



REPUBLIC OF UGANDA
Ministry of Health

MATERNAL, INFANT, YOUNG CHILD, AND ADOLESCENT NUTRITION

A TRAINING COURSE FOR HEALTH FACILITY STAFF

PARTICIPANTS' MANUAL

November 2020

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FOREWORD

Maternal, Infant, Young Children and Adolescent Nutrition is a major factor in determining the well-being of the whole Ugandan population. Yet we know that malnutrition in Uganda is affecting most segments of the population. Although the most recent Uganda Demographic and Health Surveys (2006, 2011, 2016), show some improvement in key nutrition indicators for young children and their mothers, more needs to be done to meet national and global targets for nutrition. In order to make further strides forward, the Government of Uganda has prioritized the nutrition of mothers, infants, young children and adolescents as reflected in the Maternal, Infant, young Child and Adolescent Nutrition (MIYCAN) Guidelines, 2021 and MIYCAN Action Plans, 2021-2025.

Implementation of the Guidelines and Action Plans requires that key players have the correct knowledge, skills, and approaches to improve nutrition of infants, young children, adolescents and women of reproductive age including pregnant and lactating women. For this reason, the MIYCAN training packages have been developed for use at Health Facility and Community Levels. Each of the training packages includes both Facilitators and Participants training manuals.

The Health Facility training package aims to build the capacity of district level health managers and health facility service providers to counsel women, adolescents and caregivers of children under-5 on appropriate maternal, infant and young child and adolescent nutrition practices. This Health Facility Facilitators' Manual in conjunction with the corresponding Participants' Manual and accompanying IEC materials will go a long way to meet the training needs in this area.

The Ministry of Health calls upon all health staff, district local governments, partners and training institutions to make full use of these materials.

SIGNED

ACKNOWLEDGMENT

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Sincere gratitude is extended to all development partners, NGOs and health workers who participated in multiple technical working groups, review committees and field testing of these materials.

Special recognition is made to the Nutrition Division and the Division of Health Promotion and Education of the Ministry of Health, and also members of the Maternal and Child Health Cluster, Senior Management Committee, Health Policy Advisory Committee and Top Management Committee of the Ministry of Health for their technical input in finalizing the current MIYCAN training packages.

ACRONYMS

ANC	Antenatal Care
ART	Anti-Retroviral Treatment
ARV	Antiretroviral
BFCI	Baby Friendly Community Initiative
BFHI	Baby Friendly Health Facility Initiative
BMI	Body Mass Index
BMS	Breastmilk Substitutes
CHD	Coronary Heart Disease
ECD	Early Childhood Development
EID	Early infant diagnosis of HIV
AFATVAH	Age group, Frequency, Amount, Thickness, Variety, Active feeding, Hygiene
FE/FO	First Expiry, First Out
HAZ	Height for Age Z-score
HCT	HIV Counselling and Testing
HFA	Height for Age
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
IFA	Iron/Folic Acid
IMAM	Integrated Management of Acute Malnutrition
IMNCI	Integrated Management of Neonatal and Childhood Illnesses
INR	Integrated Nutrition Register
IPT	Intermittent Preventive Treatment of Malaria
IYCF	Infant and Young Children Feeding
MAM	Moderate Acute Malnutrition
MCH	Maternal and Child Health
MI	Micronutrient Initiative
MIYCAN	Maternal, Infant, Young Child, and Adolescent Nutrition
MoH	Ministry of Health
MUAC	Mid Upper Arm Circumference
NCD	Non-Communicable Disease
NGOs	Non-Governmental Organizations
NMS	National Medical Stores
OPD	Outpatient Department
PNC	Post Natal Care
SAM	Severe Acute Malnutrition
SD	Standard Deviation
SP	Sulphadoxine/Pyrimethamine
UNICEF	United Nation Children's Fund
VACS	Vitamin A Capsule Supplementation
WAZ	Weight for Age Z score
WFA	Weight for Age
WFH	Weight for Height
WHO	World Health Organization
WHZ	Weight for height Z-score
WRA	Women of Reproductive Age

Introduction to the course

The Maternal, Infant, Young Child, and Adolescent Nutrition (MIYCAN) guidelines and action plan 2020/21-2025/26 have been adopted by Uganda in recognition of the critical role of nutrition in the health and well-being of women, mothers and children, who are indispensable segments of the population. One of the important interventions in implementation is capacity building to empower key players to support the MIYCAN.

Course objectives

The main objective of this training, therefore, is to equip health workers with the knowledge and skills to support MIYCAN implementation.

The specific objectives are to:

1. Equip participants with basic knowledge of the MYCAN guidelines and action plan 2020/21-2025/26
2. Enhance participants' knowledge, skills, and perceptions on nutrition.
3. Empower participants health workers with the knowledge and skills to deliver integrated maternal and adolescent nutrition services at all contact points.
4. Prepare participants to support mothers and families to optimally feed infants and young children in all situations.
5. Equipping participants with knowledge and skills so that they can play a meaningful role in the battle against malnutrition inn the MIYCAN target population.
6. Equip participants with basic knowledge and skills to strengthen systems in their workplaces at all levels for quality MIYCAN interventions.

Duration of the course

This training will take six (6) working days. It is intended that every health facility worker who has direct patient care responsibility for mothers, infants and young children, adolescent girls will attend the course.

As participants go through the training, they should take note of the changes they will need to make at their health facilities. These can then be fed into realistic action plans which are achievable.

Arrangement of the course

The training consists of a theoretical as well as a clinical practical part at a nearby health facility. The clinical practices and food demonstration will allow participants to practice what they are learning during the training.

A variety of training methods will be employed. These include lecturing, brainstorming, plenary and group discussion, power-point presentations, written exercises, role plays, demonstrations, and optional videos.

Course materials provided include the participants' manual. Other materials like MIYCAN counselling cards, laminated reference cards, various forms, and checklists, will be provided if available. The Participants' manual contains all the basic information you need to take from the training, and you do not need to make detailed notes during the sessions. Keep your manual after the course and use it as a source of reference.

INTRODUCTORY MODULE

OVERVIEW OF MIYCAN IN UGANDA

The MIYCAN strategy aims to accelerate implementation of key interventions to improve, protect and promote optimal maternal, infant, young child, and adolescent nutrition practices to achieve improved health, well-being and survival of women and children in Uganda. The life-course approach is key in ensuring the effective an intergenerational effect of the MIYCAN interventions. The MIYCAN strategy is intended for use by all nutrition stakeholders working at different levels of the health systems, national, district and community levels, including hospitals and health facilities offering maternity and newborn services. The Ministry of Health will coordinate implementation and monitor progress towards achieving recommended MIYCAN interventions in Uganda.

Learning objective.

By the end of the introductory module, Participants will be able to:

- 1) Describe the Nutrition Situation in Uganda
- 2) Describe the Goal, Scope, platform and recommended practices for MIYCAN

Background to MIYCAN

The government of Uganda is cognizant of the critical role of appropriate nutrition to the health and well-being of its population and particularly the associated contribution to the socio-economic development of the country. More importantly is the vulnerable group comprising women of reproductive age, infants, young children and adolescents.

The Ministry of health recently revised, updated and consolidated the guidelines on Maternal, Infant, Young child and adolescent nutrition (MIYCAN) as a holistic package. The focus on Maternal, Infant, Young child and adolescent nutrition (MIYCAN) is based on the comprehensive interplay of nutrition in these vulnerable groups in a form of an intergeneration cycle. The MIYCAN approach is based on the fact that the best start in life begins with good nutrition in the first 1,000 days and thereafter it is experienced across the life cycle i.e. through young child, adolescent then back to the woman of reproductive age to complete the cycle. Recommended nutrition interventions should be sustained across the cycle to achieve appropriate MIYCAN status.

The Nutrition Situation of women, adolescent and children under five-year of age in Uganda

Infant & Young Child Nutrition

The UDHS 2016⁹ report that 9.6% of all babies are born with a low birth weight (weighing less than 2.5kg). 29% of the children of 6 – 59 months are stunted from 33% in 2011, 11% are underweight from 14% in 2011, 4% wasted and 4% overweight, with a slightly higher prevalence among the males compared to females (Figure 2). Regional variations have been noted in malnutrition trends as well as child feeding practices. Regions of Karamoja (35.2%), West Nile, a region that hosts refugee populations (33.9%), Acholi (30.6%) and Lango

(22.3%) have some of the highest prevalence rates for stunting as shown in figure 3 below. In 2017, stunting levels in refugee settlements, varies between 16% to 33%.⁸

Infant and young child feeding (IYCF) practices have remained suboptimal throughout the country. Only 66% of children are initiated breastfeeding within the first hour of life and only 66% exclusively breastfed.⁹ Continued breastfeeding drops to 43.2% by the age of 2 years.⁹ Complementary feeding practices are even much worrying with only 15% of children 6-23 months consuming a minimum acceptable diet. Rates of anaemia are also alarming, affecting half of children under 5 (53%).⁹

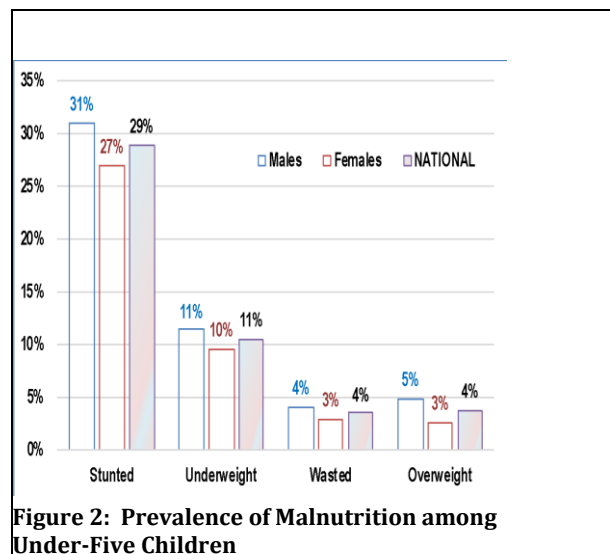


Figure 2: Prevalence of Malnutrition among Under-Five Children

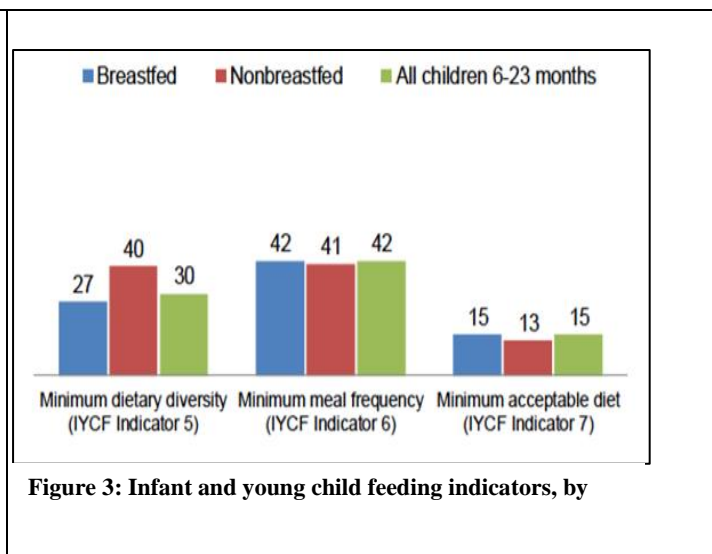


Figure 3: Infant and young child feeding indicators, by

Adolescent Nutrition

According to UDHS, 2016, one out of every three adolescents in the country (32%) are stunted. On the other hand, 6.5% of all adolescents in the country are underweight, while 6.8% are overweight, with 1% being obese.⁹ Teenagers who become pregnant are more likely to have low birth weight babies, and in Uganda 25% of women age 15-19 had begun childbearing in 2016.⁹ In Uganda, nearly 50% of adolescents are married by age 18 and 15% are married by age 15 and this increases the risk of adverse pregnancy and birth outcomes and exacerbates the vicious cycle of malnutrition. The UDHS 2016 also reported anaemia prevalence of 32.9% among females aged 15 – 19 years, compared to 26.0% among males of the same age.

Maternal Nutrition

There has been a decline over the ten-year period, in the proportion of thin women 15 – 49 years old from 12% to 9% while those who are overweight and obese increased from 17% to 24% (Figure 4).⁹ Anaemia, associated with increased maternal mortality, poor birth outcomes and reduced work productivity, is prevalent among 32% of the women 15 – 49 years old, which is public health problem.⁹

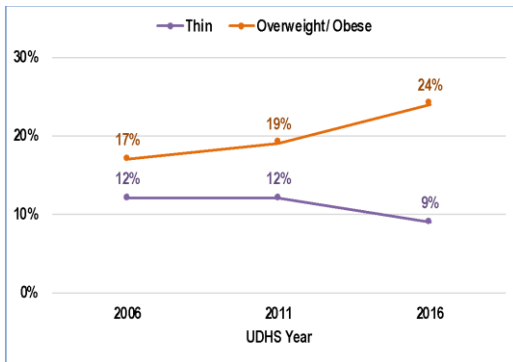


Figure 4: Trend in Nutritional Status of Women 15 – 49 Years Old
 Source: Uganda Demographic and Health Survey 2016

Key Findings

- **Nutritional status of children:** Twenty-nine percent of Ugandan children age 6-59 months are stunted (short for their age), 4% are wasted (thin for their height), 11% are underweight (thin for their age), and 4% are overweight (heavy for their height).
- **Breastfeeding:** Almost all (98%) children born in the 2 years before the survey were breastfed at some point; two-thirds (66%) of children under age 6 months are exclusively breastfed.
- **Minimum acceptable diet:** Only 15% of children age 6-23 months were fed a minimum acceptable diet in the 24 hours before the survey.
- **Anaemia:** Half (53%) of children age 6-59 months are anaemic. One-third (32%) of women and 16% of men age 15-49 are anaemic.
- **Obesity:** Twenty-four percent of women and 9% of men age 15-49 are overweight or obese.
- **Salt iodisation:** Almost all (99%) households with tested salt have iodised salt.

The Scope of the MIYCAN Strategy

Children	Women of childbearing age (15 – 49 years)	Adolescent girls and mothers
<ul style="list-style-type: none"> • 0 – 5 months of age • 6 – 23 months of age • 24-59 months of age 	<ul style="list-style-type: none"> • Non pregnant/non lactating • Pregnant women • Mother of infants 0- 23 months old 	<ul style="list-style-type: none"> • 10 – 15 years old • 15 – 19 years old

Goal

- To reduce all forms of malnutrition in children under five years of age, adolescent girls, pregnant and lactating women in Uganda by 2025.

Purpose

- These guidelines will support health care providers, programme managers, and stakeholders, in health and nutrition, and other relevant sectors in the provision of nutrition care and support services with focus on the mothers, infants, children, and adolescents.

Objectives

- To provide guidance to health and nutrition service providers at all levels in the protection, promotion, and support for appropriate maternal, infant and young child, and adolescent nutrition.

Specific objectives:

- Improve knowledge of health service providers at all levels to respond to the nutritional needs of mothers, infants, children, and adolescents
- Strengthen integration of nutrition interventions for mothers, infants, young children, and adolescents within existing health care delivery systems and across other relevant sectors and support services in the community.

MIYCAN Platforms

MIYCAN can be delivered at different platforms including:

- 1) Health facility,
- 2) Community,
- 3) ECD centres,
- 4) Adolescent platforms,
- 5) Schools,
- 6) Livelihood and agriculture platforms and
- 7) Social protection Platforms.

MODULE 1

BASICS OF NUTRITION

Introduction

In order to understand nutrition, one needs to be familiar with certain terms and concepts. This module focusses on key terms used in nutrition, importance of nutrition for health, nutritional requirements, determining nutritional status of individuals, as well as provision of care and support.

Learning objectives

By the end of the Module participants should be able to:

1.1	Explain key concepts of nutrition	60 minutes
1.2	Discuss causes, consequences, and prevention of malnutrition	60 minutes
1.3	Demonstrate ability to carry out nutrition assessment	200 minutes
1.4	Communication and Counselling skills	135 minutes

Total time	455 minutes
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Session 1.1 Key concepts of Nutrition

This session presents general notions which are common to the nutrition field, including key terms used in nutrition, importance of nutrition, food sources of specific nutrients.

Learning objectives

By the end of the session, participants should be able to:

- Define key nutrition terms
- Explain the importance of nutrition for health
- Describe essential nutrients needed by the body and their roles.
- Discuss the sources of specific nutrients

I. Key Nutrition Related Terms

This topic aims at orienting participants on the terms commonly used in nutrition.

Nutrition is the sum of all processes involved in the intake, assimilation and utilization of proper amounts of nutrients to maintain health, well-being and productivity or the process by which organism ingests, digests, absorbs, transports, and utilizes nutrients and disposes of their end products.

Food	is any substance solid/semi solid/ liquid taken into the body to provide one or more of the following functions: a) Provide energy, b) Promote growth, development & repair of cells/ tissues and c) Protect the body against infections
Nutrients	are the substances in food that the body uses to function properly. Nutrients are divided into macronutrients and micronutrients.
Macronutrients	are nutrients needed by the body in relatively large quantities (many grams per day and include carbohydrates, fats, and proteins.
Micronutrients	are nutrients needed by the body in very small quantities (usually less than 1 gram per day) and include vitamins and minerals.
Metabolic process	is when the body ingests, assimilates, and utilizes the nutrients in food to meet its needs for macronutrients and micronutrients i.e. the body's physical and chemical process of breaking down food and converting it into a useful form of energy.
Energy	is essential for maintenance of the body's functions and daily activities. The ability to metabolize food may vary from person to person and may be affected by illness or disease. Balancing the body's ability to metabolize food with an appropriate quantity of nutrients and food types will help ensure good health

Each person processes and uses nutrients differently. The body responds either positively or negatively when it absorbs a nutrient or group of nutrients. The response affects the body's condition and health status.

The body's response to nutrients and the subsequent outcome is called nutritional status.

The amount and type of food and drink a person eats is called the diet. A nutritious or balanced diet includes a variety of foods and the proper nutrients in the correct amounts and combinations to meet the body's functional needs.

II. Importance of Nutrition

Adequate nutrition is required for:

- Developing, growing, maintaining, replacing, and repairing cells and tissues
- Resisting, fighting infection and recovering from illness
- Producing energy, warmth, movement, and work
- Carrying out chemical processes such as digestion

A person with poor nutrition is at increased risk of:

- Deficient growth and development

- Illness and infection
- Death
- Decreased ability to work, learn, and perform in school

III. Essential Nutrients required by the Body

Given that the body does not synthesize all the nutrients it needs, a person must consume an adequate diet that includes a variety of foods that provide the right balance of energy and nutrients for physical activity, growth, development and health.

Macronutrients: are nutrients needed by the body in large quantities and include carbohydrates, fats and proteins. These include macronutrients (carbohydrates, fat, and proteins) and micronutrients (vitamins and minerals), as well as water.

Micronutrients: Micronutrients are nutrients needed by the body in very small amounts and include vitamins and minerals

	Description	Sources
Macronutrients		
Carbohydrates	<p>include starches, fibre, and sugars and are the primary source of energy in most diets, fuelling physical activity and basic body functions.</p> <p>Although sweet foods such as sugar, jam, cakes, and sugary drinks are a source of carbohydrates, they should be consumed minimally because they do not provide any other nutrients and may increase risk of overweight.</p>	<p>CEREALS/Grains (e.g., rice, millet, maize, sorghum, wheat),</p> <p>Roots/tubers (e.g., Cassava, sweet potatoes, Irish potatoes, Yams</p> <p>Starchy fruits and vegetables (e.g., matooke, plantain) are rich in energy from carbohydrates.</p>
Proteins	<p>Body-building foods and are required for growth and development, maintenance, and repair of tissues.</p>	<p>Animal sources include meat, fish, poultry, dairy products, and eggs.</p> <p>Plant sources include beans and peas, Gnuts, simsim</p>
Fats,	<ul style="list-style-type: none"> • Also known as Oil/lipids, are derived from both animal and plant sources. Fats are rich in energy. • They build body cells, support brain development of infants, help body processes, and facilitate the absorption and use of fat-soluble vitamins A, D, E, and K. • Fats should be consumed in small quantities by adolescents and adults. 	<p>Vegetable oils (Sunflower oil, simsim oil, gnut oil, soy oil, shearnut oil etc)</p> <p>Animal fat (Ghee, butter)</p> <p>Processed oil (Margarine)</p>

<p>Fiber</p> <p>Dietary fiber Fiber is the indigestible parts of plant foods that helps keep our digestive systems healthy</p>	<p>Fibre is important for our digestive health and regular bowel movements.</p> <p>Fiber also helps you feel fuller for longer, can improve cholesterol and blood sugar levels and can assist in preventing some diseases such as diabetes, heart disease and bowel cancer.</p>	<p>Eating a variety of plant-based foods will help you get enough fiber each day. This includes wholegrain, whole meal and/or high fiber varieties of grain-based foods like bread and pasta, rice, oats, quinoa, barley, polenta and buckwheat, fruits, vegetables, cereals, nuts, and seeds</p>
<p>Micronutrients</p>		
<p>Micronutrients are nutrients needed by the body in very small amounts and include vitamins and minerals.</p>	<p>Vitamins are organic compounds that perform specific metabolic functions in the body. There are two forms of vitamins:</p> <p>Fat-soluble vitamins are stored by the body and require dietary fat to be absorbed. They include vitamins A, D, E, and K. Fat-soluble vitamins are necessary for development and maintenance of body tissues and their functions, e.g., eyes (vitamin A), bones (vitamin D), muscles, blood clotting (vitamin K), protection of cells (vitamin E), synthesis of enzymes, and absorption of essential nutrients.</p>	<p>Dietary sources of fat-soluble vitamins include:</p> <p>Vitamin A: red and orange fruits and vegetables (e.g., carrots, peppers, pumpkin, mango, papaya), dark green leafy vegetables (e.g., sukuma wiki), liver, fish, and fortified dairy products, margarine, and oils</p> <p>Vitamin D: fortified dairy products, oily fish. The body also synthesizes vitamin D through exposure to the sun</p> <p>Vitamin E: vegetable oils, nuts, and seeds</p> <p>Vitamin K: green leafy vegetables and vegetable oils</p>
	<p>Water-soluble vitamins are not stored in the body and must be consumed regularly. They include vitamins C (ascorbic acid), B1 (thiamine), B2 (riboflavin), B3 (niacin), B6 (pyridoxine), and B12 (cobalamin), as well as pantothenic acid and folic acid. Their functions include releasing energy, supporting utilisation of macronutrients, and synthesizing red blood cells.</p>	<p>Dietary sources of water-soluble vitamins include fruits, dark leafy vegetables, whole grains, meat, fish, poultry, and fortified cereals, specifically:</p> <p>Vitamin C: citrus fruits, red pepper, and other plant sources</p>

	<p>Minerals: contribute to a variety of body processes, including growth, development, water balance, and neurological processes. Although minerals are present in many foods, they are more easily absorbed from some foods than from others. Essential minerals include the following:</p> <p>Iron: is an essential component of blood and helps transfer oxygen to various tissues. with animal-source iron or vitamin C).</p> <p>Calcium: key component of bones and teeth and is needed for a strong skeleton.</p> <p>Iodine is important for thyroid function and for mental development of children. The most important dietary source is iodised salt.</p> <p>Zinc: enhances and strengthens the immune system, helps wounds heal, facilitates digestion, and is an important component of skeletal muscle. Dietary sources include beef, seafood, liver, nuts, beans, and whole grains.</p> <p>Other minerals involved in various body functions are chromium, copper, fluoride, magnesium, manganese, molybdenum, nickel, potassium, phosphorus, sodium, and selenium.</p>	<p>IRON: Dietary sources include red meat, fish, poultry (easily absorbed), legumes, leafy green vegetables (less easily absorbed, but absorption increases if eaten</p> <p>Calcium: Dietary sources include dairy products (most easily absorbed) and leafy greens (not well absorbed).</p> <p>Iodine: Iodised salt</p>
Water		
	<p>Water is an essential nutrient necessary for body functions including digestion, absorption, and certain metabolic processes. Water is also a primary component of the body, representing over 60 percent of a person’s weight. Water is regularly lost from the body through sweating, excretion, and breathing and must be replaced as often as lost.</p>	<p>Boiled or treated drinking water</p> <p>Juices</p> <p>Teas</p> <p>Soup</p> <p>.</p>

IV. Foods Rich in Specific Nutrients (Food Groups)

Foods can be classified into three categories—Go, Glow, and Grow—based on their main contribution to nutrition.

