similar devices with or without teats. o At least 80 % of the randomly selected mothers report that, to the best of their knowledge, their infants have not sucked on pacifiers
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.	The head/director of maternity services reports that: mothers are given information on where they can get support if they need help with feeding their babies after returning home, and the head/director can also mention at least one source of information the facility fosters the establishment of and/or coordinates with mother support groups and other community services that provide breastfeeding/infant feeding support to mothers, and this same staff member can describe at least one way this is done. The staff encourages mothers and their babies to be seen soon after discharge (preferably 2-4 days after birth and again the second week) at the facility or in the community by a skilled breastfeeding support person who can assess feeding and give any support needed and can describe an appropriate referral system and adequate timing for the visits. A review of documents indicates that printed information is distributed to mothers before discharge, if appropriate, on how and where mothers can find help on feeding their infants after returning home and includes information on at least one type of help available. Out of the randomly selected mothers at least 80 % report that they have been given information on how to get help from the facility or how to contact support groups, peer counsellors or other community health services if they have questions about feeding their babies after return home and can describe at least one type of help that is available

Criteria - HIV and infant feeding

The Incharge of maternity services reports that:

- The hospital has policies and procedures that seem adequate concerning providing or referring pregnant women for testing and counselling for HIV, counselling women concerning PMTCT of HIV, providing individual, private counselling for pregnant women and mothers who are HIV positive on infant feeding options, and insuring confidentiality.
- Mothers who are HIV positive or concerned that they are at risk are referred to community support services for HIV testing and infant feeding counselling, if they exist.

A review of the infant feeding policy indicates that it requires that HIV-positive mothers receive counselling, including information about the risks and benefits of various infant feeding options and specific guidance in selecting the options for their situations, supporting them in their choices.

A review of the curriculum on HIV and infant feeding and training records indicates that training is provided for appropriate and is sufficient, given the percentage of HIV positive women and the staff needed to provide support for pregnant women and mothers related to HIV and infant feeding. The training covers basic facts on:

- Basic facts of the risks of HIV transmission during pregnancy, labour and delivery and breastfeeding and its prevention
- Importance of testing and counselling for HIV
- Local availability of feeding options
- Facilities/provision for counselling HIV positive women on advantages and disadvantages of different feeding options; assisting them in formula feeding (Note: may involve referrals to infant feeding counsellors)
- How to assist HIV positive mothers who have decided to breastfeed; including how to transition to replacement feeds at the appropriate time
- The dangers of mixed feeding
- How to minimize the likelihood that a mother whose status is unknown or HIV negative will be influenced to replacement feed

A review of the antenatal information indicates that it covers the important topics on this issue. (These include the routes by which HIV-infected women can pass the infection to their infants, the approximate proportion of infants that will (and will not) be infected by breastfeeding; the importance of counselling and testing for HIV and where to get it; and the importance of HIV positive women making informed infant feeding choices and where they can get the needed counselling).

A review of documents indicates that printed material is available, if appropriate, on how to implement various feeding options and is distributed to or discussed with HIV positive mothers before discharge. It includes information on how to exclusively replacement feed, how to exclusively breastfeed, how to stop breastfeeding when appropriate, and the dangers of mixed feeding.

Out of the randomly selected clinical staff members:

- At least 80% can describe at least one measure that can be taken to maintain confidentiality and privacy of HIV positive pregnant women and mothers
- At least 80% are able to mention at least two policies or procedures that help prevent transmission of HIV from an HIV positive mother to her infant during feeding within the first six months
- At least 80% are able to describe two issues that should be discussed when counselling an HIV positive mother who is deciding how to feed her baby

Out of the randomly selected pregnant women who are in their third trimester and have had at least two antenatal visits or are in the antenatal in-patient unit:

- At least 70% report that a staff member has talked with them or given a talk about HIV/AIDS and pregnancy
- At least 70% report that the staff has told them that a woman who is HIV-positive can pass the HIV infection to her baby.
- At least 70% can describe at least one thing the staff told them about why testing and counselling for HIV is important for pregnant women
- At least 70% can describe at least one thing the staff told them about what a HIV positive mother needs to consider when deciding how to feed her baby.