‘Go’ Foods (Energy Foods)

Go foods provide energy to the body and are essential for physical activity and basic functioning of the body. Go foods that are rich in carbohydrates are primary sources of energy and include whole grains, refined grains, roots, and starchy fruits and vegetables.

Note: Fats, including oils and saturated and trans fats, are also an energy source and considered to be Go foods.

Carbohydrates			
Whole Grains	Refined Grains	Roots	Starchy Fruits and Vegetables
Millet flour Sorghum flour Whole wheat flour (brown) Whole maize meal (brown) Brown rice Whole wheat bread	Corn flakes White wheat flour White maize meal White rice White bread	Cassava Irish potatoes Sweet potatoes Yams	Matooke Gonja (plantains)
Oils (Liquids) – Unsaturated		Fats (Solids) – Saturated and Trans	
Plant source: Sunflower, soybean, corn/maize, cottonseed, canola, sesame, groundnut, olive, safflower, and walnut oils		Animal source: Milk fat (ghee), butter, beef fat, chicken fat, pork fat (lard) Plant source: Margarine, kimbo, cowboy, coconut, and palm oil	
Excessive consumption of saturated and trans fats increases risk of heart disease. Replacing with unsaturated fats may reduce risk of heart disease.			

‘Grow’ Foods (Body-Building Foods)

Grow foods are rich in protein and promote growth, development, and repair of body tissues. Grow foods come from animal and plant sources.

Animal Source	Plant Source	Insect source
Meats and game meats (lean cuts): beef, lamb, pork, veal, and game meat (e.g., rabbit, guinea fowl, squirrel, edible rats (Ayita),) Organ meats: liver, giblets Poultry: chicken, duck, goose, turkey, ground chicken and turkey, eggs Fish: Fresh water fish- silver fish, Nile perch, tilapia, mudfish, catfish, and sea fish - cod, lobster, mussels, oysters, shrimp, canned fish (anchovies, tuna, sardines) Dairy products: milk, cheese, sour milk, yoghurt	Beans (black beans, black-eyed peas, chickpeas, kidney beans, broad beans, soybeans, white beans) Peas (Coroko, chick peas, Lapena, cowpeas, green peas etc) Processed soy products Nuts and seeds: Groundnuts, groundnut or groundnut and simsim mix butter (Odii), pumpkin seeds, simism (sesame) seeds, sunflower seeds etc	Edible insects: Grasshoppers (Ensenene), Termites, White ants, Crickets, Locusts, Caterpillars

‘Glow’ Foods (Body-Protecting Foods)

Glow foods—rich in vitamins and minerals—are protective foods that provide key nutrients to regulate important body functions. This group primarily consists of fruits and vegetables. Fortified foods, including iodised salt, are also important Glow foods.

FRUITS	VEGETABLES
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<p>Commonly eaten fruits: bananas, pineapples, papaya (pawpaw), mangoes, guavas, oranges, jack fruit, tangerines, apples, brother hearts, custard fruit (staferi), avocado</p> <p>Wild fruits: tamarinds, berries, wild grapefruits</p> <p>Fruit juice (100 percent): passion, orange, apple, pineapple, melon, grape, grapefruit, hibiscus</p>	<p>Dark green leafy vegetables: spinach, Dodo/ amarantha, sukuma wiki, cowpea leaves, pumpkin leaves, cassava leaves, fresh cowpea leaves, field pea leaves, immature corn, green tea leaves, yam leaves, sweet potato leaves, broccoli, lettuce, hibiscus leaves (Malakwang)</p> <p>Red and orange vegetables: carrots, red peppers, tomatoes, tomato juice, red amarantha, red hibiscus</p> <p>Other vegetables: beet roots, cabbage, eggplant, cucumbers, cauliflower, green beans, green peppers, mushrooms, okra, onions, bean sprouts, celery, pumpkin</p> <p>Wild vegetable: wild cucumber</p>
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Note:

Foods may contribute to more than one category but are listed based on their primary contribution. For example, staple foods in Uganda are listed as Go foods because they are a primary source of energy. However, they also contain other essential nutrients such as protein, vitamins, and minerals to contribute to the body's ability to 'grow' and 'glow'.

The 5 finger model for dietary diversity



FOOD FORTIFICATION AND BIO-FORTIFICATION APPROACHES

Fortification of commonly consumed foods is a relatively inexpensive and effective means of increasing micronutrient intake. Adequate consumption of fortified foods has been shown to improve micronutrient status. The choice of a food vehicle depends on a series of factors, including the target group, food consumption patterns.

1. Food Fortification

Fortified foods include Salt with iodine to prevent Iodine Deficiency Disorders (IDD); Cereals (wheat and maize,

with multi-mix of vitamins and minerals); Vegetable oil and fats with vitamin A; Processed Complementary foods with multi-mix of vitamins and minerals (such as Corn-Soy Blends – CSB); and Home fortification of complementary foods with multiple micronutrient powders (MNPs). Micronutrients content of fortified staples:

- *Vegetable Oil*: Vitamin A
- *Maize flour*: Vitamin A, Folic Acid, Vitamin B-12, Vitamin B-1, Vitamin B-2, Vitamin B-6, Niacin, Zinc, Iron.
- *Wheat flour*: Vitamin A, Folic Acid, Vitamin B-12, Vitamin B-1, Vitamin B-2, Vitamin B-6, Niacin, Zinc, Iron.

2. Bio-fortified foods

Bio-fortified foods are conventionally bred food crops rich in specific nutrients.

- Bio-fortified beans with iron and sweet potato with provitamin A have been proven to improve iron and vitamin A status of individuals respectively; and
- Orange-fleshed sweet potato is an important source of beta-carotene, the precursor to Vitamin A.

Session 1.2. Malnutrition: Definition, Types, Causes, Consequences and Prevention

Malnutrition is the condition that develops when the body does not get the right amount of nutrients it needs to maintain healthy tissues and organ function. The vulnerable population that are mostly affected by malnutrition are children below five years of age, women in reproductive age including pregnant and lactating women and Adolescents because of their increased nutrient demands during the rapid growth, development, and physiological conditions. The causes of malnutrition are multiple and if not managed, can contribute to high morbidity, mortality or affect the entire life cycle.

Learning Objectives

By the end of the session, participants will be to:

- Explain the meaning of malnutrition and types of malnutrition
- Explain the causes and consequences of malnutrition
- Discuss prevention of malnutrition

DEFINITION OF MALNUTRITION

Malnutrition is the condition that develops when the body does not get the right amount of the nutrients need for proper growth and function of the body

TYPES OF MALNUTRITION

(a). Undernutrition

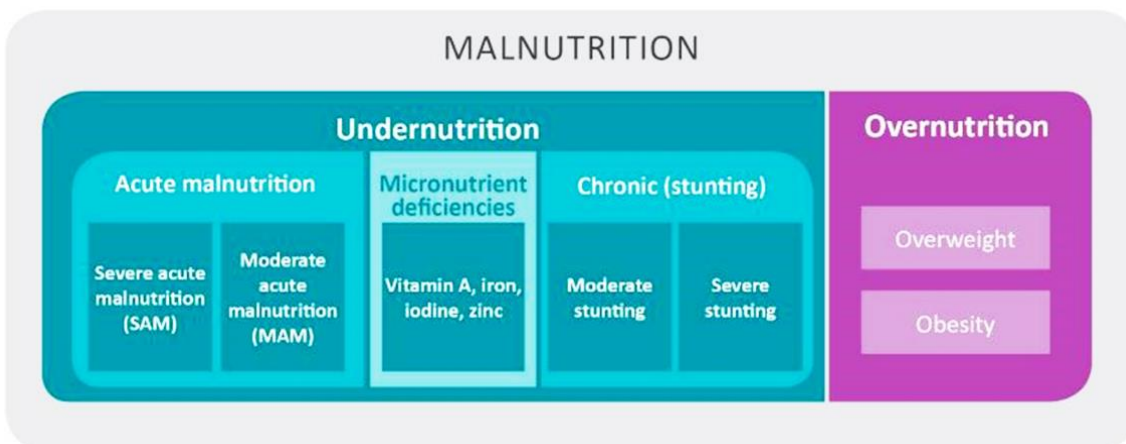
Undernutrition is a consequence of consuming too few essential nutrients, using or excreting them more rapidly than they can be replaced, or not being able to absorb the nutrients consumed. There are three categories of undernutrition, and patients may present with a combination of types:

- Acute malnutrition** is caused by reduced food consumption and/or illness, resulting in wasting (thinness or low weight for height) or bilateral pitting oedema. Children with severe acute malnutrition (SAM) are at increased risk of death and need treatment urgently.
- Chronic malnutrition** is caused by long-term or repeated food deprivation or illness that impedes growth (stunting) and development. Stunting can begin in the womb, and children are at highest risk of stunting from conception through their second birthday. Stunting is largely irreversible after about age 2; hence it must be prevented.
- Micronutrient deficiencies** Vitamin or mineral deficiency occurs when a diet is out of balance, and it can happen whether an individual is getting enough calories. Symptoms usually don't occur immediately, but problems arise over time. Micronutrient deficiencies that are of concern in Uganda include deficiencies in iron, vitamin A, iodine, and zinc.

(b). Overnutrition

Overnutrition is defined as the overconsumption of nutrients and food to the point at which health is adversely affected. Overnutrition can develop into overweight or obesity. Obesity increases the risk of serious health conditions, including cardiovascular disease, hypertension, cancer, and type-2 diabetes. Consuming too much energy over time, will cause excessive weight gain unless combined with physical activity. It doesn't matter if those extra calories come from fat, carbohydrates, or protein because your body can take whatever it doesn't need and store it as fat.

Types of malnutrition



CAUSES OF MALNUTRITION

There are several interconnected causes of malnutrition, ranging from policy issues to underlying community and cultural situations to immediate household conditions.

(a). Immediate Causes

Inadequate dietary intake including poor quality and quantity of food in the diet

Infection and disease such as malaria, diarrhoeal diseases, acute respiratory infections, worm infestations, HIV, and tuberculosis (TB)

The two immediate causes of malnutrition; inadequate dietary intake and infectious disease, interact with each other in a cycle that increases a child's risk of both illness/infection and undernutrition.

(b). Underlying Causes

Underlying causes contribute to the immediate causes and must be dealt with to improve the overall nutrition situation. It is important to understand why some people are at higher risk for illness or are unable to consume an adequate diet.

Household food insecurity, including poor access to a diverse diet, inadequate quantity of food available and accessible, and seasonal fluctuations in food availability. These factors compromise the quality and quantity of dietary intake.

Inadequate care and feeding practices, including suboptimal maternal nutrition and infant feeding practices, which are often associated with limited time and heavy workloads for women, frequent births, and poor hygiene and sanitation practices. These factors compromise the quality and quantity of dietary intake and increase risk of infection and disease.

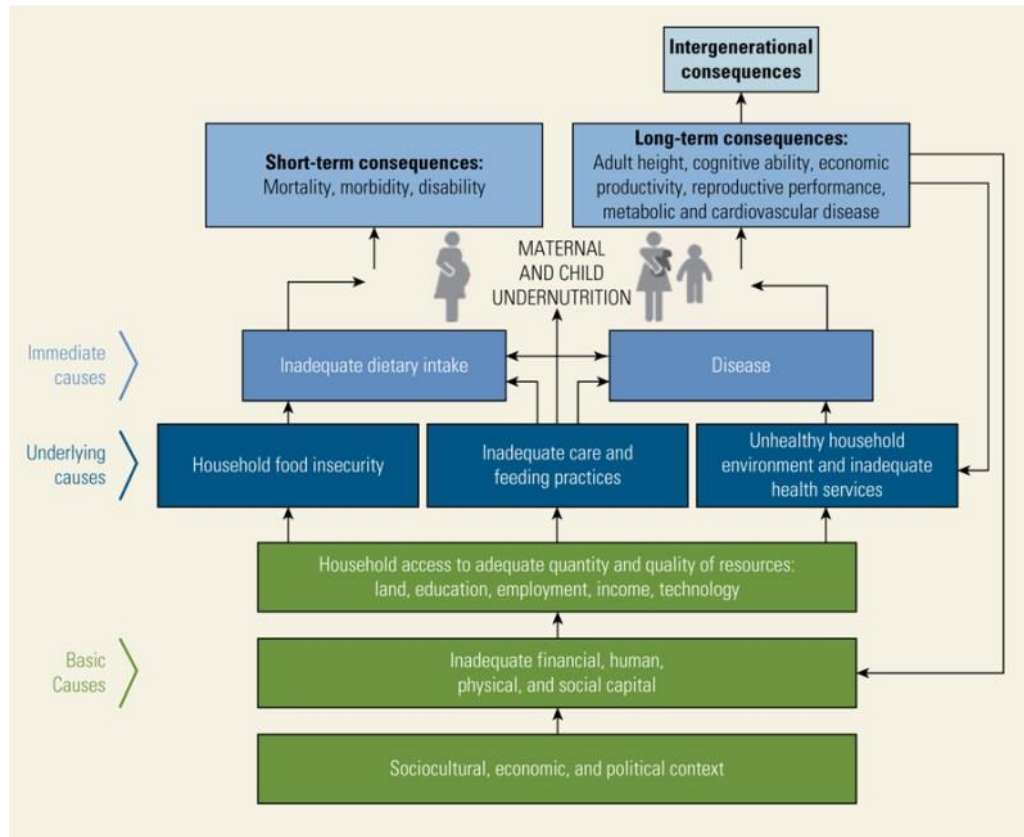
Unhealthy household environment and inadequate health services, including inadequate access to safe water and sanitation, poor access to health care, and low quality of health care. These factors lead to increased infection and disease.

(c). Basic Causes

There are also societal-level issues that may increase the risk of malnutrition, especially among the most vulnerable.

- **Limited access to quantity and quality of resources**, including inadequate educational opportunities; limited livelihood opportunities; unequal economic structure; limited access to land, productive assets, and technology; and poverty.
- **Inadequate financial, human, physical, and social capital**, including social networks and movements, availability of skilled workers, and funding for social programmes.
- **Sociocultural, economic, and political context**, including legal framework, policies, and roles and rights of girls and women; allocation of public funding and other resources; quality and priorities of social and political leadership; and stability and conflict in the region.

The UNICEF conceptual framework of undernutrition



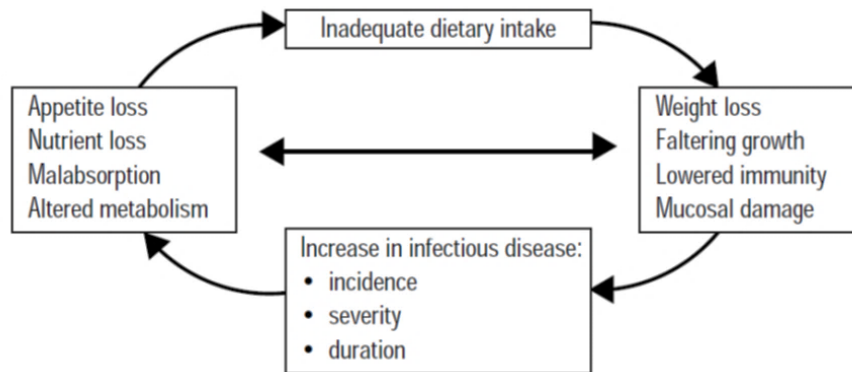
CONSEQUENCES OF MALNUTRITION

Malnutrition can lead to immediate and long-term consequences. These include:

1) High Child Mortality, Morbidity, and Disability

- Newborns who are born small for their gestational age are more likely to die than children born with a healthy weight (> 2500 g)
- A severely stunted child is four times more likely to die than a healthy child (Black et al. 2008).
- A severely wasted child is nine times more likely to die than a healthy child (Black et al. 2008).
- Micronutrient deficiencies—including vitamin A, zinc, and iron—impair the immune system, increasing risk of illness and death.
- Vitamin A deficiency is a major cause of blindness.
- Iron deficiency anaemia in pregnant women increases risk of maternal and perinatal mortality and low birth weight.
- Maternal undernutrition affects foetal growth and the first 2 years of a child's life, contributing to children born small for gestational age, stunting, and obesity and noncommunicable disease in adulthood (Victora et al. 2008).

The vicious cycle of undernutrition



Children who are undernourished at birth, in infancy, and in young childhood and who also gain weight rapidly after age 2 are at increased risk for chronic disease in adulthood, including hypertension, cardiovascular disease, and high blood glucose concentrations.

2) Weakened Brain Development and Nervous System

- Stunting is associated with impaired cognitive and motor development and poor school achievement and performance.
- Iron deficiency and iron deficiency anaemia impair cognitive development and can reduce children's school performance and adults' physical capacity for work.
- Developmental impairments result in diminished income-earning capacity in adulthood.
- Folic acid deficiency causes neural tube defects (Spina Bifida)
- Iodine deficiency causes mental retardation, physical growth retardation, or a combination of both (cretinism).
- Iodine deficiency disorders affect a child's ability to learn, school performance, likelihood of staying in school, and speech and hearing ability.

3) Socioeconomic Consequences of Undernutrition

- Increased or persistent poverty
- High costs of treating illnesses attributed to malnutrition
- Costs of caring for sick family members, including time away from work or school
- Lost care for household members who are not sick

Risk Factors to Overnutrition

The main predisposing factors are a) consumption of energy-dense foods with poor nutrient content, (e.g. fast foods) and b) reduced physical activity, (e.g. Modern conveniences/lifestyles: technology, Televisions, cars, elevators).

Other factors include:

- Medications, including some antiretroviral drugs (ARVs)
- Genetic factors/family history of obesity
- Health conditions: illnesses, metabolic disorders, hormonal imbalance

- Psychological factors: stress, emotional anxiety, depression, chronic pain, filling void

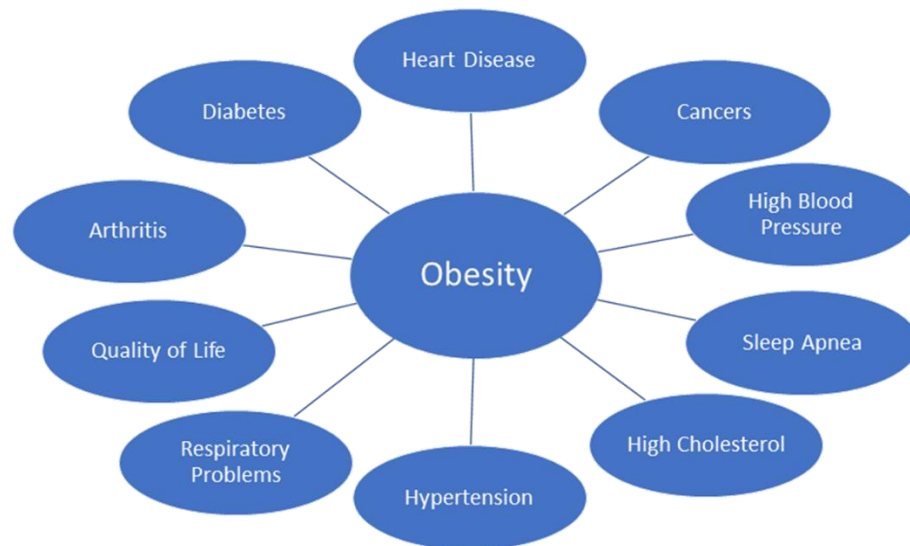
Consequences of Overnutrition

Overnutrition (overweight and obesity) during pregnancy increases risk of childhood obesity which, in turn, increases the risk of adolescent and adult obesity.

Overweight increases the risk of coronary heart diseases (CHD), type 2 diabetes, gout, and hypertension.

Maternal obesity is associated with complications during delivery, gestational diabetes, pre-eclampsia, maternal death, and neonatal and infant death.

Overnutrition may lead to many other complications, e.g. stroke, varicosity



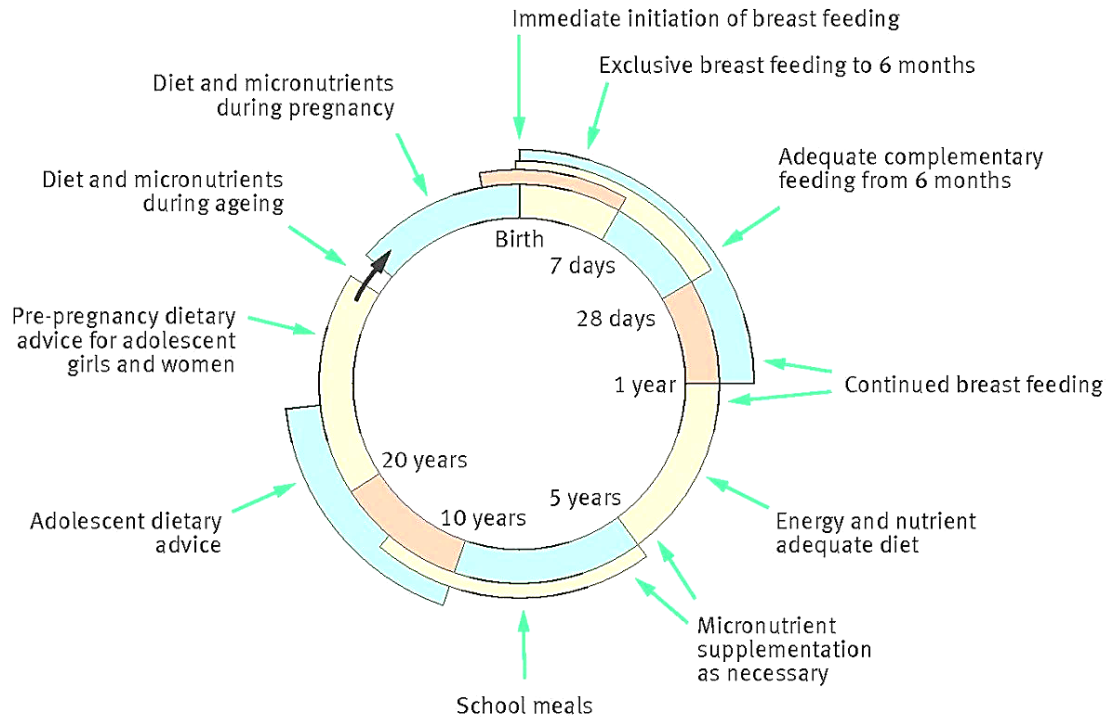
PREVENTION OF MALNUTRITION

Malnutrition is preventable.

Key practices to prevent undernutrition include:

- Promotion of exclusive breastfeeding for the first 6 months and continued breastfeeding to 2 years and beyond
- Appropriate complementary feeding practices from 6 months to 23 months of age
- Biannual Vitamin A supplementation from 6 months to 59 months of age
- Iron and Folic acid supplementation to pregnant women throughout pregnancy
- Immunization of children (EPI guidance)
- Growth monitoring and promotion
- Treatment of diarrhoea with ORS and Zinc supplement
- Deworming of children 12 months to 14 years
- Deworming of pregnant women second and third trimester
- IPT for pregnant women as early as possible from second trimester
- Promotion of maternal nutrition
- Water, sanitation, and hygiene practices

Breaking the cycle of malnutrition



Prevention of Overnutrition

Overnutrition can be prevented through education and behaviour change at individual and programmatic levels:

a) Nutrition education and counselling

Nutrition education and counselling is an approach which can be utilised to inform individuals and groups on:

- **Healthy eating habits**
 - Eat healthy foods from childhood and moderate unhealthy foods among children. Reduce consumption of junk food and candy.
 - Help children understand that foods high in sugar and fats are fine to eat if they are eaten in moderation.
- **Healthy food choices**
 - Eat whole grains, vegetable oils e.g. sunflower, olive oil, protein-rich foods
 - Eat a lot of fresh fruits and vegetables on daily basis
 - Chose beverages without a lot of sugar
 - Drink a lot of water
 - Reduce intake of refined grains, sweets, red meats, and sugary drinks.
 - Eat snacks which are high in fibre, vitamins, and minerals but low in fat, sodium, and refined sugar

Regular Physical Activity to burn calories and improve metabolism. Be more active and avoid sedentary lifestyle, develop light exercise programs such as evening walks, sports, and games. Reduce time spent on television watching and/computer games.

Improve sleep and reduce stress.

Routine nutritional assessment, categorization, counselling, and support

- Routine weight monitoring, nutrition education, and counselling to attain and maintain BMI 18.5– 24.9 (adults 18 and older) or normal BMI for age (children 2 to 18 years) and normal weight for height z-score (WHZ) (0– 59 months);
- Capacity-building at all levels to be able to screen, identify, and support appropriately for weight loss.
- Strengthened referrals for overweight and obese clients to appropriate medical care and support; and
- Promote physical activity and nutrition education in schools.

Session 1.3: Nutrition Assessment

Nutrition care starts with good assessment (measurement and classification) of nutritional status. Nutrition assessment should be part of all health facility care and support and it can be used to; identify medical complications that affect nutritional status, track growth and weight trends, detect diet habits that make it difficult to improve health or that increase the risk of disease and inform nutrition counselling.

Learning Objectives

At the end of the session participants should be able to:

- Describe anthropometric equipment and what they measure
- Demonstrate ability to take accurate anthropometric measurements (MUAC, Weight, Height, and Length)
- Explain the anthropometric indices and classify nutritional status
- Describe how to assess for key clinical signs and symptoms of malnutrition

I. Anthropometric Equipment and What they Measure

Anthropometry refers to the measurement of the human body in order to assess nutritional status of individuals. The common measurements according to MIYCAN guidelines include weight, height/length, and mid-upper arm circumference (MUAC).

The common anthropometric equipment and what they measure include:

- Weighing scales - For measuring weight in both children and adults
- Height boards - For determining Length/height of children and adults

- MUAC tapes - For measuring mid upper arm circumference

II. Taking Anthropometric Measurements

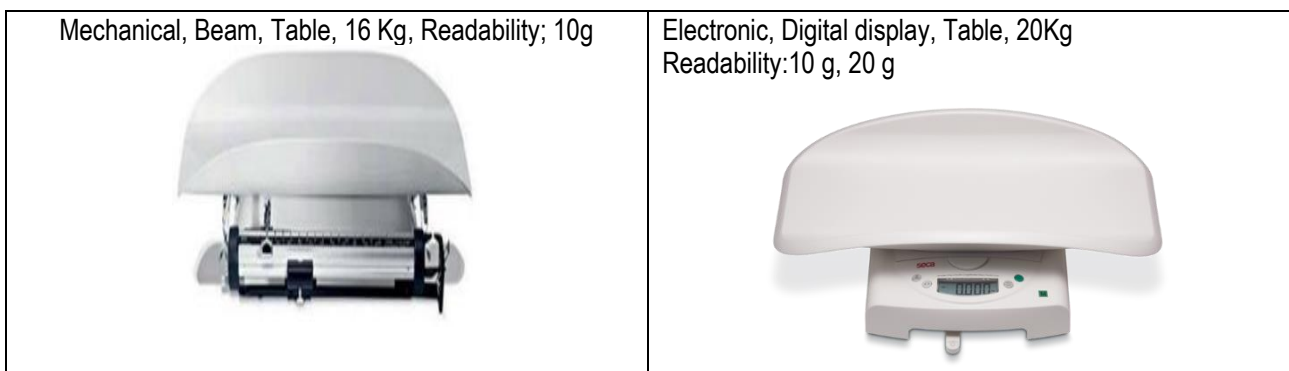
(a) Measuring Weight

Taking weight of Infants (0–12 Months)

Infants should be weighed using a paediatric balance beam scale precise to within 10 g (0.01 kg). If a paediatric balance beam scale is not available, infants can also be weighed in their caregiver's arms on a two electronic scale or in a basket or basin firmly anchored to a hanging spring (Salter) scale. However, these scales are usually not as precise as a paediatric balance beam scale.

Weighing an Infant with a Paediatric Balance Beam Scale

1. Place the scale on a hard, flat surface, such as a table. Line the basin with a sheet, shawl, or blanket
2. Zero the scale by sliding the main and fractional weights to zero and adjust the 'zero weight' until the horizontal beam is balanced.
3. Ask the assistant (usually mother or caregiver) to undress the infant, leaving the child with no or minimal clothing
4. Ask the assistant to place the infant on the scale
5. Move the main weight away from zero until the horizontal beam falls below the centre point, then move it back one notch. Move the fractional weights until the horizontal beam is balanced, pointing at the centre point.
6. Read the weight out loud and ask the assistant to repeat it to you as you check it.
7. Record the baby's weight to the nearest 10 g (0.01 kg).









Weighing an Infant, held by an Adult, Using an Electronic Scale

1. Place the scale on a hard, flat surface, making sure the scale is level.

2. Turn the scale on by waving your hand over the window.
3. Make sure the scale is set at zero.
4. Ask the caregiver/adult to step on the centre of scale and stand straight and still.
5. Record the weight of the adult to the nearest 100 g (0.1 kg).
6. Place the infant in the arms of the caregiver/adult.
7. Record the total weight to the nearest 100 g (0.1 kg). Subtract the caregiver/adult's weight from the total weight.
8. This is the weight of the infant. Read the infant's weight aloud and ask the assistant or caregiver to repeat it aloud. Record the weight to the nearest 100 g (0.1 kg).

Note: Some electronic scales can calculate the child's weight for the health care worker. These are called taring scales

<p>Mechanical, dial, Platform, column type, with height measurement 220 Kg, 50 g</p> 	<p>Electronic, with BMI calculator 250kg, 0.1 kg</p> 	<p>Mechanical, dial, platform, column type, with BMI calculator, without height measurement 160kg, 500gm</p> 
<p>Mechanical, dial, Platform, 150kg, 1 Kg</p> 	<p>Mechanical, spring, hanging paediatric scale 0-25Kg, 100g</p> 	<p>Electronic, fitness, with digital display 200Kg, 0.1 Kg</p> 

Weighing an Infant with a Hanging Spring (Salter) Scale

See instructions for 'weighing children 25 kg or less' (below) and follow instructions for using a basket or basin.

Do not place an infant in weighing pants.

Children Weighing 25 kg or less should be weighed using a hanging spring (Salter) scale.

A Salter scale can weigh children up to 25 kg and is graduated in measurements of 0.1 kg (100 g).

It is better to use a basin than weighing pants, which are uncomfortable and easily soiled. It is not advisable to use weighing pants after they have been soiled; the pants should be washed before being used with the next child.



Weighing Children 25 kg or Less with a Salter Scale

1. Hook the scale securely to a tree, a beam in the building's roof, a frame, a tripod, or (if you are in the community) a pole held by two people, horizontally at eye level.
2. Suspend the weighing pants or basin/basket from the lower hook of the scale.
3. Reset the scale to zero.
4. If using weighing pants, remove the weighing pants from the scale and explain to the caregiver what you are going to do.
5. Ask the caregiver to undress the child and place him or her in the weighing pants. Make sure one of the pants' straps is in front of the child and the other is behind to keep the child from falling out.
6. Ask the caregiver to lift the child so that the weighing pants may be hung from the lower hook of the scale. Do not carry the child by the straps of the weighing pants. If a hanging basin/basket is used instead of the pants, place the child sitting upright in the basin/basket.
7. Wait until the needle of the dial on the scale is steady. Make sure that nobody touches the pants or the scale during the weighing. Then read aloud the weight to the nearest 100 grams (0.1 kg), asking the assistant/caregiver to repeat it to you.
8. Record the weight

Weighing Children greater than 25 kg, Adolescents, and Adults using electronic scale

Children weighing greater than 25 kg, adolescents, and adults should be weighed using a balance beam scale with nondetachable weights or an electronic scale.

Weighing Children Greater than 25 kg, Adolescents, and Adults with an Electronic Scale See steps 1–5 of 'Weighing an Infant, Held by an Adult, on an Electronic Scale'



Weighing Children Greater than 25 kg, Adolescents, and Adults with a Balance Beam Scale

1. Place the scale on a hard, flat surface.
2. Zero the scale: make sure the scale's horizontal beam is set at zero. If necessary, slide the main and fractional weights to their respective zero positions and adjust the 'zero weight' until the horizontal beam balances at zero.
3. Make sure the client is wearing minimal clothing, with shoes/sandals off.
4. Ask adults to empty their pockets of contents that can increase weight. Ask the client to stand still and straight on the middle of the scale's platform, with the body equally distributed on both feet. Ask the client to not touch anything.

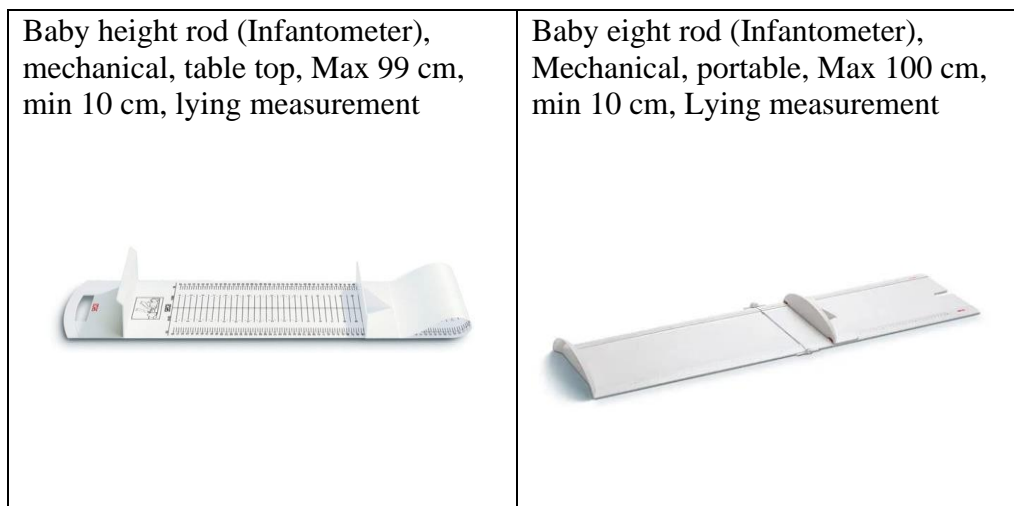
5. Slide the main weight on the balance beam's lower arm to the right until the beam tips all the way down on the right. Then slide the weight back one notch. Slide the fractional weight on the upper arm until the beam is horizontal.
6. Take the reading to the nearest 100 g (0.1 kg), read aloud to inform the client/caregiver, and record immediately.
7. Use standard weights to regularly check the scale's accuracy. Scales should be recalibrated once or twice a year by professional dealers.

Note: Spring-type bathroom scales do not provide measurements accurate enough to classify nutritional status and should not be used.

b) Measuring Length/Height

Length and height should be measured using recommended length/height boards.

Measuring Length of Children Under 2 Years



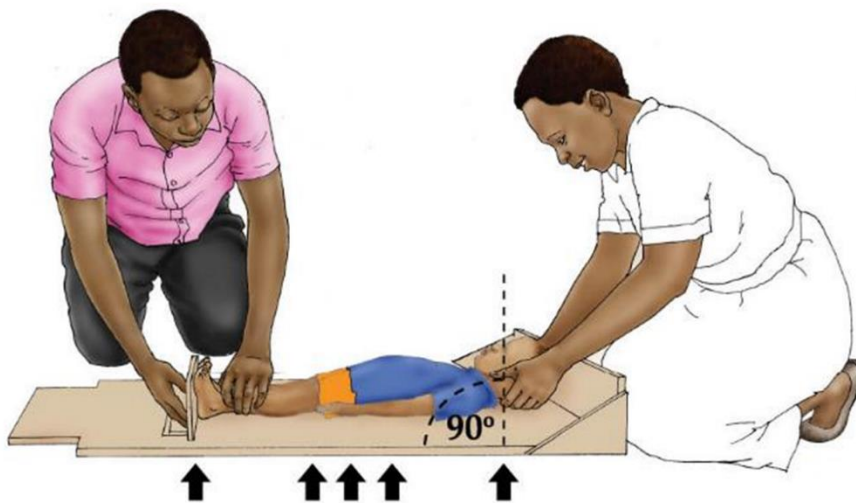
Children under 2 years should be measured while they are lying down.

Note: If a child's age cannot be determined, measure children less than 87 cm (or those who cannot stand) while they are lying down.

Measuring the Length of Children Under 2 Years

1. Place the measuring board horizontally on the ground or on a table.
2. Remove the child's shoes or sandals and any head covering.
3. With the help of one or two assistants, place the child on the board with his/her head against the fixed (immovable) end.
4. Ask an assistant/caregiver to hold the child's head so that the child's eyes are pointing straight up and then to gently pull the child's head so that it touches the fixed end of the board;

5. With one hand, gently push the child's knees to straighten them as much as possible. (Note: Newborns' knees do not straighten as much as older children's knees. Apply minimum pressure so as not to injure them.) Make sure the child's heels, buttocks, shoulders, and back of head are touching the board.
6. With the other hand, slide the movable footboard until it touches the soles of the child's feet.
7. Immediately remove the child's feet from contact with the footboard with one hand (to prevent the child from kicking and moving the footboard) while holding the footboard securely in place with the other hand; and
8. Read aloud the measurement to the nearest 0.1 cm and record. Measuring the Length of Children Under 2 Years.



c) Measuring Height of Children 2 Years or Older

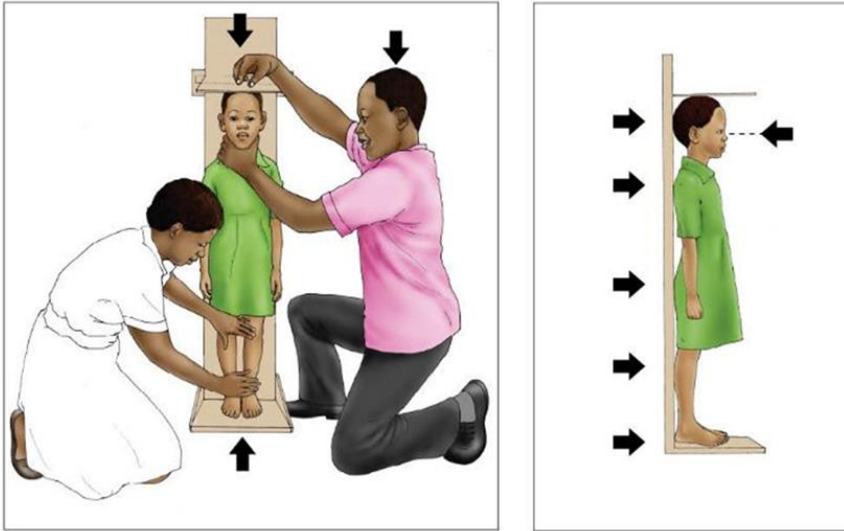
Children 2 years or older are measured using a height board, with the child standing. If you do not have a height board, you can also fasten a non-stretchable tape measure securely to a wall.

Note: If a child's age cannot be determined, children 87 cm or greater are measured standing.

Measuring the Height of Children 2 Years or Older

1. Place the height board vertically on a flat surface.
2. Ask the caregiver (or an assistant) to remove the child's footwear or head covering.
3. Place the child so that the shoulder blades, buttocks, and heels touch the vertical surface of the board. The feet must be flat on the floor, slightly apart, with the legs and back straight and arms at the sides. The shoulders must be relaxed and in contact with the board. The head does not need to touch the board.
4. Ask the child to stand 'straight and tall' and look straight ahead.
5. Ask an assistant to check that the child is standing with feet flat on the board and knees straight.

6. The shoulders and buttocks should be in line with the heels. Ask the assistant to hold the child's ankles and gently push the knees to straighten them.
7. Slide the movable headpiece down firmly on the crown of the child's head, gently holding the head so that the child's eyes point forward.
8. Read the measurement to the nearest 0.1 cm and record.



d) Taking Height of Adolescents and Adults

Measuring the Height of Adolescents and Adults

1. Place the measuring board on a hard, flat surface against a wall and ensure that it is stable. You can use the height measurement attached to a weight scale or a microtoise (portable mountable measuring tape fixed to the wall). If measuring board or microtoise is unavailable, you can use a ruler drawn on a straight wall that meets the floor at a 90-degree angle.
2. Ask the person to take off his/her shoes and remove any head coverings that might interfere with the height measurement. Ask the person to stand on the base of the height measuring board, with his/her back to the wall.
3. Ask the person to look straight ahead, making sure shoulders are level and hands are at his/her sides. At least the buttocks should touch the back of the height board/wall.
4. Lower the headpiece to the top of the person's head. Read aloud the measurement to the nearest 0.1 cm. Record the measurement clearly.