APPENDIX X: COMPLIANCE WITH THE NATIONAL REGULATIONS OF MARKETING OF BREAST MILK SUBSTITUTES AND ENFORCEMENT OF THE NATIONAL REGULATIONS FOR MARKETING OF BMS

Criteria – National regulations compliance

The head/director of maternity services reports that:

- No employees of manufacturers or distributors of breast milk substitutes, bottles, teats or pacifiers have any direct or indirect contact with pregnant women or mothers
- The hospital does not receive free gifts, non-scientific literature, materials or equipment, money, or support for in-service education or events from manufacturers or distributors of breast milk substitutes, bottles, teats or pacifiers
- No pregnant women, mothers or their families are given marketing materials or samples or gift packs by the facility that include breast milk substitutes, bottles/teats, pacifiers, other infant feeding equipment or coupons.

A review of records and receipts indicates that any breast milk substitutes, including special formulas and other supplies, are purchased by the health care facility for the wholesale price or more.

Observations in the antenatal and maternity services and other areas where nutritionists and dieticians work indicate that no materials that promote breast milk substitutes, bottles, teats or dummies, or other designated products as per National Regulations for Marketing of BMS, are displayed or distributed to mothers, pregnant women, or staff. Infant formula cans and prepared bottles are kept out of view. At least 80 % of the randomly selected clinical staff members can give two reasons why it is important not to give free samples from formula companies to mothers.

APPENDIX XI: HOSPITAL INFANT FEEDING RECORDS

Infant Feeding Record

Name of health facility: _____

[Record information daily or when changes or problems occur and at discharge. Use additional pages if needed.] Recorder: _____

Baby's ID	Date of delivery	Type of delivery 1 = vag 2 = c-sec w/o gen 3 = c-sec w/ gen	Skin-to-skin contact and offer of BF help[1] 1 = meets criterion 2 = does not meet criterion *[See below.]*	Breast-feeding 1 = Yes 2 = No	Supplements [2]/ Replacement feeds [3] What 0 = None 1 = Water 2 = Formula 3 = Home prep 4 = Other (list)	Why [4]	How baby fed 1 = Breast 2 = Bottle 3 = Cup 4 = Other (spec.)	Baby's location 1 = Rooming-in[5] 2 = Nursery/obs. Room 3 = Special care unit 4 = Other (list)	Any problems related to positioning or attachment or infant feeding	Actions taken	Date of discharge

1. **Skin-to-skin contact and offer of breastfeeding help:** Mother and baby together skin-to-skin from within 5 minutes of birth or recovery for at least an hour and mother shown how to tell when baby ready for breastfeeding and offered help if needed (unless delay in contact is justified).
2. **Supplements:** Any liquids/foods besides breast milk
3. **Replacement feeds:** Feeding infants who are receiving no breastmilk with a diet that provides the nutrients they need until the age when they can be fully fed on family foods.
4. **Why:** 1. Premature baby, 2. Baby with severe hypoglycaemia, 3. Baby with inborn error of metabolism, 4. Baby with acute water loss (i.e., phototherapy for jaundice), 5. Severe maternal illness, 6. Mother on medication, 7.Mother HIV positive and replacements feeds are AFASS; 8. Mother's fully informed choice, 9. Other (specify):
5. **Definition of rooming-in:** Mother and baby stay in the same room 24 hours a day, staying together since birth and not separated unless for justified reason

APPENDIX XII: OPTIMAL FEEDING PERFORMANCE ASSESSMENT CHECKLIST

Health facility name:_____**Date:**_____**Clinic**: Well child/Sick child (Circle appropriate clinic)
Name(s) of assessor(s):

_____

INSTRUCTIONS:

- Put a tick **(√)** if answer is yes; a cross **(X)** is answer is no; or leave blank (-) if action is not applicable
- Interview/observe only caregivers with children aged 0-24 months:

SECTION A: BEHAVIOURS AND ACTIONS

1. OPTIMAL BREASTFEEDING

Specific actions for optimal breastfeeding	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total
Assesses/asks about child breastfeeding practices																					
Counselled on exclusive breastfeeding for the first six months																					
Counselled on breastfeeding day and night (at least 10 times a day)																					

Counselled on correct positioning and attachment during breastfeeding																					
Counselled on empting one breast before switching/shifting to another																					
Counselled on increasing breastfeeding during and after illness																					
Counselled on continued breastfeeding for two years and beyond																					

2. OPTIMAL COMPLEMENTARY FEEDING

Specific actions for optimal complementary feeding	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total
Assesses/ask for complementary child feeding practices																					
Counselled on timely initiation of complementary feeds at six months																					
Counselled on increasing the number feeds per day with age																					
Counselled on increasing the density, quality and quantity of feeds with age																					
Counselled on diversifying the diet using a variety of foods (especially those available in the community)																					
Counselled on giving extra meals during and after illness (1 extra meal per day for 2 weeks)																					
Advised to interact with the child while feeding (responsive feeding)																					
Advised to maintain good hygiene practices (during preparation and feeding)																					

SECTION B: BEHAVIOUR CHANGE COMMUNICATION ACTIONS (Listening, learning and counselling skills)

Specific behaviour change communication actions	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total
Greets mother/care giver and establishes rapport																					
Asks open ended questions																					
Uses non-verbal communication, responses and gestures that show interest																					
Reflects back on what mother/care giver says																					
Avoids using expressions/ words that sound judgmental																					
Check understanding of mother/care giver on what has been discussed																					
Reminds																					

mother/care giver at the end of the session about behaviour counselled on and agreement reached to overcome problem facing the child																				

SECTION C: GROWTH MONITORING AND PROMOTION

Specific growth monitoring and promotion action	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**Total**
Scale calibrated before weighing each child																					
Child weighed with minimum clothing																					
Child weight recorded on child health card																					
Child weight communicated to caregiver																					
Growth promotion counseling provided to mother/caregiver based on current weight or weight trend observed																					

APPENDIX XIII PREPARATION OF HOME - MODIFIED ANIMAL MILK FOR FEEDING INFANTS

To feed a baby fresh cow milk as safely as possible, it is necessary to make sure that there is always a safe and reliable source of cow milk that has not been diluted with water.

It is best to only prepare enough fresh cow milk for one feeding at a time. Do not use a thermos to keep cow milk as it spoils quickly (use a thermos only for water). Make sure that there is always clean water to mix with the fresh cow milk. If possible, prepare the water needed for the whole day. Bring the water to a rolling boil for at least 2 minutes and then pour into a thermos or clean covered container.

Cow milk is lacking in many important nutrients needed for a baby under 6 months of age, and so babies need additional micronutrients or multi-vitamin syrup to replace these nutrients.

Until a baby is 6 months old, boiled water and sugar need to be added to the fresh cow milk before giving it to a baby. Table 1 indicates how much water and sugar to add. As a general rule, two parts of cow's milk should be added to one part water. This means twice as much cow's milk is needed as water.

Table 1: Amount of cow milk, water and sugar needed for each feed

Baby's age (month)	Cow milk needed	Water needed	Sugar needed
Birth to 1 month	40 ml	20 ml	1 level teaspoon (4gm)
1 to 2 months	60 ml	30 ml	1 rounded teaspoon (6gm)
3 to 4 months	80 ml	40 ml	2 level teaspoons (8gm)
5 to 6 months	100 ml	50 ml	2 rounded teaspoons (10gm)

As babies grow older, they need more of the modified cow milk. Table 2 below indicates how many times a day the baby should be fed during the first 6 months, how much the baby will need for each feed, and the total amount of milk needed each day. Some babies may eat more frequently than others, and some babies may eat less frequently, so this is just a guideline.