Roll Up measuring tape (Microtoise/stadiometer)
with wall attachment
202 cm X 0.1 cm



Instruction

- 1) Place the stadiometer on the floor against the wall
- 2) Pull the tape measure up far enough for the zero to line up exactly with the red stripe in the measurement display area. Then mark the site of the drill hole on the wall on the upper part of the attachment hole.
- 3) Attach the end of the tape measure to the wall using the screw supplied
- 4) Push the stadiometer back together

Measuring with the stadiometer (Microtoise)

- 1) The person to be measured stands under the stadiometer
- 2) The measuring tongue (Piece) is lowered on to the head

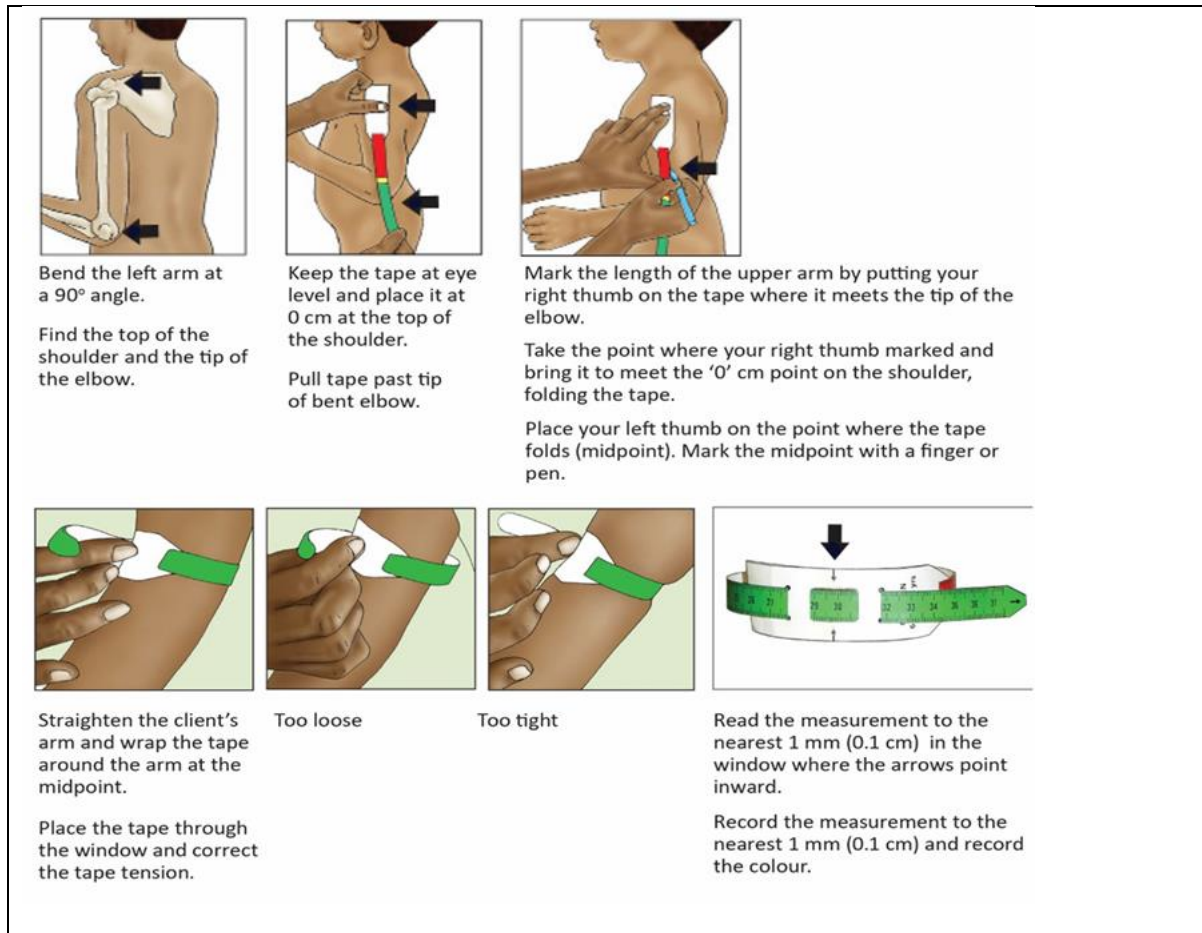
Height appears in the measurement display area

e) Measuring Mid-Upper Arm Circumference

MUAC is used to measure the nutritional status of children 6 months and older, adolescents, and adults, including pregnant and lactating women. MUAC should always be used instead of BMI to assess the nutritional status of women who are pregnant or up to 6 months postpartum because their weight is not an indication of their nutritional status. MUAC is simple to measure, both in the clinic and in the community. MUAC is measured with specific tapes (children and adult) and, preferably colour coded MUAC tapes with sections in red (for severe malnutrition), yellow (for moderate malnutrition), and green (for normal nutritional status).

Steps for Measuring Mid-Upper Arm Circumference





III. Anthropometric Indices and Classification of nutritional status

Anthropometric Indices

Anthropometric measurements (Weight or height/length) alone do not provide enough information to determine nutritional status. They have to be used in combination to form anthropometric indices (also referred to as the building blocks) to provide important nutritional information.

Besides weight and height/length, the other important variable needed to determine anthropometric indices is age.

Determining Age

Age is important when using anthropometry. A client's age should be recorded as accurately as possible. A client's age can be determined from official documents (health card, immunization card, and birth certificate etc.) If official documents are not available, use a local calendar of events to determine the month and year of birth. If a child's length or height is less than 110 cm or if the child cannot touch his/her ear with the opposite hand by extending the arm over the head, he/she should be treated as under 5 years.

Use of Anthropometric Indices



<p>Weight for Age (WFA; W/A) This is a measure of Underweight.</p>	Weight for age compares a child's weight to the expected weight of a healthy child of the same age and sex.
<p>Weight for Height (WFA; W/A) This is a measure of WASTING</p>	Weight for height is used to determine a child's nutritional status by comparing a child's weight to the expected weight of a child of the same length/height and sex.
<p>Height for Age (HFA; H/A) This is a measure of STUNTING</p>	Height/length for age determines a child's nutritional status by comparing a child's height to the expected height of a healthy child of the same age and sex.
<p>Body Mass Index (Body weight (Kg)/Height² (M): (BMI) Indicates body fatness</p>	Weight (kg) for Height(m ²). This is body Mass Index, an indicator of body fatness and used to measure malnutrition in adults 19 and older.
<p>BMI for Age</p>	an indicator of body fatness and used to measure malnutrition in children 5 years to 19 years.

(b). Classification of Nutritional Status using anthropometric indices:

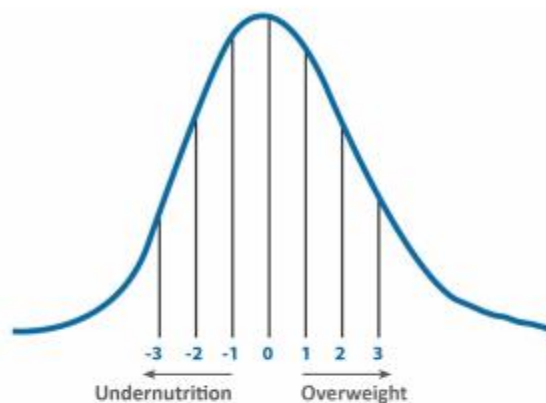
Nutritional status can be classified as stunting, underweight, wasting. The severity of each type of the malnutrition is further graded into **MILD/AT RISK**, **MODERATE** and **SEVERE** using reference standards and cutoffs.

Reference Standards

The 2006 WHO Child Growth Standards for children under 5 or the WHO Growth Reference 2007 for children and adolescents 5–19 years are used as reference standards to classify nutritional status. These references use standard deviations (SD) of the Median Reference known as Z-scores.

Z-Scores

Tendency toward the median reference measurement



(i) Weight for Age Z-Score (WAZ)

Weight for age z-score can be used to determine the nutritional status of children under 2 years, specifically whether they are underweight, and is used in growth monitoring and promotion programmes. There are separate tables for girls and boys when making reference to weight for age tables and growth curves in the WHO Child Growth Standards

Finding Weight for Age Z-Score Using Growth Curves/Charts (Reference charts)

1. Select the correct growth chart for the child's age and sex.
2. Use the vertical line (y axis) to find the weight in kilograms.
3. Use the horizontal line (x axis) to find the child's age.
4. Find where the two lines meet and determine the z-score category under which the measurement falls.

Finding Weight for Age Z-Score Using Reference charts

Group Work 1 (WAZ)

(A) Use the weight for age growth curves/charts and tables to find the z-scores for the following children and classify their nutritional status.

No	Description	Age	W	Z-score	Nutritional status
1	A boy	4 years, 8 months	11.8 kg		
2	A girl	8 months	7.2 kg		
3	A girl	2 years and 4 months			

Group work 2 (WHZ)

WHZ is used to identify acute malnutrition (wasting) as well as overweight and is key to the management of MAM and SAM. There are separate WHO Child Growth Standards for weight for length (for children from birth to 2 years) and weight for height (for children from 2 to 5 years).

Use the weight for length/height growth curves/charts and tables to find the z-scores for the following children and classify their nutritional status

No	Description	L/H	W	Z-score	Nutritional status
1	A boy 1 year old	62 cm	5 kg		
2	A girl 3 years old	70 cm	7.6 kg		
3	Boy 2 years old	70 cm	7.8 kg		

Height/Length for Age Z-Score (HAZ)

HAZ is used to identify stunting, or short stature, which indicates chronic malnutrition. There are separate WHO Child Growth Standards for length for age (for children from birth to 2 years) and height for age (from 2 to 5 years) and also for boys and girls. WHO has made standardized growth curves/charts and field tables available to help classify a child's height for age.

Classifying Nutritional Status Using Height/Length for Age Z-Scores

Practice Exercise

Group Work 3 (HAZ)

Use the height/length for age growth curves/charts and tables to find the z-scores for the following children and classify their nutritional status

No	Description	L/H	Age	Z-score	Nutritional status
1	A girl	92 cm	2 years, 4 months		
2	A boy	74 cm	1 year, 5 months		
3					

Classification of Nutritional Status Using MUAC Cut-off points;

For children 6-59 months:

RED	SAM	MUAC < 115 mm and/or bilateral pitting oedema
YELLOW	MAM	MUAC \geq 115 mm and < 125 mm
GREEN	Normal	MUAC \geq 125 mm

Group		Severe Acute Malnutrition	Moderate Acute Malnutrition	Normal
Infants and children	6 months to < 5 years	<11.5	\geq 11.5 to < 12.5 cm	\geq 12.5 cm
	Children 5 to < 10 years	<13.5	\geq 13.5 to < 14.5 cm	\geq 14.5 cm
	Children/ adolescents 10 to < 15 years	<16.0	\geq 16.0 to < 18.5 cm	\geq 18.5 cm
Adolescents 15 to < 18		<18.5	\geq 18.5 to < 21.0 cm	\geq 21.0 cm
Adults 18 years and older		<19.0	\geq 19.0 to < 22.0 cm	\geq 22.0 cm
Pregnant women or mothers with infants up to 6 months		<19.0	\geq 19.0 to < 23.0 cm	\geq 23.0 cm

Source: Uganda reference standards, 2020

Group work 4 (MUAC)

Classifying Nutritional Status Using MUAC

Client No	Description	MUAC reading	oedema	Colour categorization	classification
1	Child 18 months old	14.2cm	None		
2	Child 05 months old	12.3cm	None		
3	Child 46months old	12.4cm	None		
4	Child 12 months old	13.8cm	+++		
5	Pregnant woman	21.1cm	None		
6	A boy 16 years old	18.2cm	None		

Classification of Nutritional Status Using BMI Cut-off points

Cut offs are points/levels designated to determine levels of malnutrition. Cutoffs are used for BMI

BMI kg/m ² cut offs	Classification
< 16.0	Severe Acute Malnutrition
16.0- 16.9	Moderate acute malnutrition
17.0 – 18.4	At risk/mild malnutrition
18.5 – 24.9	Normal nutritional status
25.0 – 29.9	Overweight
>= 30.0	Obesity

Group Work 5 Find BMI

Use the BMI wheel to find BMI and nutritional status.	BMI Nutritional Status
	ANSWERS
An adult weighing 52 kg with a height of 184 cm	
An adult weighing 94 kg with a height of 172 cm	
Use BMI for age to classify malnutrition	
Calculate the BMI and then use the BMI for age charts to find the BMI for age z-score and the malnutrition classification for the following children.	
	ANSWERS
A boy 6 years with a height of 94 cm and weight of 10.5 kg	
A girl 10 years with a height of 105 cm and weight of 20.7 kg	
Use the BMI wheel to find BMI and nutritional status.	Nutritional Status
	ANSWERS
A boy 8 years, 4 months weighing 19 kg with a height of 125 cm	
A girl 7 years, 6 months weighing 23 kg with a height of 110 cm	

Classification of Children and Adolescents 5–18 Years Using BMI for Age Z-Score

BMI for age z-score can be used to find the nutritional status of children and adolescents 5–18 years. This indicator, which reflects sex as well as age, is used instead of BMI alone because children and adolescents are still growing, and their body composition varies with age and gender. For adolescent girls 15–18 years who are pregnant or within 6 months postpartum, MUAC should be used to classify nutritional status. Otherwise, BMI for age is the preferred method for children and adolescents. The chart below indicates cut-offs for BMI for age z-scores for children 5–18 years. Note that overweight begins when BMI for age is > +1 z-score in adolescents

BMI for Age Cut-off					
SAM	Moderate	At Risk/Mild	Normal	Overweight	Obese
< -3	≥ -3 to < -2	-2 to -1	≥ -1 to ≤ +1	> +1 to ≤ +2	> +2

Group work 6 Classification

Use the appropriate reference tables and charts to complete the missing information in the table below.						
	Client	WHZ score	BMI	BMI for age Z score	Bilateral pitting oedema	Classification
1	Girl, 2 years, 82 cm long, weighing 8.6 kg	< - 2	n/a	n/a	Absent	
2	Boy, 1 year, 74 cm long, weighing 7.2 kg	<-3	n/a	n/a	Absent	
3	Girl, 6 months, 55 cm long, weighing 3.9 kg	<-1	n/a	n/a	Absent	
4	Girl, 1.5 years, 102 cm long, weighing 12 kg	-3	n/a	n/a	++	
5	Girl, 10 years, 3 months, 150 cm tall, weighing 26.3 kg	n/a	11.6	<-3	++	
6	Woman, 45 years, 179 cm tall, weighing 82 kg	n/a	25.6	n/a	Absent	
7	Woman, 19 years, 154 cm tall, weighing 35 kg	n/a	14.8	n/a	Absent	
8	Pregnant girl, 16 years, 154 cm tall, weighing 40 kg	n/a	n/a	n/a	+	
9	Lactating woman, 157 cm tall, weighing 70 kg	n/a	n/a	n/a	Absent	

Group 1 to do numbers 1,3 and 8

Group 2 to do numbers 4, 6, and 7

Group 3 to do numbers 2, 5 and 9

Clinical nutritional assessment

IV. Assessing for Key Clinical Signs and Symptoms of Malnutrition

In addition to classifying the patient nutritional status using MUAC or BMI cut offs and Z Scores, it's important to assess for key clinical signs and symptoms of malnutrition.

Clinical assessment is part of nutritional assessment and should be combined with anthropometric assessment. This involves taking a client's history.

(a). History Taking

- Asking about recent unintentional weight loss (≥ 5 kg body weight)
- Checking for signs of severe wasting (significantly reduced fat in the buttocks; loss of muscle bulk around the shoulders, arms, ribs and legs; clearly visible outline of the ribs; small hips compared with the chest and abdomen; sagging skin, sometimes looking like baggy pants)
- Asking about any illness the client has had (e.g., active tuberculosis, diarrhoea for more than 7 days, other chronic opportunistic infections, oesophageal infections, tumours)
- Asking about any medication/treatment the client is on
- Asking about any symptoms the client has been experiencing (e.g., cough; fever; diarrhoea; vomiting; nausea; loss of appetite; persistent fatigue; dry or flaking skin; mouth sores or difficulty swallowing pallor of the palms, nails or mucous membranes (anaemia) disorientation, night blindness, irritability, anxiety, attention deficit,

goitre (enlarged thyroid gland), muscle twitches, scaling and cracking of the lips and mouth. Physical changes caused by severe acute malnutrition

(b). Dietary History

Dietary history is a process of evaluating what people eat. The history includes asking the client (pregnant women, mothers of children less than 2 years of age, adolescent, infant and young children about eating their habits (e.g., quantity of food eaten at each meal, food groups eaten each day, frequency and consistency in particular for children under the age of 2 years).

(c). Physical Assessment

Look for signs of oedema and grade the oedema:

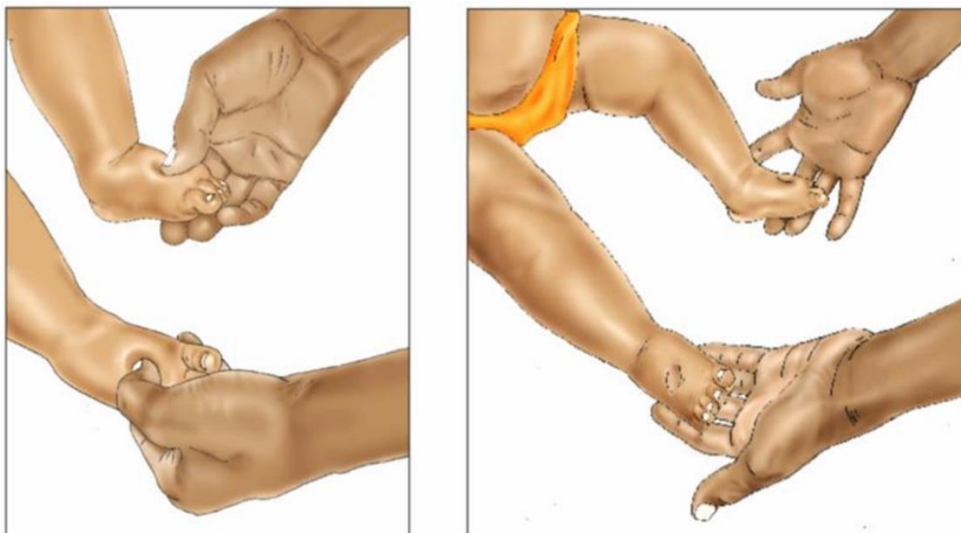
Assessing for oedema

Oedema is a condition of abnormally large fluid volume in the circulatory system or in tissues between the body's cells. Oedema can be caused by conditions such as congestive heart disease, lymphatic disorders and kidney disease). Oedema can also be caused by malnutrition. Oedema is of nutritional significance only if it is bilateral (in both feet or legs) and is pitting (pressure on the skin leaves an indentation that remains once the pressure is removed).

Bilateral pitting oedema is a sign of SAM. Any client with bilateral pitting oedema should be classified as having SAM, regardless of any other anthropometric measurements.

- Test for oedema with thumb pressure, not just by just looking.
- Press gently with your thumbs on both feet for 3 seconds (approximately the time necessary to say “one thousand one, one thousand two, one thousand three”).
- If a shallow print or pit remains on both feet when the thumb is lifted, then the client has bilateral pitting (nutritional) oedema.

How to examine for bilateral pitting oedema



Grading of oedema

The extent of oedema is commonly graded as follows:

Mild/ (+): both feet

Moderate/ (++) : both feet, plus lower legs, hands, or lower arms

Severe/ (+++) : generalized oedema including feet, legs, hands, arms and face

Observation	Classification
No oedema	(0)
Bilateral oedema in both feet (below ankles)	+ / (Grade 1) mild
Bilateral oedema both feet and legs (below knees)	++ / (Grade 2) moderate
Bilateral oedema observed on both feet, legs, arms, face	+++ / (Grade 3) severe

Session 1.4 Counselling and Support Skills

Introduction

Counselling is a process and interaction between counsellors and individuals. It is not a top-down intervention of telling people what to do, but rather to give them enough information so that they can make an informed decision. The aim of breastfeeding counselling is to empower women to breastfeed, while respecting their personal situations and wishes.

Basic communication skills are required by health workers to effectively negotiate with caregivers and community members to undertake doable actions to improve nutrition practices of mothers, young girls, and children in the community. Counselling is a way of working with people in which you try to understand how they feel and help them to decide what to do. This session aims at providing counselling skills that would enable health care providers counsel mothers, caregivers, and adolescents on nutrition.

Learning Objectives

At the end of the topic, the participants should be able to:

1. Demonstrate basic communication skills
2. Demonstrate the ability to use the listening and learning skills
3. Learn how to build confidence and provide support

1. Basic Communication Skills

Introduction: Basic communication skills are required by health workers to effectively negotiate with caregivers

and community members to undertake doable actions to improve nutrition practices of mothers, young girls, and children in the community.

Communication is the process of sharing ideas and experiences with other people using verbal and non-verbal language. It is also the exchange of information from one person to another with appropriate feedback from both ends

The qualities of a good communicator.

• A good listener	• Feels for others	• Cross checks if he has been understood
• Can convince others	• Motivates others to talk	• Talks less and listens more
• Respects other people’s opinion	• Gives quality time to the other	• Shows the other that he is willing to listen
• Respects other people’s ideas	• Interested in what the other says	
• Encourages others to talk	• Coveys’ clear messages	

Interpersonal Communication (IPC)

Interpersonal communication is oral (spoken) and non-verbal (eye contact, gestures, postures, facial expressions etc) communication between people. Sending, receiving interpreting, and sending back ideas and information

The following are elements of good interpersonal communication:

• Appropriate body language (eye contact, smile, gestures)	• Respectful distance between speakers	• Encouraging speaker to continue
• Asking lots of questions	• Showing sensitivity to the other person’s needs	Showing interest by leaning forward
• Active listening	• Paraphrasing to signal you have heard and understood	• Removing physical obstacles in the way
• Encouraging the other person to talk	• Nodding or verbal signals to demonstrate listening and learning	

2.LISTENING AND LEARNING

The first two counselling skills sessions are about “listening and learning”. A mother may not talk about her feelings easily, especially if she is shy and with someone whom she does not know well. You need the skill to listen and to make her feel that you are interested in her. This will encourage her to tell you more. She will be less likely to “turn off” and say nothing.

Skill 1. Use helpful non-verbal communication

‘Non-verbal communication’ means showing your attitude through your posture, your expression, everything except through speaking. Helpful non-verbal communication makes a mother feel that you are interested in her, so it helps her to talk to you.

HELPFUL NON-VERBAL COMMUNICATION

1. Keep your head level
2. Pay attention
3. Remove barriers
4. Take time
5. Touch appropriately

Demonstration of skill to be done by the Facilitator.

Skill 2. Ask open questions

Open questions are very helpful. To answer them a mother must give you some information. Open questions usually start with 'How? What? When? Where? Why?'. For example, "How are you feeding your baby?"

Closed questions are usually less helpful. They tell a mother the answer that you expect, and she can answer them with a "Yes" or "No". They usually start with words like 'Are you?', 'Did he?', 'Has he?', 'Does she?'. For example: "Did you breastfeed your last baby?" If a mother says "Yes" to this question, you still do not know if she breastfed exclusively, or if she also gave some artificial feeds.

To start a conversation, general open questions are helpful. For example: "Tell me about your baby?" To continue a conversation, a more specific open question may be helpful. For example, "How old is your baby now?"

Sometimes it is helpful to ask a closed question, to make sure about a fact. For example: "Are you giving him any other food or drink?". If she says "Yes", you can follow up with an open question, to learn more. For example, "What made you decide to do that?"

Exercise 7.a Asking open questions

How to do the exercise:

Questions 1-4 are 'closed' and it is easy to answer 'yes' or 'no'.

Write a new 'open' question, which requires the mother to tell you more. (see table below)

Example:

'Closed' Question

Do you breastfeed your baby?

'Open' Question

How are you feeding your baby?

To answer: 'Closed' Questions	Suggested answers for 'Open' Questions
<ol style="list-style-type: none">1. Does your baby sleep with you?2. Are you often away from your baby?3. Does Sarah eat porridge?4. Do you give fruit to your child often?	

Skill 3. Use responses and gestures which show interest

Another way to encourage a mother to talk is to use gestures such as nodding and smiling, and simple responses such as "Mmm", or "Aha". They show a mother that you are interested in her.

Demonstration of skill to be done by the Facilitator.

Skill 4. Reflect back what the mother says

'Reflecting back' means repeating back what a mother has said to you, to show that you have heard, and to encourage her to say more. Try to say it in a slightly different way. For example, if a mother says: "I don't know what to give my child, she refuses everything. "You could say: "Your child is refusing all the food you offer her?"

Exercise 7.b Reflecting back what a mother says

How to do the exercise:

Statements 1-3 are some things that mothers might tell you.

Underneath 1-3 are three responses. Mark the response that 'reflects back' what the statement says.

Example:

Statements	Possible responses
My mother says that I don't have enough milk.	a) Do you think you jave enough? b) Why does she think so? c) She says that you have a low milk supply?
Matembe does not like to eat green leafy vegetables	a) Matembe does not seem to enjoy green leafy vegetable? b) What foods have you tried? c) It is good to give Matembe green leafy vegetables as they are important for growth
3. HE does not seem to want to suckle from me	a) has he had any bottle feeds? b) How long has he been refusing? c) He seems to be refusing to suckle?
4. "My husband says our baby is old enough to stop breastfeeding now"	Enter your response:- _____ _____

Skills 5: Empathize; show that you understand how she/he feels

Empathy or empathizing means showing that you understand how a person feels. For example, if a mother says: "My baby wants to feed very often and it makes me feel so tired," you could say: "You are feeling very tired all the time then?"

This shows that you understand that she feels tired, so you are empathizing. If you respond with a factual question, for example, "How often is he feeding? What else do you give him? ". You are not empathizing.

Exercise 7.c Empathizing - to show that you understand how she feels

How to do the exercise:

Statements 1-4 are things that mothers might say.

Underneath statements 1-4 are three responses that you might make.

Underline the words in the mother's statement which show something about how she feels. Mark the response which is most empathetic. For stories 5 and 6, underline the feeling words, then make up your own empathizing response.

Example:

My baby wants to feed so often at night that I feel exhausted.

- a) How many times does he feed altogether?
- b) Does he wake you every night?
- c) You are really tired with the night feeding.

To answer:

Statement	Response
James has not been eating well for the past week. I am very worried about him. (statement 1)	<ul style="list-style-type: none"> a) You are anxious because James is not eating? b) What did James eat yesterday? c) Children often have times when they do not eat well.
I missed taking iron and folic acid in the first few months of pregnancy. (statement 2)	<ul style="list-style-type: none"> a) Sometimes pregnant women delay to start taking iron and folic acid. b) You are worried because you started taking iron and folic acid lately? c) Well, when exactly did you start taking iron and folic acid?
<u>I feel</u> I have started having my menses too early. (statement 3)	<ul style="list-style-type: none"> a) You are upset because of the early menses? b) When exactly did you start having your periods? c) It is always possible for adolescent girls at 9 years and above to have their menses.
<u>I am anxious</u> that if I breastfeed, I will pass HIV on to my baby. (statement 4)	<ul style="list-style-type: none"> a) I can see you are worried about breastfeeding your baby? b) Would you like me to explain to you about how the HIV virus is passed from mothers to babies? c) What have you heard about other options for feeding your baby?
(underline the feeling words, then make up your own empathizing response) Angelina brings Sammy to see you. He is nine months old. Angelina is worried. She says "Sammy is still breastfeeding, and I feed him three other meals a day, but I am so upset, he still looks so thin". What would you say to Angelina to empathize with how she feels?	Response: _____

Skill 6. Avoid words which sound judging

"Judging words 'are words like, right, wrong, well, badly, good, enough, properly. If you use these words when you ask questions, you may make a mother feel that she is wrong or that there is something wrong with her baby. However, sometimes you need to use the 'good' judging words to build a mother's confidence (Refer to "Building

Confidence and giving support”

Exercise 7.d Translating judging words

Ask participants to look at the list of JUDGING WORDS on their manuals.

JUDGING WORDS			
Well	Normal	Enough	Problem
Good Bad Badly	Correct Proper Right Wrong	Adequate Inadequate Satisfied Plenty of sufficient	Fail Failure Succeed Success
USING AND AVOIDING JUDGING WORDS			
English	Local Language	Judging question	Non-judging question
Well		Does he suckle well?	
Normal		Are his stools normal?	
Enough		Is he gaining enough weight?	
Problem		Do you have any problems breastfeeding?	

SUMMARY: LISTENING AND LEARNING SKILLS

1. Use helpful non-verbal communication
2. Ask open ended questions
3. Use responses and gestures which show interest
4. Reflect back what the mother says
5. Empathize – show that you understand how she/he feels
6. Avoid word which sound judging

BUILDING CONFIDENCE AND GIVING SUPPORT

This counseling skills topic is about “building confidence and giving support. A mother easily loses confidence in herself. This may lead her to feel that she is a failure and give in to pressure from family and friends. You need these skills to help her to feel confident and good about herself.

It is important not to make a mother feel that she has done something wrong. A mother easily believes that there is something wrong with herself, how she is feeding her child, or with her breastmilk if she is breastfeeding. This reduces her confidence.

It is important to avoid telling a mother what to do. Help each mother to decide for herself what is best for her and her baby. This increases her confidence.

Skill 1. Accept what a mother thinks and feels

Sometimes a mother has a *mistaken idea* that you do not agree with. If you disagree with her, or criticize, you

make her feel that she is wrong. This reduces her confidence. If you agree with her, it is difficult later to suggest something different.

- It is more helpful to *accept* what she thinks.

Accepting means responding in a neutral way, and not agreeing or disagreeing.

- **“Reflecting back”** and “responses and gestures which show interest” are both useful ways to show acceptance as well as being useful listening and learning skills.
- Sometimes a mother feels very upset about something that you know is not a serious problem.

If you say something like *“Don’t worry, there is nothing to worry about”* you her feel that she is wrong to feel the way that she does.

This makes her feel that you do not understand, and it reduces her confidence. If you accept that she is upset, it makes her feel that it is alright to feel the way she does, so it does not reduce her confidence.

- **Empathizing** is one useful way to show acceptance of how a mother feels.

Exercise 8.a Accepting what a mother THINKS

How to do the exercise:

Examples 1-2 are some misconceptions which mothers might hold. Beside each mistaken idea are three responses. One agrees with the idea, one disagrees, and one accepts the idea, without either agreeing or disagreeing. Beside each response write whether the response agrees, disagrees or accepts.

Example 1:

1. Mother of a six-month-old baby:	“You do not like to give him breastmilk just now”	Accepts
2. “My baby has diarrhea, so it is not good to breastfeed now”	“It is quite safe to breastfeed a baby when he has diarrhea”	Disagrees
	“It is often better to stop breastfeeding a baby when he has diarrhea	Agrees

To answer:

		Choose one: <i>Accepts/Disagrees/Agrees</i>
Mother of a one-month-old baby:	“Oh, that is not necessary! Breast milk contains plenty of water”	
	“Yes, babies may need extra drinks of water in this weather”	

	"You feel that he needs drinks of water sometimes"	
Mother of a nine-month-old baby: "I have not been able to breastfeed for two days, so my milk is sour"	"It is quite safe to breastfeed a baby when he has diarrhea"	
	"Breast milk is not very nice after a few days"	
	You are worried that your breastmilk may be sour?"	
	"But milk never goes sour in the breast"	

How to do the exercise:

Examples 3-5 are some more mistaken ideas which mothers might hold.

Make up a response that **accepts** what the mother says, **without disagreeing or agreeing**

Example 2:

Mother of a one-week old baby: "I don't have enough milk because my breasts are so small"	"Mm, mothers often worry about the size of their breasts I see you are worried about the size of your breasts" "Ah ha"
--	---

To answer:

<p>"The first milk is not good for a baby – I cannot breastfeed until it has gone"</p> <p>a) "I don't let him suckle for more than ten minutes, because it would make my nipples sore"</p> <p>b) "I need to give him formula now that he is two months old. My breast milk is not enough for him now".</p>

Exercise 8.b Accepting what a mother FEELS

How to do the exercise.

After the Stories A, and B below, there are three responses. Mark with a "√" the response which shows acceptance of how the mother feels.

Story	Mark with √ the response which shows that you accept how Anywa feels
Anywa delivered a baby boy with a low birth weight, however, the baby was able to breast feed. Anywa tells you about it with smiles.	<p>a. <i>Yah, sometimes, low birth weight babies breast feed.</i></p> <p>b. <i>It is obvious for new born babies to breast feed immediately.</i></p>

	<i>c. This must be so exciting for a low birth weight to ably breast feed?</i>
Marion is in tears. She says that her breasts have become soft again, so her milk must be less, but the baby is only three weeks old.	<i>a. Don't cry – I'm sure you still have plenty of milk</i> <i>b. You are really upset about this, Isn't it?</i> <i>c. Breasts often become soft at this time – it doesn't mean that you have less milk!</i>
Dorah is very bothered. Her son failed the recently concluded Primary Leaving Examinations.	<i>a. You needn't be so bothered – this is quite normal for candidates.</i> <i>b. Some students fail examinations but do pass the second time.</i> <i>c. You must be bothered because of your son's failure in final exams.</i>

Skill 2. Recognize and praise what a mother and baby are doing right

As health workers, we are trained to look for problems. We see only what we think people are doing wrong, and we try to correct them. As counsellors, we must learn to look for and recognize what mothers and babies do right. Then we should praise or show approval of the good practices.

Praising good practices has these benefits:

- It builds a mother's confidence
- It encourages her to continue those good practices
- It makes it easier for her to accept suggestions later.

Exercise 8.c Praising what a mother and baby are doing right

How to do the exercise:

- For Story C below, there are three responses. They are all things that you might want to say in response.
- Mark with a ✓ the response which praises what the mother and baby are doing right, to build the mother's confidence.
- For Story D make up your own response which praises the mother.

Story	Mark with ✓ which praises what she is being done right. response which shows that you accept how Anywa feels
Example A 15 year old girl dropped out of school, however she stays home supporting her parents	<i>a. You should go back to school, education is the key to success.</i> ✓ <i>b. It is good that you are helping your parents with home worker.</i> <i>c. It is better not to get married until after 18 years of age.</i>
The mother of a three-month-old baby says that he is crying a lot in the evenings, and she thinks that her milk	<i>a. Many babies cry at that time of day - it is nothing to worry about.</i> <i>b. He is growing very well - and that is on your breast milk alone.</i> <i>c. Just let him suckle more often - that will soon build up your milk</i>

supply is decreasing. The baby gained weight well last month.	supply.
A four-month-old baby is completely fed on replacement feeds from a bottle. He has diarrhoea. The growth chart shows that he weighed 3.5 kilos at birth, and that he has only gained 200 grams in the last two months. The bottle smells very sour.	a. Many babies cry at that time of day - it is nothing to worry about. b. He is growing very well - and that is on your breast milk alone. c. Just let him suckle more often - that will soon build up your milk supply.

Skill 3. Give practical help

Sometimes practical help is better than saying anything.

For example:

- when a mother feels tired or dirty or uncomfortable
- when she is hungry or thirsty
- when she has had a lot of information already
- when she has a clear practical problem

Some ways to give practical help are these:

- Help to make her clean and comfortable
- Give her a drink, or something to eat
- Hold the baby yourself while she gets comfortable, or washes, or goes to the toilet.

Practical help also includes showing caregivers how to prepare feeds rather than just giving them a list of instructions. It also includes practical help with breastfeeding such as helping a mother with positioning and attaching, expressing breast milk, relieving engorgement or preparing complementary feeds.

Skill 4. Give a little, relevant information

Relevant information is information that is useful for a mother **now**.

When you give a mother information, remember these points:

- a) Tell her things that she can do today, not in a few weeks' time
- b) Explaining the reason for a difficulty is often the most relevant information when it helps a mother to understand what is happening.
- c) Try to give only one or two pieces of information at a time, especially if she is tired, and has already received a lot of advice.
- d) Wait until you have built her confidence, by accepting what she says, and praising what she and her baby do right. You do not need to give new information or to correct a mistaken idea immediately.
- e) Give information in a positive way, so that it does not sound critical. This is especially important
- f) if you want to correct a mistaken idea.

Exercise 8.d Giving a little, relevant information

How to do the exercise:

1. Below is a list of six mothers with babies of different ages.
2. Beside them are six pieces of information (a, b, c, d, e and f) that those mothers may need; but the information is not opposite the mother who needs it most.
3. Match the piece of information with the mother and baby in the same set for whom it is MOST RELEVANT AT THAT TIME.
4. After the description of each mother there are six letters.
5. Draw a line from join the statement with a line to information which is most relevant for her.

As an example, the correct answer for Mother 1 is e.

To answer:

Mothers 1-6	Information
1. Mother returning to work	a. Foremilk normally looks watery, and hindmilk is thicker
2. Mother with a 12-month-old baby	b. Exclusive breastfeeding is best until a baby is six months old
3. Mother who thinks that her milk is	c. More suckling makes more milk.
4. Mother who thinks that she does	d. Colostrum is all that a baby currently
5. Mother with a two-month-old baby	e. Night breastfeeds are good for Baby and help to keep up the milk supply
6. A newly delivered mother who wants to give her baby pre-lacteal feeds	f. Breastfeeding is valuable for two years or more

Skill 5. Use simple language

Use simple familiar terms to explain things to mothers. Remember that most people do not understand the technical terms that health workers use.

Exercise 8.e Using simple language

How to do the exercise:

Below are two pieces of information that you might want to give to mothers. The information is correct, but it uses technical terms that a mother who is not a health worker might not understand. Rewrite the information in simple language that a mother could easily understand.

Example	Using simple language
Information: Colostrum is all that a baby needs in the first few days	<i>"The first yellowish milk that comes is exactly what a baby needs for the first few days."</i>
To answer (try to translate the information into simple language)	
Information: 1. Exclusive breastfeeding is best up to six months of age	
2. To suckle effectively, a baby needs to a well attached to the	

breast	
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Skill 6. Make one or two suggestions, not commands

Be careful not to tell or command a mother to do something. This does not help her to feel confident.

Instead, when you counsel a mother, suggest what she could do differently. Then she can decide if she will try it or not. This leaves her feeling in control and helps her to feel confident.

Exercise 8.f making one or two suggestions, not commands

How to do the exercise:

Examples 1-2 are some commands which you might want to give to a breastfeeding mother. Rewrite the commands as suggestions. The box below gives some examples of ways to make suggestions, not commands. You may find this helpful when doing the exercises below.

Commands use the imperative form of verbs (give, do, bring) and words like *always, never, must, should*.

Suggestions include:

- Have you considered....?
- Would it be possible....?
- What about trying...to see if it works for you?
- Would you be able to?
- Have you thought about....? Instead of....?
- You could choose between....and....and....
- It may not suit you, but some mothers..... a few women....
- Perhaps.... might work.
- Usually.... Sometimes.... Often....

Example

Command: "Keep the baby in bed with you so that he can feed at night!"

Suggestions: "*It might be easier to feed him at night if he slept in bed with you.*" "*Would it be easier to feed him at night if he slept with you?*"

To answer

1. Command: Do not give your baby any drinks of water or glucose water, before he is at least six months old!

Suggestion: _____

Command: Feed him more often, whenever he is hungry, then your milk supply will increase!

Suggestions:

SUMMARY: CONFIDENCE AND SUPPORT SKILLS

1. Accept what a mother thinks and feels
2. Recognize and praise what a mother and a baby are doing right
3. Give practical help
4. Give a little, relevant information
5. Use simple language
6. Make one or more suggestions not commands

MODULE 2

MATERNAL AND ADOLESCENT NUTRITION

A woman's nutritional status before and during pregnancy and lactation influences the baby's and her own health. In Uganda micronutrient deficiencies in pregnant women and lactating mothers is of great concern as it is leading to anaemia in pregnancy with increased risk to ill health and death to mothers and the newly born babies (LBW). Inadequate intake of folic acid is a leading factor to babies born with birth defects like spinal bifida. Prevention and control of malnutrition among women in reproductive age is key. Scale up of Age-appropriate interventions targeting adolescent girls, women of reproductive age is very important.

Learning Objectives

By the end of the Module participants should be able to:

- | | | |
|-----|--|------------|
| 2.1 | Discuss the importance of maternal nutrition, causes and consequences of maternal malnutrition and Essential Nutrition Actions to promote maternal nutrition | 80 minutes |
| 2.2 | Discuss the importance of Adolescent nutrition, causes and consequences of Adolescent malnutrition and Essential Nutrition Actions to promote Adolescent nutrition | 80 minutes |

Total time	160 minutes
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Session 2.1 MATERNAL NUTRITION

Learning objectives

By the end of this module participants should be able to:

- Discuss the importance of maternal nutrition
- Describe the nutritional requirement of pre-pregnant, pregnant women and breastfeeding mothers
- Discuss causes and consequences of maternal malnutrition
- Discuss essential nutrition actions to promote good nutrition for pre-pregnant, pregnant women and breastfeeding mothers

1. Importance of maternal nutrition

Meaning of maternal nutrition

Maternal nutrition refers to consumption and utilization of food by a woman during any stage of reproductive age which eventually affect her health and the health of the foetus and/or infant:

- It is necessary that a woman is well nourished before pregnancy so that by the time she conceives, the body has sufficient capacity to meet both her and the baby's health.
- Pregnancy and breastfeeding increase the body's demand for energy, protein, and other nutrients.
- During pregnancy women have high nutrient needs because they have to build foetus tissue, build reserves for breast milk and also cater for their own nutritional needs.
- A malnourished woman may fail to deliver baby alive or if she does, the baby is likely to be underweight.
- Poor nutrition in pregnancy is linked to undernourishment in-utero which results in low birth weight, pre-maturity, and low nutrient stores in infants.
- Women who cannot increase their consumption to meet these needs have a higher risk of malnutrition, morbidity and mortality.


2. Nutritional Requirements of Pregnant Women and breastfeeding mothers

Pregnant woman

- A pregnant woman needs extra nutrients to keep healthy, provide nourishment for her growing baby and store some for the breastfeeding period. The daily energy requirement for a pregnant woman is 2500 kcal. Below are the nutritional requirements of pregnant women.
- Pregnant women need to consume balanced diet following the guidelines below for selecting energy giving foods (The Go foods), Body building foods (the GRO foods) and the protective foods (The GLOW foods).
- More specially, pregnant women need to consume foods rich in calcium (e.g, Milk, eggs, Silver fish-Mukene/omena, Simsim) to take care of the increased requirement for building the foetus skeletal structure.
- Pregnant women need to eat more iron rich foods and Vitamin A rich foods in addition to the balanced diet, as iron needs are highly increased due to increased blood volume and to build reserves for child during breastfeeding in the first six months after birth.
- To meet these requirements, a pregnant women should receive at least one addition meal on top of the usual three meals (Breakfast, Lunch and Supper) and can be taken as snacks in between meals
- A pregnant woman needs extra nutrients to keep healthy, provide nourishment for her growing baby and store some for the breastfeeding period. The daily energy requirement for a pregnant woman is 2500kcal. .

Weight gain during pregnancy

During pregnancy, physiological changes take place reacting higher demand for nutrients. These include increase in size of the uterus, increased blood volume in the placenta, enlargement of the breast in preparation for breastfeeding and growth of the foetus. These changes impact on the nutritional requirement of the pregnant mothers



- 2 kg body change for breastfeeding
- 4 kg blood and fluids
- 2/3 kg placenta
- 3.3 kg baby
- 1 kg uterus

- Weight gain during pregnancy is an important consideration because newborn weight and health status tend to increase as weight gain increases.
- Birth weights of infants born to women with weight gains of 7kg for example, average 3.3Kg. A woman gains a total of 11kg during pregnancy.
- Rates of low birth weight are higher in women gaining too little weight during pregnancy

Restricted weight gain to levels below the recommended ranges is not recommended. It is associated with increased infant death and Low Birth Weight, poorer offspring growth and development

Breastfeeding mother

- Nutritional requirements during breastfeeding are higher than during pregnancy because the mother has to produce enough milk to sustain a baby (bigger than the foetus) for the 1st 6 months and beyond. Breastfeeding women need to eat a wide variety of foods from the food groups
- Nutrition guidelines for pregnant women apply here as well, but a lactating woman needs to eat much more ie two extra meal (five meals a day).
- Breastfeeding mothers should also take a lot of fluids to cater for the high amount of water used to make breastmilk. They should avoid self-medication, smoking and alcohol to prevent intoxicating the baby
- Breastfeeding mothers should avoid stress and have enough rest
- Nutritional needs during breastfeeding are increased in response to breast milk production. The needs must meet the requirements of both baby and mother. The daily energy requirements for a breastfeeding mother is 3300kcal. This includes energy for milk production of 500kcal for the first six months and 400 kcal during the next six months.