Table 2 Amount of modified cow milk needed each day

Baby's age	Feedings each day	Milk each feeding	Total milk each day
Birth to 1 month	8	60 ml	480 ml
1 to 2 months	7	90 ml	630 ml
2 to 4 months	6	120 ml	720 ml
4 to 6 months	6	150 ml	900 ml

When the baby turns 6 months old, do not dilute the cow milk with water or add sugar. At 6 months, the baby needs to begin eating other clean and nutritious foods in order to grow strong and stay healthy.

Steps to prepare modified cow milk

- Always wash the feeding cups, measuring cups, spoons and other utensils used to prepare and feed cow milk to the baby. It is best to wash them with clean water and soap
- It is always best to boil the utensils to make sure that they are clean.
- Always wash hands with clean running water and soap before preparing the modified cow milk and feeding it to the baby.
- Organize all of the utensils that are needed.
- Measure both the fresh cow milk and the boiled water using a special cup or container that is marked to show how much milk and water to use.

Preparing and feeding milk

- Measure the sugar using a special spoon. Add the sugar to the milk and water mixture. The number of spoons of sugar that are needed depends on the size of the spoon and the age of the child.
- Put the milk, boiled water and sugar together in a clean pot. Bring this mixture to a boil and then remove it immediately from the heat. Keep it covered while it cools.

A child fed home-modified cow's milk will need additional micronutrients. Consult a trained counsellor about giving the baby micronutrients or multi-vitamin syrup.

- Always feed the baby using a clean open cup. Even a newborn baby learns quickly how to drink from a cup. Avoid using bottles and nipples. They are difficult to clean and can cause the baby to become sick.
- If the baby does not drink all of the cow milk during a feeding, use it in a cooked meal. Giving a baby left-over milk can cause the baby to become sick.

Things to remember

- The instructions for mixing fresh cow milk need to be followed exactly. Adding too much or too little water and sugar can be dangerous for the baby's health. The baby also needs micronutrients or multi-vitamin syrup to stay healthy.
- Women who are HIV-positive should not breastfeed their babies once they have started to give either cow milk or infant formula. This greatly increases the chances of passing HIV to the baby.
- The baby will need only modified cow milk during the first 6 months of life, without any additional foods, liquids, or water. At 6 months, the baby needs clean and nutritious complementary foods while continuing to drink undiluted cow milk.

APPENDIX XIX: INSTRUCTIONS ON HOW TO HEAT TREAT BREAST MILK

Flash heating is a way to destroy the HIV in breast milk while retaining the important nutrients and protective agents in the breast milk. This allows an HIV-positive mother to continue providing breast milk to her baby.

How to heat treat breast milk:

- Always wash all utensils that are used to express and heat treat the breast milk with clean water and soap. It is best to boil these utensils after washing to make sure that they are clean.
- Put all the expressed breast milk in a heat resistant glass (not plastic) jar. The amount of milk should be between 50 ml and 150 ml. If there is more milk, divide it into 2 jars.
- Place the jar of milk in a small pan of water. Make sure the water is about two fingers above the level of milk so that all the milk will be heated well.
- Heat the water on a very hot fire or on the highest level of the stove until it reaches a rolling boil (when the water has large bubbles). Stay close by because this should only take a few minutes. Leaving the water to boil too long will damage some of the nutrients in the milk.
- Remove the jar of milk from the boiling water immediately after the water comes to a boil. Place the jar in a container of cool water, or let it stand alone to cool until it reaches room temperature.
- Protect the milk as it cools and during storage by placing a clean lid or small plate on it.
- The baby can be safely fed this heated milk within 1 hour.
- Always feed the baby using a clean open cup. Even a newborn baby learns quickly how to drink from a cup. Avoid using bottles and nipples. They are difficult to clean and may make your baby sick

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