Energy and Nutrients	Food group	Commonly eaten foods	Importance
Macronutrients			
Carbohydrates	Cereals	Millet, Sorghum, Maize, Rice, wheat or any other grains/food made from these food (Kwon, Atapa, Inyasi, Bread, porridge, noodles)	provides energy for pregnant woman and her baby

<ul style="list-style-type: none"> • A pregnant woman requires 2500kcal of energy daily, • A breastfeeding mother requires 3300kcal of daily energy <p>(55% provided by Carbohydrates)</p>	Roots and Tubers	Cassava, Sweet potatoes, Irish potatoes, yams etc	Provides energy for breastfeeding woman
<p>Protein</p> <ul style="list-style-type: none"> • A pregnant mother needs additional 6g per day to the normal requirement of 75-100 g/day of the non-pregnant woman • Breastfeeding mother requires 75-100g/day to maintain the normal requirement <p>Protein provides 33% of their daily energy</p>	Organ meats	Liver, Kidney, heart and other parts of the organ meat or blood-based foods	<p>Protein is needed for growth of foetal tissue including the brain, helps in breast growth, uterine tissue, and increased blood</p> <p>it is important for the normal development of the unborn child's neural tube - the structure that becomes the brain and spinal cord</p> <p>For breastmilk production and provision of protein</p>
	Flesh meats	Rabbits, Edible rats (Anyeri), chicken, ducks, turkey, guinea fowls, beef, pork, lamb (goats/sheep meat) other birds and products made from these	
	Eggs	Chicken, guinea fowl, ostrich and any other edible eggs	
	Fish	Small fish (Mukene/Omena/Muziri/wanjiri/nangnang), Nile perch (Mputa, Pedo), Tilapia, Mud-fish, Cat-fish, Lung-fish, Angara, Masoni, Maale-fish, etc	
	Legume (Beans and Peas), Nuts and Seeds	<p>Beans: (Kidney beans, broad beans, white beans, black eye beans), Peas (gram peas (coroko), chick</p> <p>Peas: (Lapena/apena/kapenda), green peas (cow), cow peas (Osumuna, boo seeds, gobe seeds)</p> <p>NUTS: Groundnuts, Cashew nuts Shear nuts</p> <p>Seeds: Simsim (Sesame, Nyim), melon seeds, Pumpkin seeds etc</p> <p>And products made from these (Odi)</p>	
	Milk and Milk Products	Milk, sour milk. Yoghurt, Cheese and other milk products	

<p>FAT</p> <p>32% of energy consumed are derived from fat</p> <ul style="list-style-type: none"> ➤ 25 to 35% of energy from mono- and polyunsaturated fats (plant based) <p>Less than 10% energy consumed from saturated and trans-fats (animal fats)</p>	<p>Oils and Fats (added to food or used for cooking)</p>	<p>Vegetable oils (Sunflower, shearnut oil (Moo Yaa), simsim oil, groundnut oil, palm oil etc)</p> <p>FATS: Ghee, Butter, Margarine, Lard etc</p>	<ul style="list-style-type: none"> • Fat provides pregnant woman and unborn child with fat-soluble vitamins A, D, E and K and essential fatty acids like omega-3 and omega-6 fats. • Essential fatty acids are particularly important for the developing foetus
<p>Fibre</p>		<p>A fibre-rich diet helps to achieve and maintain regular bowel movements</p> <p>Eat a wide variety of fibre rich diet every day and take plenty of fluids every day</p>	<p>Fruits, vegetables, legumes, oats, potatoes, whole grain cereals, outer parts of seeds, fruits, and legumes</p>

Important Micronutrients for Pregnant Women and breastfeeding mothers

Important Micronutrients	Importance of Micronutrients	Food Source
<p>Folic acid</p> <ul style="list-style-type: none"> • Pregnant women's requirement rises from 400 to 600 µgm daily. • Eat a variety of folate-rich foods and take folic acid supplement (0.5mg) daily, 1 month before and for the first 3 months of pregnancy. • Breastfeeding mothers require Daily requirement is 500 µgm. 	<p>Folic acid is important for the normal development of the unborn child's neural tube - the structure that becomes the brain and spinal cord (e.g. hydrocephalus, spina bifida) and blood formation, immunity of the body and tissue generation</p>	<p>Liver and kidney, dark green leaves and other fresh vegetables, beans and groundnuts, flesh from animals, poultry and fish, breast milk, whole grain cereals, foods fortified with folate e.g. cereals</p>
<p>Calcium</p> <ul style="list-style-type: none"> • The pregnant women requirement increases during pregnancy from 800mg to 1100mg a day. That's an extra 300mg a day • Breastfeeding mothers require 1000 mg of calcium per day during the first six months after delivery 	<ul style="list-style-type: none"> • Calcium is important for bone health of both the woman and the baby as well as for prevention of pre-eclampsia • Calcium is required for milk production during breastfeeding 	<p>Milk and milk products (Sour milk, Eshabwe, yoghurt etc) Cabbage Eggs Small fish (Mukene, Nkeje, Nangnang etc)</p>

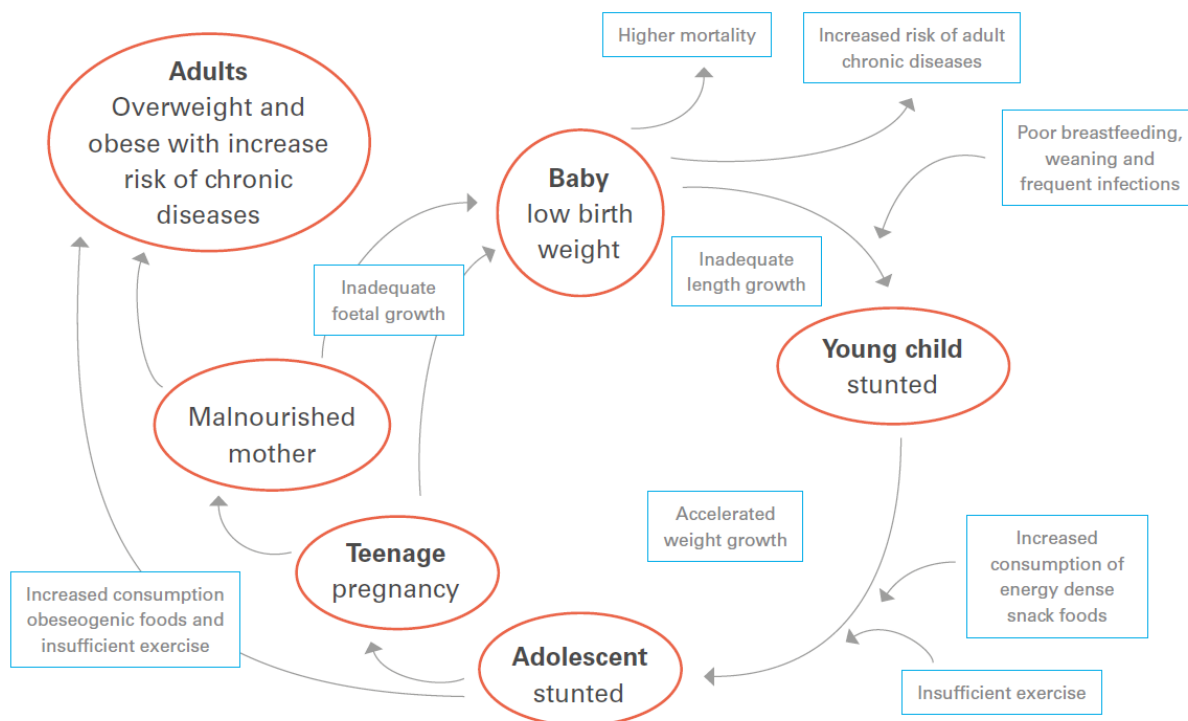
<p>Iron</p> <ul style="list-style-type: none"> • Pregnancy Increases by 10 – 20 mg a day. Eat a variety or iron rich foods. • Pregnant women should take an additional daily supplement of iron 25 mg • Breastfeeding Daily requirement is 9mg. Eat a variety or iron rich foods. • Take an additional daily supplement of iron 25 mg 	<ul style="list-style-type: none"> • Iron is needed for blood formation for both the woman and her baby. Baby builds his/her own iron reserves and by taking the iron from the mother's body. • Eat a variety of iron rich foods. • Take an additional daily supplement of iron 25 mg to meet the increase requirement 	<p>Whole grains and products (millet bread, oatmeal, brown bread). Green leafy vegetables Organ meats and flesh meats</p> <p>NB</p> <ul style="list-style-type: none"> • Foods containing iron absorption inhibitors should be avoided: (e.g. tea/ coffee) just before, during and shortly after meals • Tea/ coffee should be taken two or more hours before or after a meal or taking iron supplements as this may interfere with iron absorption • Vitamin C rich foods (Oranges, tangerines, mangoes) or animal-based foods (meat and fish products) when eaten with meals, increase iron absorption • Iron fortified foods when consumed, increases iron level (cereals). •
<p>Vitamin C</p> <ul style="list-style-type: none"> • During pregnancy, requirement increases from 10 to 50mg per day. • A breastfeeding mother requires 120mg 	<p>It is needed for iron absorption.</p>	<p>Green leafy vegetables daily Fruits (orange, raw mango, tangerine, tamarind, passion fruits, tomatoes, etc)</p>

Missing Vicious Cycle of Malnutrition (this is referred to in the Health Facility Facilitators Manual). Please see the text below that explains the intergenerational cycle of malnutrition that is vicious

Vicious Cycle of Malnutrition

Evidence shows that there is a linkage between inadequate maternal nutrition and child growth that can result in a vicious cycle of poor maternal nutrition status and inadequate child growth. Small, undernourished women are more likely to have low birth weight (LBW) babies. Children who are born with low birth weight are more likely to have growth failure during childhood and are more likely to become small adult women. This cycle is further worsened when the girl starts to bear children as an adolescent. Evidence also indicates that undernutrition early in life and in utero may predispose to overweight and noncommunicable diseases such as diabetes and heart disease later in life. Overweight in

mothers is also associated with overweight and obesity in their offspring. These biological factors along with environmental and societal factors can contribute to malnutrition across the lifecycle.



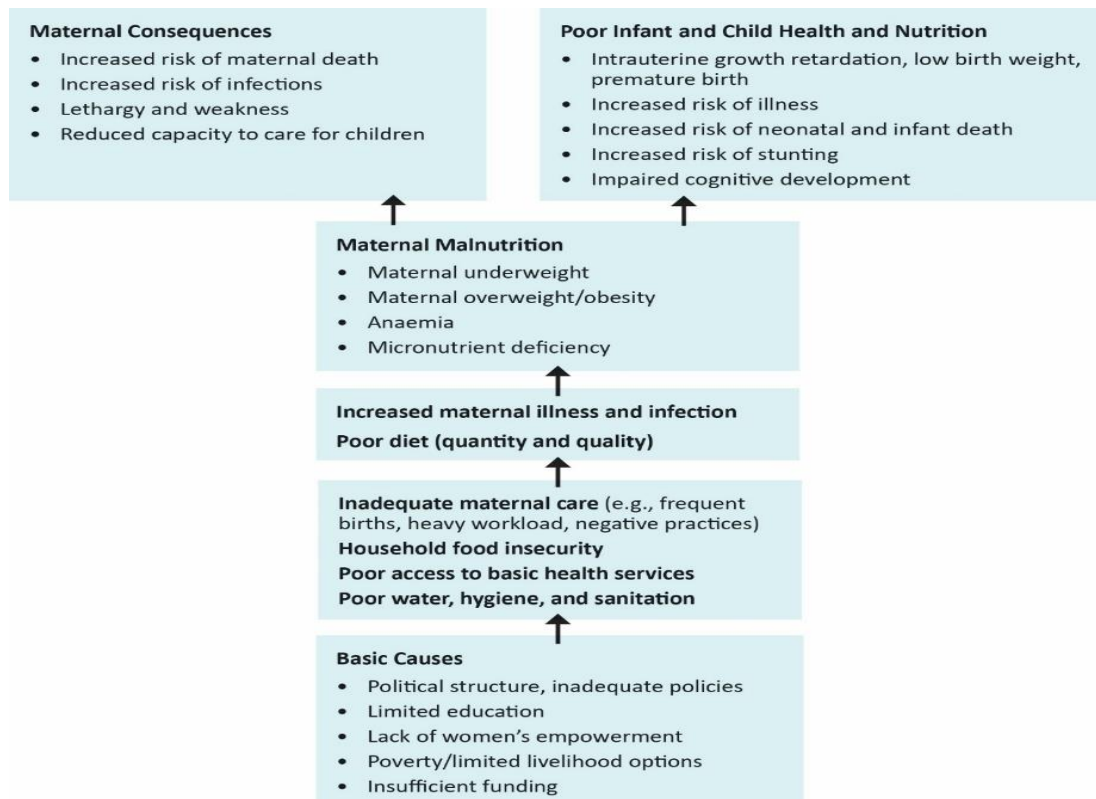
Ref: Shrimpton R. and Rokx C. The Double Burden of Malnutrition: a review of global evidence. HNP Discussion Paper. World Bank, June 2012.

3. Causes and Consequences of Maternal Malnutrition

- Maternal malnutrition increases the risk of pregnancy outcomes like complications leading to death during labour or delivery for the mother. Among the consequences of maternal undernutrition, is the increased risks of giving birth to an underweight child who, if female, will be at greater risk of a more difficult labour during her own pregnancy unless the undernutrition cycle is broken. Malnutrition undermines women's productivity, capacity to generate income, and ability to care for their families.
- Maternal malnutrition including overweight/obesity and underweight, can occur during preconception, pregnancy, and breastfeeding periods.
- Maternal malnutrition weakens women's ability to survive childbirth, makes them more susceptible to infections, and leaves them with fewer reserves to recover from illness.
- Duration of gestation, smoking, maternal health status, gravida and parity negatively influence birth weight of the new-born
- Low weight gain in pregnancy may increase the risk that infants will develop heart disease, type 2 diabetes, hypertension and other types of chronic disease later in life
- Underweight women tend to retain some of the weight gained in pregnancy than do other women

- Overweight and obese women can use a portion of that energy stores to support fetal growth, so they need to gain less
- Cesarean section deliveries and post-partum weight retention tend to be higher when pregnancy weight gain exceeds that recommended
- Insulin resistance may be related to excessive weight gains during pregnancy and some of the neonatal outcomes

Causes and consequences of maternal malnutrition



Measures to control of parasites and infections among pregnant women include:

- a) Malaria control and prevention such as sleeping under an insecticide treated net every day; early diagnosis and prompt treatment of malaria infection at a health unit by trained health providers; and clearing of mosquito breeding places such as stagnant water, and bushes in home environment. All pregnant women should be given preventive doses of fansidar during the second and third trimesters; and
- b) Pregnant women should receive deworming medication after the first trimester, when it is safe.

Essential Nutrition actions to promote maternal nutrition

Maternal period	Essential Nutrition Actions
Pre-conception	<ul style="list-style-type: none"> • Counsel all women to consume diverse and nutritionally rich local foods from varied sources (grains, green leafy vegetables, vitamin rich vegetables and fruits, nuts, meats, eggs, fish) that are rich in iron, folate, iodine, vitamin A, D, E, K • Promote consumption of clean and safe drinking water and personal and environmental hygiene • Provide folic acid as a supplement, in addition to adequate intake of foods rich in folic acid (e.g. green leafy vegetables, eggs, legumes) to women prior conception in order to prevent neural tube defects in new-borns • Promote physical activity to stay healthy.
Pregnancy	<ul style="list-style-type: none"> • Counsel pregnant women on: <ul style="list-style-type: none"> ○ Consumption of diverse foods from the food groups locally available including fruits and vegetables, animal products, and fortified and biofortified foods (including use of iodized salt, orange sweet potatoes, Iron beans etc). ○ Consumption of one extra meal in addition to the usual number of meals ○ physical activity to stay healthy and prevent excessive weight gain ○ practicing adequate personal and environmental hygiene ○ Maternal nutrition and IYCF nutrition ○ Sleeping under ITNs <p>Preventive Treatment for Worm Infestations: Albendazole 400 mg as a single dose (at 1st contact but not in the 1st trimester) Or Mebendazole 500mg as a single dose (at 1st contact but not in the 1st trimester).</p> <p>Malaria Control: Fansidar/SP, (IPT) for Malaria Intermittent Preventive treatment (IPT) with Sulfadoxine/Pyrimethamine (SP) is the recommended medicine for IPT. 3 tablets single dose during: 2nd trimester (4-6 months) and 3rd trimester (7-9 months) by Directly Observed Therapy (DOT) at least one month apart. Do not give fansidar in the first trimester (first 3 months).</p> <p>Iron folic acid Supplementation: Pregnant women during Antenatal Care (ANC), Daily Iron: 60mg of elemental iron (200mg of ferrous sulphate) 400µg folic acid OR Daily Combined iron (150mg with 0.5mg folic acid) Provide iron and folic acid to pregnant women</p> <p>Measure haemoglobin (HB) level of all pregnant women at first ANC and subsequent visits</p> <ul style="list-style-type: none"> • Encourage all pregnant women to attend at least eight recommended ANC contacts at health facilities • Educate partners, household, and community members on the importance of reducing workload and providing sufficient rest for pregnant mothers

Post-natal care and Breastfeeding	<ul style="list-style-type: none"> • Counsel and encourage early initiation of breastfeeding, provide nutrition and breastfeeding counselling to ensure optimal nourishment for both mother and baby • Promote the consumption of two extra adequate meals for all breastfeeding women • Promote and support access to at least four post-partum care visits where mothers can receive appropriate support, nutrition, and breastfeeding counselling • Counsel women on the role of, and conditions for, exclusive breastfeeding as a method of family planning in addition to other family planning recommendations.
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IRON/FOLIC ACID SUPPLEMENTATION STRATEGY FOR WOMEN IN THE REPRODUCTIVE AGE GROUP

Iron Deficiency Anaemia/folic acid deficiency

Iron Deficiency Anaemia is a common type of anaemia – a condition in which blood lacks adequate healthy red blood cells. Red blood cells carry oxygen to the body’s tissues. IDA is due to insufficient iron. Without enough iron, your body cannot produce enough of a substance in red blood cells that enables them to carry oxygen (hemoglobin). As a result, IDA may leave one tired or short of breath.

Importance of Iron and/or folic acid supplementation before, during and after pregnancy (Lactation)

- Anaemia increases risks during pregnancy and childbearing. During delivery, an anemic woman is likely to bleed severely, and she may die. IDA causes most maternal deaths during delivery.
- Babies born to anemic women are at risk of being preterm; low birthweight (LBW), being anemic or dying

Rationale and strategies for controlling iron deficiency anaemia

The strategies for controlling iron deficiency anaemia address physiological needs during the reproductive cycle of women. Target Group for iron deficiency anaemia prevention among women of reproductive age focuses on meeting requirements of women during:

- Preconception period
- During pregnancy
- During lactation

(a) **Preconception period**

Foetal growth and development are influenced by the nutritional status of the mother in the period before she conceives and at the time of conception. This preconception period is therefore considered to be an important time for interventions

(b). **Pregnancy period**

There is increased demand for micronutrients during pregnancy. The micronutrient deficiencies increase the risk of maternal morbidity and mortality during the pregnancy, delivery, and postpartum periods.

- All pregnant women should be encouraged to attend at least four (4) ANC sessions at health facilities during which they should receive iron and folic acid supplementation according to nationally accepted protocols to prevent anemia.

- Pregnant women should be counseled to ensure compliance with the recommended iron and folic acid supplementation intake of at least 90+ tablets
- The pregnant woman should be counseled on side effects
- Assess for severe pallor to identify severely anemic women and administer treatment appropriately.
- Health education and counseling on appropriate diet in pregnancy should be conducted at every antenatal care visit.

(c) Breastfeeding Period

Overall nutritional requirements during postnatal period are high due to:

- The need to produce breast milk
- The need to promote recovery and sustain the mother's health
- Increased physical activity compared to pregnancy

To prevent anemia in mothers during lactation/breast feeding, supplementation with 1 tablet/day (60mg) for three (3) months after delivery is recommended in addition to the intake of iron-rich foods.

Target Group	Recommended dose/Action	Key messages
Pre-conception Period Women (15-49 Years)	400µg folic acid. Daily for one-month preconception	<p>Folic acid supplementation and adequate iron/folate rich foods are recommended. Folic acid also plays a major role in the production of red blood cells.</p> <ul style="list-style-type: none"> • The neural tube closes during the 4th week of pregnancy - a time when most women may not even know they are pregnant. • In the pre-conception period, neural tube defects (NTDs) can be prevented with folic acid supplementation, either alone or in combination with other vitamins and minerals. <p>The role of folic acid at preconception is to reduce the risk of birth defects of the brain and spine, called neural tube defect (NTD) in the newborn</p>
Pregnancy	<p>Pregnant women during Antenatal Care (ANC) Daily Iron: 60mg of elemental iron (200mg of ferrous sulphate) 400µg folic acid OR Daily Combined iron (150mg with 0.5mg folic acid)</p>	<ul style="list-style-type: none"> • Pregnant women should <ul style="list-style-type: none"> - Start supplementation after 3 months of gestation. - Take supplement daily for 6 months - Take supplement with food to overcome side effects - e.g. indigestion and nausea <p>Three (3) months after completing this treatment, pregnant women should continue with routine preventive supplementation of iron and folic acid.</p>
Lactating mother-postnatal	<p>Iron: 60mg of elemental iron (200mg of ferrous sulphate) Folic acid: 400µg</p>	<p>To prevent anemia in mothers during lactation/breast feeding, supplementation with 1 tablet/day (60mg) for three (3) months after delivery is recommended in addition to the intake of iron-rich foods.</p>

Session 2.2: Adolescent Nutrition

Adolescence is commonly understood as the life-stage between the end of childhood and the beginning of adulthood. Adolescence is a time of significant growth and development from the age of 10 – 19 years old. This is a period of increased nutritional demands due to the rapid growth spurt.

Good nutrition for adolescents promotes proper growth and development for adolescents to reach their full potential and help prevent adult diet-related chronic diseases such as cardiovascular disease, cancer and osteoporosis. Addressing the nutritional need of adolescence, particularly the adolescent girl, is key to achieving the SDG and ending malnutrition by 2030

Learning Objectives

- Explain the importance of Adolescent nutrition
- Describe the nutritional requirement of Adolescents
- Discuss causes and consequences of Adolescent malnutrition
- Discuss essential nutrition actions to promote good nutrition for Adolescents

1. Importance of Nutrition in Adolescents

Adolescence is a window of opportunity for ;

- a) improvement of nutritional status and correcting poor nutritional practices. During this time, physical changes affect the body's nutritional needs, while, changes in one's lifestyle may affect eating habits and food choices.
- b) supporting the physical growth of the body and for preventing future health problems.
- c) preparing for the nutritional demands of pregnancy and lactation that girls may experience in later life. All parents should therefore pay attention to the nutritional needs of their adolescent girls.

2. Nutritional requirement of Adolescents

Any **nutritional deficiency** experienced during this critical period of life can have an effect on the future health of the individual and their offspring. For example, failure to consume an adequate diet at this time can result in delayed sexual maturation and delayed or retarded physical growth. The rapid physical changes of adolescence have a direct influence on a person's nutritional needs. The growth spurt that occurs in adolescence, second only to that in the first year of life, creates increased demands for energy and nutrients. Nutritional status and physical growth are dependent on one another such that optimal nutrition is a requisite for achieving full growth potential.

Increased requirement of nutrients during Adolescence

- A burst of growth in height known as the adolescent growth spurt, usually occurs between 11 and 15 years for well-nourished girls and 13 – 17 years for boys. It may be delayed if the child is malnourished. This is the time when boys and girls develop into young men and women and require higher levels of energy and nutrients.
- Male adolescents require **2500 – 3000 Kcal/day**, much more energy than adolescent girl

Adolescent girls require **1,400 - 2,400 Kcal/day**, less at early adolescence (e.g, 13 years old girl 1,400 Kcal/day) and more later (e.g, 17-year-old athlete girl needs about 2,400 Kcal/day).

- Adolescent boys need more proteins and calcium than adolescent girls for muscle and bone development.
- Additional intake requirements include fats, calcium, iron, zinc, vitamins and fibre. This is a significant increase from childhood requirements. To meet these calorie needs, adolescents should choose a variety of healthful foods, such as lean protein sources, low-fat dairy products, whole grains, fruits, and vegetables.
- *Adolescent girls who menstruate.* These girls lose blood each month so need meals which provide the nutrients for making hemoglobin and red blood cells, Iron, folate, vitamin A and vitamin B12 and protein
- Adolescent girls who become pregnant: Girls grow and develop until they are about 15-17 years old. Unfortunately, some girls become pregnant or are already mothers during adolescence. Pregnancy, childbirth, and breastfeeding put additional nutritional demands on these still growing girls. Adolescent need extra foods of all kinds, especially foods which provide iron. If they do not eat enough, they may become anemic. Their babies may have a low birthweight

Macronutrients Requirements	Food group	Food Source	Importance
• Carbohydrates 130 g/day (55% of daily energy needs)	Cereals	Millet, Sorghum, Maize, Rice, wheat or any other grains/food made from these food (<i>Kwon, Atapa, Inyasi, Bread, porridge, noodles</i>) <i>Enriched or fortified bread or cereal is more nutritious.</i>	Provides energy for growth and development and physical activity and basic functioning
	Roots and Tubers	Cassava, Sweet potatoes, Irish potatoes, yams etc <i>Orange flesh sweet potatoes more nutritious since they also contain high levels of vitamins such as vitamin A,.....</i>	
• PROTEINS 26g per day (30% of daily energy requirement)	Organ meats	Liver, Kidney, heart and other parts of the organ meat or blood-based foods	Needed for growth during the adolescence growth spurt, development and repair of body tissues, maintenance of existing lean body mass
	Flesh meats	Rabbits, Edible rats (Anyeri), chicken, ducks, turkey, guinea fowls, beef, pork, lamb (goats/sheep meat) other birds and products made from these	
	Eggs	Chicken, guinea fowl, ostrich and any other edible eggs	
	Fish	Small fish (Mukene/Omena/Muziri/wanjiri/nangnang), Nile perch (Mputa, Peto), Tilapia, Mud-	

		fish, Cat-fish, Lung- fish, Angara, Masoni, Maale-fish, etc	
	Legume (Beans and Peas), Nuts and Seeds	<p>Beans: (Kidney beans, broad beans, white beans, black eye beans), Peas (gram peas (coroko), chick peas.</p> <p>Peas: (Lapena/apena/kapenda), green peas (cow), cow peas (Osumuna, boo seeds, gobe seeds)</p> <p>NUTS: Groundnuts, Cashew nuts Shear nuts</p> <p>Seeds: Simsim (Sesame,Nyim), melon seeds, Pumpkin seeds etc</p> <p>And products made from these (Odi)</p>	
	Milk and Milk Products	Milk, sour milk. Yoghurt, Cheese and other milk products	Physical growth and development, helps to build strong bones
<ul style="list-style-type: none"> FATS <p>32% of energy consumed are derived from fat</p>	Oils and Fats (added to food or used for cooking)	<p>Vegetable oils (Sunflower, shearnut oil (Moo Yaa), simsim oil, groundnut oil, palm oil etc)</p> <p>FATS: Ghee, Butter, Margarine, Lard etc</p>	<p>Important energy source for growth and development</p> <ul style="list-style-type: none"> ➤ 25 to 35% of energy from mono- and polyunsaturated fats (plant based) <p>Less than 10% energy consumed from saturated and trans-fats (animal fats)</p>
<ul style="list-style-type: none"> FIBRE 		<p>A fibre-rich diet helps to achieve and maintain regular bowel movements</p> <p>Eat a wide variety of fibre rich diet every day and take plenty of fluids every day</p>	Fruits, vegetables, legumes, oats, potatoes, whole grain cereals, outer parts of seeds, fruits, and legumes

Important Micronutrients for Adolescents

Micronutrient and daily requirement	Food source	Importance
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<p>Folic acid/folate</p> <p>Requirement rises from 400 micrograms per day</p>	<p>Liver and kidney, dark green leaves and other fresh vegetables, beans and groundnuts, flesh from animals, poultry and fish, breast milk, whole grain cereals, foods fortified with folate e.g. cereals</p>	<ul style="list-style-type: none"> • It is important for protein metabolism, cell growth and division and forms red blood cells. Protein metabolism, cell growth and division and forms red blood cells Folate is also necessary to prevent certain birth defects during the child-bearing years
<p>Calcium</p> <p>Requirement increases during adolescence, 1,300 mg a day.</p>	<p>Milk and milk products (Sour milk, Eshabwe, yoghurt etc) Cabbage Eggs Small fish (Mukene, Nkejje, Nangnang, marakwang, etc)</p>	<ul style="list-style-type: none"> • Calcium is important for bone health • Physical growth and development Main constituent of bones mass - helps build strong bone
<p>Iron</p> <p>13 mg/per day for adolescent girls</p>	<p>Whole grains and products (millet bread, oatmeal, brown bread). Dark Green leafy vegetables (Dodo (Amaranth), sukuma wiki, cassava leaves, potato leaves, pumpkin leaves, cowpea leaves (Boo, Gobe), Okra leaves (Layu, Otigo lee), spider leaves (Akeyo, Jobyo) etc</p> <p><i>A fibre-rich diet helps to achieve and maintain regular bowel movements</i></p> <p>Organ meats and flesh meats</p>	<ul style="list-style-type: none"> • It is required for growth, formation for blood, required during onset of menses for girls, • Required for growth • Formation of blood - helps transport oxygen to cells Required during onset of menarche
<p>Zinc</p> <p>RDA for zinc is 9 milligrams per day</p>	<p>Sea foods, meats, seeds (Pumpkin seeds, simsim seeds)</p>	<ul style="list-style-type: none"> • Zinc helps the immune system • Builds protein • Necessary for proper growth and development.
<p>Vitamin C Requirement increases from 75 mg per day.</p>	<p>Food sources Green leafy vegetables daily Fruits (orange, raw mango, tangerine, tamarind, passion fruits, jack fruits, tomatoes, etc) Vegetables (malakwang, hibiscus)</p>	<p>It is needed for iron absorption and muscle development</p>
<p>Vitamin A</p>	<ul style="list-style-type: none"> • Vitamin A Rich Vegetables (red, yellow, orange and green leafy vegetables) and Tubers: Pumpkin, Carrots, spinach, orange flesh sweet potatoes and vegetables • Vitamin A Rich fruits: Ripe mangoes, Pawpaw, Water melon, etc • Other vegetables Egg plants, cabbage, tomatoes, onions, cucumber, bitter tomatoes (Ntula) etc 	<ul style="list-style-type: none"> • Required for development of muscles immunity of the body and tissue generation

Vitamin D 700IU/day	<ul style="list-style-type: none"> • Sunshine • Fortified foods with Vitamin D, • Fish oils/oily fish (Nile perch) 	<ul style="list-style-type: none"> • Facilitates intestinal absorption of calcium and phosphorous • Maintains adequate blood levels of calcium and phosphorous • Optimal bone formation
Vitamin C 75mg/day	Fruits (oranges, pineapples, guavas, tamarinds, tangerines etc)	Synthesis of muscles (collagen and connective tissues)
Iodine	Iodized salt	Volatile to heat. When to add it while cooking?

3. CAUSES AND CONSEQUENCES OF ADOLESCENT MALNUTRITION

Dietary inadequacies are the main primary underlying cause, frequently coupled with lifestyle factors and health conditions that further compromise nutritional status.

Any **nutritional deficiency** experienced during this critical period of life can have an effect on the future health of the individual and their offspring. Consequences of malnutrition in adolescent girls affects not only the girls' own health BUT ALSO, their future reproductive health and that of their children. Children of malnourished women are more likely to face cognitive impairments, short stature, lower resistance to infections, and a higher risk of disease and death throughout their lives.

Cause of malnutrition in adolescents include:

- Psychosocial factors e.g. peer pressure, bullying, self-imaging etc.
- Family socio economic status
- Household food insecurity
- lifestyle factors e.g. smoking, alcoholism, drugs, dieting etc.
- Unhealthy dietary choices e.g. high consumption of sweetened beverages;
- frequent consumption of fast food.
- Poor eating habits
- Health conditions- Infections and disease
- Inadequate physical activity
- Heavy menses (girls)
- Inadequate services for adolescent girls
- Stigma
- Poor parenting
- Peer pressure
- Economic/social activities such cattle rearing for long hours without eating

Consequences of Adolescent Girls malnutrition

Chronically undernourished adolescents remain undernourished in adulthood.

If malnourished adolescent girls become pregnant, they are more likely to deliver low birth-weight babies. These babies are more likely to be malnourished during childhood and will grow into stunted adolescents. The vicious cycle of malnutrition will then continue if no interventions are done.

Nutrition of the adolescents is particularly important but **under-nutrition** (too little food or food lacking required nutrients) in adolescents frequently goes unnoticed by their families or the young people themselves. Under-nutrition negatively affects adolescent by:

- Affecting their ability to learn and work at maximum productivity.
- Poor brain development
- Increasing the risk of poor obstetric outcomes for teen mothers such as low birth weight babies,, small children.
- Low productivity
- High morbidity and mortality
- Low quality of life
- Arresting the healthy development of future children.
- Affecting sexual maturation and growth: and
- Preventing the attainment of normal bone strength and the development of healthy teeth if a youth doesn't get enough calcium.
- Anemia (iron deficiency) is recognized as the main nutritional problem in adolescents and adolescent girls are usually have higher anemia rates due to onset of menarche.
- *Adolescence overweight or obesity* may lead to loss of self-esteem, chronic illnesses early in life e.g; cardiovascular disease, gout, diabetes type II, hypertension etc. These adolescents, their families will require counselling and support on eating more fruits and vegetable, eating less energy-rich food, eating fewer unhealthy snacks, and taking more exercise
- Burden to own home and community

4. Essential Nutrition Actions to Promote Adolescent Nutrition

- Counsel adolescent girls and boys on healthy eating to prevent all forms of malnutrition
- Promote fortified foods, bio-fortified foods, and targeted micronutrient supplementation among adolescents in line with national guidelines
- Promote physical activity/exercises among adolescent girls and boys
- Educate and counsel adolescent girls on delaying first pregnancy. (For pregnant adolescents, refer to section on pregnant women of reproductive age)
- Promote provision of quality adolescent-friendly nutrition services in schools, at the health facility, and community levels
- Promote access to safe environment and hygiene practices and provide deworming medications for adolescent girls and boys 10–15 years of age

MODULE 3

INFANT AND YOUNG CHILD FEEDING AND NUTRITION

Introduction

The nutrition of infants and young children is a vital determinant of child survival, growth and development. Uganda has put in place several strategies, policies and interventions to improve child nutrition. Health workers are key in implementation of the policies and guidelines.

Learning Objectives

On completing this module, participants should be able to:

3.1	Discuss the importance of breastfeeding	30 minutes
3.2	Discuss how to promote breastfeeding during pregnancy, labour/delivery and lactation period and common breast conditions	120 minutes
3.3	Explain feeding Infants and Young Children with Special Needs	60 minutes
3.4	Explain how to support families in complementary practices	60 minutes
3.4	Discuss essential nutrition actions to promote good nutrition for infants and young children	30 minutes
Total time		335 minutes

Session 3.1 Importance of breastfeeding

1. Importance of Breastfeeding

Infants 0-6 months old need only breastmilk for proper growth and development. Breastmilk has all the nutrient requirements in the right quantity needed for this age group. It is recommended that infants 0 – 6 months are breastfed at least 8 times a day (every 2 hours, day and night).

Breastfeeding is important to children, to mothers and to families because it protects both infant's and mother's health. It is important that babies are initiated onto breast milk in the first hour of birth to benefit from colostrum which has a purgative effect (clearing meconium) in addition to be the first immunization for the baby (it is antibody rich).

Mother's milk is all a baby need:

- Exclusive breastfeeding is strongly recommended for the first six months. The baby does not need water, other fluids, or foods during this time.
- Breastfeeding continues to be important after the first six months when other foods are given to the baby.

- A mother's milk is especially suited for her own baby and changes from day to day, month to month, and feed to feed to meet the baby's needs. The baby learns the tastes of the family foods through the flavors of breast milk.
- Mother's milk is unique (special). It is a living fluid which actively protects against infection. Artificial formula provides no protection from infections.
- In addition:
 - Breast milk is readily available. There is nothing to buy and it needs no preparation or storage.
 - Breastfeeding is simple, with no equipment needed.
 - Children who are not breastfed are more likely to be:
 - Ill or to die from infections such as diarrhoea and gastrointestinal infections, and chest infections.
 - Underweight and not grow well, if they live in poor circumstances.
 - Overweight and to have later heart problems if they live in rich circumstances.
- Breastfeeding is important to mothers. Women who do not breastfeed are more likely to:
 - To retain fat deposited during pregnancy, which may result in later obesity and related CVDs
 - Become pregnant soon after the baby's birth.
 - Develop breast cancer due to secretion of oxytocin
 - To have hip fractures in older age.
- Breastfeeding is important to families
 - Breastfeeding does not cost money to the family.
 - Breastfeeding reduces health care costs for the family
- Breastfeeding is important to communities
 - Breastmilk is made by the human body and is always available. It is more environment friendly and does not contribute to waste and pollution caused by packaging, processing and transport.

Session 3.2 Promoting breastfeeding during pregnancy, labor/delivery, and lactation period

I. Promoting breastfeeding during pregnancy

Promoting, breastfeeding during pregnancy is meant to ensure that mother and baby start off well with breastfeeding immediately the baby is born.

Story of Fatima to be introduced.

Tima and Maria are at the ANC clinic. While they are waiting, there is a nice talking with a group of pregnant women about feeding their baby. Tima and Maria listen to the talk.

Key topics during group discussion in ANC

- Why breastfeeding is important
- Practices that help breastfeeding to go well
- Breastfeeding in the context of HIV
- Benefits and management of breastfeeding
- Available support for breastfeeding

Fatima tells the health worker that her neighbour told her that she must prepare her nipples for breastfeeding, and that some women's breasts are not good for breastfeeding.

Myths and Misconceptions that hinder breastfeeding

- Breasts too small
- Inverted nipples etc

Antenatal breast and nipple preparation (anticipatory counselling)

Reassure the woman that most women breastfeed with no problems.

- Other body parts, such as ears, nose, fingers, or feet, come in various shapes and sizes and no-one asks if big ears hear better than small ears. Breasts and nipples can look different and still work perfectly well, except in very rare cases.
- Practices such as wearing a tight bra, using creams, performing breast massage or nipple exercises, or wearing breast shells, should not be encouraged.
- Practices such as 'toughening' of the nipples by rubbing with rough towel or putting alcohol on the nipples or excessive pulling are not necessary and may damage the skin and tiny muscles that support breastfeeding and should not be encouraged.

Breast care

- Mothers need to know that; It is not necessary to wash the breasts directly before feeds. This removes protective oils and alters the scent that the baby can identify as his or her mother's breasts.
- Soaps, lotions, oils, and Vaseline all interfere with the natural lubrication of the skin and are not recommended.

A mother who is stopping breastfeeding (she will need some counselling and support) also needs to care for her breasts. Her milk dries up naturally if her baby does not remove it by suckling, but this takes a week or more. She can express just enough milk to keep her breasts comfortable and healthy while her milk dries up.

Women who need extra attention

- Identify women with special concerns. Help them to talk about issues that may affect their plans about feeding their baby. Offer to talk also to significant family members as needed so that they can support the woman. A woman may need special counselling and support if she, for example:
 - Had difficulties breastfeeding a previous baby.
 - Must spend time away from her baby because she has to be away from home.
 - Has a family difficulty. Help her to identify non-supportive family members and try to meet with them to discuss their concerns.
 - Is a young or single mother.
 - Has a medical/surgical problem or needs medication.
- In the rare case where a mother is not breastfeeding, for a medical reason such as cancer therapy or her informed personal decision, then it is important that she knows how to feed her baby. These women need individual discussion about replacement feeding and assistance to learn how to prepare feeds.

II. Promoting breastfeeding during labor and delivery

Practices that can help breastfeeding to go well

- Health facility practices can help breastfeeding to go well. These practices include to:
 - Have a companion with you during labour, which can help you to be more comfortable and in control.
 - Avoid labour and birth interventions such as sedating pain relief and caesarean sections unless they are medically necessary.
 - Have skin-to-skin contact immediately after birth, which keeps the baby warm and gives an early start to breastfeeding.
 - Keep the baby beside you (rooming-in and bedding-in), so that your baby is easy to fed as well as safe.
 - Learn feeding signs in your baby so that feeding is baby led rather than to a schedule.
 - Feeding frequently, which helps to develop a good milk supply.
 - Breastfeeding exclusively with no supplements, bottles, or artificial teats.
- It is important to learn how to position and attach the baby for feeding and a member of staff will help after the baby is born. Most women can breastfeed, and help is available if needed.
- All pregnant women are offered HIV counselling and testing (HCT). If a woman is HI V-infected there is a risk of transmission to the baby during pregnancy, birth, as well as breastfeeding.
- If the pregnant woman knows that she is HIV- Breastfeeding is recommended for all women irrespective of their HIV status.

Labour ward/ maternity ward Practices affecting Breastfeeding

Practices which may help a woman to initiate breastfeeding soon after birth

Practices that may help a woman to feel competent, in control, supported and ready to interact with her baby who is alert, help to put this Step into action. These practices include:

- Emotional support during labour.
- Avoiding pain medication that may affect the unborn baby.
- Eating foods and taking nutritious fluids during early labour.
- Freedom of movement during labour.
- Active monitoring of labour using a partograph and non-drug pain control prevents stress and contribute to successful breastfeeding
- Minimize unnecessary invasive procedures such as episiotomy, caesarean sections etc. during labour and delivery.
- At delivery, the baby is put on the mother's chest (skin-to-skin contact), dried and breastfeeding initiation is supported.
- Observe for lowered pulsation in the cord, then clamp and cut cord.
- Assess the baby's breathing immediately at birth (normal 40-60 per minute): if the baby is not breathing

initiate resuscitation immediately.

- Clump the cord after cessation of pulsations (delayed cord clumping).
- Ligature the cord at least 2 cm from the proximal part. (from the babies abdomen)
- Active management of third stage of labour (administration of oxytocic medicine, controlled cord traction and massaging the uterus)
- Give prophylactic medicines and vaccines to the newborn: (7.1% Chlorhexidine di-gluconate on the cord, IM Vitamin K, Tetracycline Eye Ointment, BCG and Polio 0)

Practices that support breastfeeding after caesarean section

Health workers roles in supporting rooming/bedding in and demand feeding

- Allow mothers and infants to remain together 24 hours a day. Separation should only occur for an individual clinical need.
- Remove all barriers to rooming-in and provide possible solutions.
- Encourage breastfeeding on demand.
- Offer suggestions and practical help to settle a crying baby
- Counsel on avoidance of unnecessary supplements

The risks of pre-lacteal feeding

Pre-lacteal and supplemental feeds are dangerous

- They increase the risk of infection, intolerance and allergy.
- They interfere with suckling and make breastfeeding more difficult to establish.

III. Promoting breastfeeding during lactation period

- It is important for the health worker to understand the process behind breastmilk production in a woman and the interaction between mother and baby which make the breastfeeding successful.
- The mother and baby need to be well positioned for the baby to attach well to the breast and be able to remove the milk from the breast.
- Conditions of the nipple and breasts can interfere with breastfeeding. The health worker as well as the mother need to be empowered to deal with the common breast and nipple conditions.
- In some situations, babies are not able to breastfeed, this could be because the mother may leave the baby behind, returning to work, or because of some other situations where breastfeeding is not possible. Sometimes, these situations are unpredictable: hence the need for every mother to know how to express breastmilk.

How breastfeeding works: slides presentation

Positioning and attachment for effective breastfeeding

The mother and baby need to be well positioned for the baby to attach well to the breast and be able to remove the

milk from the breast.

Positioning babies for effective attachment

- Positioning means how the mother holds her baby to help the baby to attach well to the breast. If a baby is poorly attached, you can help the mother to position the baby so that she or he attaches better.
- If the baby is well attached and suckling effectively, do not interfere with the way she is breastfeeding. Tell the mother what key points you are observing, to build her confidence and her own ability to assess how breastfeeding is going.

Mother's position

- There are many positions that a mother may use – for example, sitting on the floor or the ground, or sitting on a chair, lying down, standing up, or walking. If the mother is sitting or lying down, she should be:
 - Comfortable with back supported.
 - Feet supported if sitting so that the legs are not hanging loose or uncomfortable.
 - Breast supported, if needed.

Baby's position

- The baby also can be in different positions, such as along the mother's arm, under the mother's arm, or along her side. Whatever position is used, the same four key points are used to help the baby be comfortable. The baby's body needs to be:
 - **In line** with ear, shoulder and hip in a straight line, so that the neck is neither twisted nor bent forward or far back.
 - **Close** to the mother's body so the baby is brought to the breast rather than the breast taken to the baby.
 - **Supported** at the head, shoulders and if newborn, the whole body supported.
 - **Facing** the breast with the baby's nose to the nipple as she or he comes to the breast.
- You cannot help the mother well if you are in an uncomfortable position yourself. If your back is unsupported or your body is bent, you may try to hurry the process. Sit in a position where you are comfortable and relaxed in a convenient position to help.

Attachment to the breast for effective suckling

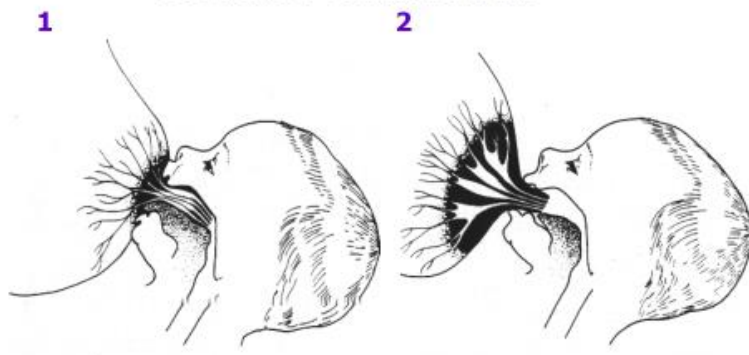
Good and poor attachment

The next two pictures show what happens inside a baby's mouth, when she or he is breastfeeding.

Good and Poor attachment

What differences do you see? 7/6

Good and Poor Attachment

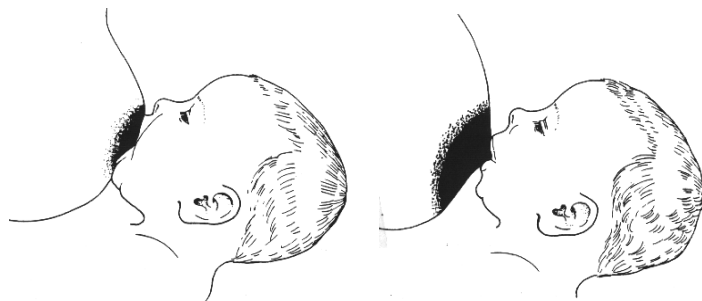


- In picture 1: Good attachment
 - The nipple and areola are stretched out to form a long “teat” in the baby’s mouth
 - The large ducts that lie beneath the areola are inside the baby’s mouth.
 - The baby’s tongue reaches forward over the lower gum, so that it can press the milk out of the breast. This is called suckling.
 - When a baby takes the breast into his or her mouth in this way, the baby is well attached and can easily get the milk.
- In picture 2: Poor attachment
 - The nipple and areola are not stretched out to form a teat.
 - The milk ducts are not inside the baby’s mouth.
 - The baby’s tongue is back inside the mouth and cannot press out the breast milk.
 - This baby is poorly attached. He or she is sucking only on the nipple, which can be painful for the mother. The baby cannot suckle effectively or get the milk easily.

How to assess if a baby is well or poorly attached

- You need to be able to decide about a baby’s attachment by looking at the outside. The next two pictures show what you can see on the outside.

Assessing good or poor attachment



- In picture 1: Good attachment
 - The baby's **mouth** is wide open.
 - The **lower lip** is turned out.
 - The **chin** is touching the breast (or nearly so).
 - More **areola** is visible above the baby's mouth than below.
- Seeing a lot or a little of the areola is not a reliable sign of attachment. Some women have a large areola and some have a small areola. It is more reliable to compare how much areola you see above and below a baby's mouth (if any is visible).
- These are the signs of good attachment. If you can see all these signs, then the baby is *well attached*. When the baby is well attached, it is comfortable and painless for the mother, and the baby can suckle effectively.
- In picture 2: Poor attachment
 - The **mouth** is not wide open.
 - The **lower lip** is pointing forward (it may also be turned in).
 - The **chin** is away from the breast.
 - More **areola** is below the baby's mouth (you might see equal amounts of areola above and below the mouth).

These are the signs of poor attachment. If you see *any one* of these signs, then the baby is *poorly attached* and cannot suckle effectively. If the mother feels discomfort, that is also a sign of poor attachment.

Signs that a baby is suckling effectively

- If a baby is well attached, she or he is probably suckling well and getting breast milk during the feed. Signs that a baby is getting breast milk easily are:
 - The baby takes **slow, deep sucks**, sometimes pausing for a short time.
 - You can see or hear the baby **swallowing**.
 - The baby's **cheeks** are full and not drawn inward during a feed.
 - The baby finishes the feed and **releases the breast by himself or herself** and looks contented.

These signs tell you that a baby is "drinking in" the milk, and this is effective suckling.

Signs that a baby is NOT suckling effectively

- If a baby
 - makes only rapid sucks.
 - makes smacking or clicking sounds.
 - has cheeks drawn in.
 - fusses or appears unsettled at the breast and comes on and off the breast.
 - feeds very frequently - more often than every hour or so EVERY day.
 - feeds for a very long time - for more than an hour at EVERY feed unless low birth weight.
 - is not contented at the end of a feed.

These are signs that suckling is ineffective, and the baby is not getting the milk easily. Even one of these signs indicates that there may be a difficulty.

Artificial teats and suckling difficulties

- Artificial teats and pacifiers may cause difficulties for the breastfeeding baby.

- After sucking on an artificial teat, a baby may have difficulty suckling at the breast because there is a different mouth action.
- The baby may come to prefer the artificial teat and find it difficult to breastfeed.
- Use of pacifiers may reduce the suckling time at the breast thus reducing the breast stimulation, milk production and milk removal.

Expression of breastmilk for a baby






In some situations, babies are not able to suckle on the breast, the breasts are congested and need to be emptied to avoid breast conditions or mother must return to work. It is therefore important for every mother to know how to express breast milk:

How to hand express breast milk

- It is easier to learn to hand express when the breast is soft rather than engorged and tender.
- The key steps in hand expression of breast milk are:
 - Encourage the milk to flow.
 - Find the milk ducts.
 - Compress the breast over the ducts.
 - Repeat in all parts of the breast.

Steps for hand expression

Step 1. Start with the pad of your thumb at the top of your breast, and your finger pads below.

<p>Step 2: Support your breast, then press the breast towards the chest wall to put pressure on the milk ducts.</p>	<p>Step 3: Now compress the breast between your fingers and thumb to move the milk forward towards your nipple.</p>	<p>Step 4. Release and repeat rhythmically: press—compress—relax (like a baby breastfeeding) until milk flow stops</p>	<p>Step 5. Then rotate your hand around the breast a little and repeat. Do this for each section of your breast until it feels soft and comfortable. Keep your fingers and thumb opposite one another as you rotate.</p>	<p>Step 6. Remember that when a baby breastfeeds, milk doesn't flow immediately, so it's normal for it to take a little time for milk to start flowing when you express.</p>
				

Using Breast Pumps

Breast pumps help remove breast milk from the breast for women who find it difficult to hand-express. Before using any breast pump the mother should read and understand the entire instruction manual which comes with the pump.

Breast pumps are basically of three types:

- manual pumps,
- battery-powered pumps, and
- electric pumps.

All breast pumps have three basic parts:

- a. **Breast Shield:** a cone-shaped cup that fits over the nipple and the circular area surrounding the nipple (the areola).
- b. **Pump** creates the gentle vacuum that expresses milk. The pump may be attached to the breast-shield or have plastic tubing to connect the pump to the breast-shield.
- c. **Milk Container:** a detachable container that fits below the breast-shield and collects milk as it is pumped. The container is typically a reusable bottle or disposable bag that can be used to store the milk or be attached to a nipple and used for feeding a baby.

A breast pump is typically held in place by hand or by a nursing bra, a breast pumping bra, or a band.

To use the pump:

- Mother should wash and dry her hands
- Assemble the pump
- Mother finds a clean comfortable place
- She positions the Breast-Shield
- Begin pumping
- A typical pumping session lasts about 10-15 minutes per breast.
- When she has finished pumping, the mother gently inserts her finger between breast and the breast-shield to break the vacuum seal.
- Remove the bottle or bag of collected milk from the rest of the pump, and label it with the date and time of pumping before using or storing it in the refrigerator or freezer.

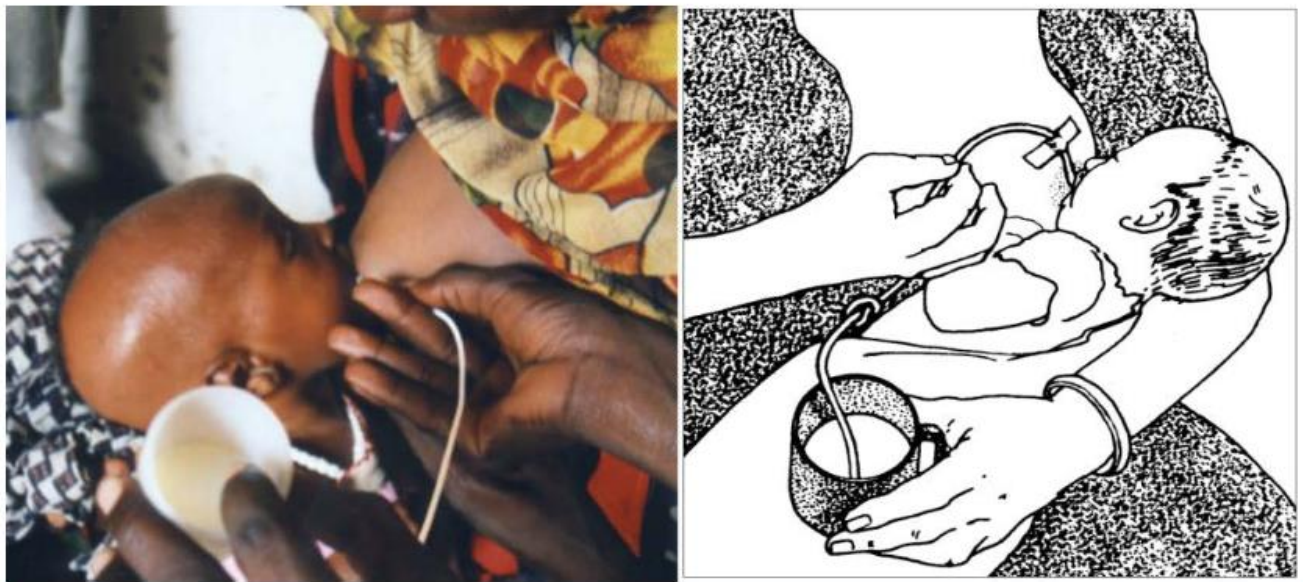
Cleaning a Breast Pump

It is always wise to consult the instruction manual on the cleaning steps for the specific pump

Feeding a baby with expressed breast milk

- Babies who cannot feed at the breast can be fed by:
 - Naso-gastric or oro-gastric tube
 - Syringe or dropper
 - Spoon
 - Direct expression into the baby's mouth
 - Cup

- The need for alternative feeding methods and the most suitable method should be individually assessed for each mother and baby.
- **Tube feeding** is needed for babies who cannot suckle and swallow.
- **Supplemental suckling:** Supplemental Suckling Technique (SST) is a technique which can be used as strategy to initiate re-lactation in mothers who have developed lactation failure or Mother's Milk Insufficiency (MMI).
 - SST is recommended to re-establish breastfeeding as well as to provide or and breastfeeding especially among severely malnourished infants.
 - Involves the infant suckling the breast while breast milk or therapeutic feed is given in a cup through a thin tube along the nipple.
 - The mother or caregiver holds a cup containing breast milk or therapeutic feed. The tip of a nasogastric tube (size No. 8) is placed in the cup and the other end of the tube is placed on the nipple of the breast.
 - The infant should be positioned to breastfeed. The cup is placed 5-10 cm below the nipple to facilitate breastfeeding.
 - When the baby suckles more strongly, the cup can be lowered to 30 cm.



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- **A syringe or dropper** can be used for very small amounts of milk, for example colostrum. Place a very small amount (not more than 0.5 ml at a time) in the baby's cheek and let the baby swallow that before giving more.
- **Spoon-feeding** is like syringe feeding in that very small amounts are given. The baby cannot control the flow so there is a risk of aspiration if the milk is fed quickly. Spoon-feeding large amounts of milk takes a lot of time. This means the care giver or baby may get tired before enough milk is taken. If a large spoon is used, then this is like cup feeding.
- **Direct breast milk expression into the baby's mouth** may encourage the baby to suck. Some mothers can use direct expression for a baby with a cleft palate.
- For all the above methods of supplementing, the caregiver decides how much and how fast the baby will take.

How much to feed a Newborn daily:

Age	Total Daily breast Milk Volume
Day 1	60mls/kg/day
Day 2	80mls/kg/day
Day 3	100mls/kg/day
Day 4	120mls/kg/day
Day 5	140mls/kg/day
Day 6	160mls/kg/day
Day 7	180mls/kg/day

For example:

A baby born at 2.5kg body weight and not able to breast feed; this baby would need a total of 2.5 X 60 mls of Breast milk on day one. If we're to feed this baby every 2hours this baby will require 150mls/12hours in a day giving 12.5mls 2 hourly.

Cup feeding

- Cup feeding can be used for babies who are able to swallow but not yet able to suckle well enough to feed themselves fully from the breast. They may have difficulty attaching well, or they may attach and suckle for a short time, but tire quickly before they have obtained enough milk. A baby of 30-32 weeks gestation can often begin to take feeds from a cup.
- Cup feeding has some advantages over other methods of feeding: - It is pleasant for the baby – there are no invasive tubes in his or her mouth.
 - It allows the baby to use his or her tongue and to learn tastes. - It stimulates the baby's digestion.
 - It encourages coordinated breathing/suck/swallow.
 - The baby needs to be held close and eye-contact is possible.
 - It can allow the baby to control the amount and rate of feeding. - A cup is easier to keep clean than a bottle and teat.
 - It gives confidence to the mother as a transitional method towards breastfeeding rather than as a failure' to breastfeed.
- Cup feeding may have disadvantages:
 - Milk can be wasted if the baby dribbles.
 - Term babies can come to prefer the cup if they do not go to the breast regularly.
 - Cup feeding may be used instead of direct breastfeeding because it is easy to do. For example, a special care baby nurse may prefer to give a cup feed rather than bring the mother from the post-natal ward and help her to breastfeed her small baby.
- The amount a baby takes varies from feed to feed – this is true for any method of feeding. If a baby takes a small feed, offer the next feed a little earlier, especially if the baby shows signs of hunger. Measure the baby's intake over 24 hours, not feed by feed. Extra milk can be given by tube if the baby is too weak to take full cup feeds.

- If mothers are not used to cup feeding, they need information about it, and they need to see their babies feeding by cup. The method needs to be taught in a way that gives them confidence to do it themselves.
- A cup does not need to be sterilized in the same way as a bottle and teat. It has an open, smooth surface that is easy to clean by washing it in hot soapy water. Care givers should avoid tight spouts, lids or rough surfaces where milk may stick and allow bacteria to grow.
- A baby can progress from tube feeding to cup feeding to fully breastfeeding.

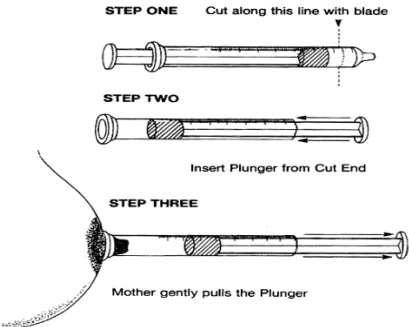
Breastmilk Storage

Condition	Fresh Breast Milk	Frozen Breastmilk
<ul style="list-style-type: none"> • For a healthy baby at home 	<ul style="list-style-type: none"> • At 25-37°C for 4 hours. • At 15-25°C for 8 hours. • Below 15°C for 24 hours. • Breast Milk should not be stored above 37° C. • Refrigerated (2-4°C): up to 8 days. 	<ul style="list-style-type: none"> • In a freezer compartment inside refrigerator: 2 weeks. • In a freezer part of a refrigerator-freezer: 3 months. • In a separate deep freeze: 6 months. • Thawed in a refrigerator: 24 hours (do not re-freeze), or place the container in warm water to thaw quickly.
<ul style="list-style-type: none"> • For an ill baby in hospital 	<ul style="list-style-type: none"> • At room temperature (up to 25°C): 4 hours. • Refrigerated (2-4°C): 48 hours. 	<ul style="list-style-type: none"> • In a freezer compartment inside refrigerator: 2 weeks. • In a freezer part of a refrigerator-freezer or a separate deep freeze (-20°C): 3 months. • Thawed in a refrigerator: 12 hours (do not re-freeze)
Place the container of milk in the coldest part of the refrigerator or freezer. Many refrigerators do not keep a constant temperature. Thus, a mother may prefer to use milk within 3-5 days or freeze milk that will not be used within 5 days, if she has a freezer		

IV. Addressing Common Breast and nipple conditions

Conditions of the nipple and breasts can interfere with breastfeeding. The health worker as well as the mother need to be empowered to deal with the common breast and nipple conditions.

Condition	Methods/support/management
Flat and Inverted Nipples	<p>Syringe method for treatment of inverted nipples</p> <p>The mother must use the syringe herself, so that she can control the amount of suction and avoid hurting her nipple.</p> <ul style="list-style-type: none"> • Take a syringe at least 10 ml in size and if possible 20 ml so that it is large enough to accommodate the mother's nipple. • Cut off the adaptor end of the barrel (where the needle is usually fixed). You will need a sharp blade or scissors.

	<ul style="list-style-type: none"> • Reverse the plunger so that it enters the cut (now rough) end of the barrel. • Before she puts the baby to her breast, the mother: <ul style="list-style-type: none"> – Pulls the plunger about one-third of the way out of the barrel. – Puts the smooth end of the syringe over her nipple. – Gently pulls the plunger to maintain steady but gentle pressure for about 30 seconds. – Pushes the plunger back slightly to reduce suction as she removes the syringe from her breast. <p>Tell the mother to push the plunger back to decrease the suction, if she feels pain. This prevents damaging the skin of the nipple and areola</p> 
<p>Engorgement, blocked ducts and mastitis</p>	<p>Helping mothers to relieve engorgement</p> <ul style="list-style-type: none"> • To treat engorgement, it is necessary to remove the milk from the breast. This will: <ul style="list-style-type: none"> – Relieve the mothers of the discomfort. – Prevent further complications such as mastitis and abscess formation. – Help to ensure continued production of milk. – Enable the baby to receive breast milk. • How to manage and prevent breast engorgement: - <ul style="list-style-type: none"> • Check attachment: Is baby able to attach well at the breast? If not: <ul style="list-style-type: none"> – Help the mother to attach her baby at the breast well enough to remove the milk. – Suggest that she gently express milk⁵⁴ from her breasts herself before a feed to soften the areola and make it easier for the baby to attach. – If breastfeeding alone does not reduce the engorgement, advise the mother to express milk between feeds a few times until she is comfortable. – Encourage frequent feeds: if feeds have been limited, encourage the mother to breastfeed whenever and for as long as her baby is willing. – A warm shower or bath may help the milk to flow. – Massage of the back and neck or other forms of relaxation may also help the milk to flow. – Help the mother to be comfortable. She may need to support her breasts if they are large. – Provide a supportive atmosphere; build the mother's confidence by explaining that soon the engorgement will be resolved. – Cold compresses may lessen pain between feeds.
<p>Blocked milk ducts and mastitis (breast inflammation)</p>	<ul style="list-style-type: none"> • Explain to the mother that she MUST: <ul style="list-style-type: none"> – Remove the milk frequently (if not removed, an abscess may form). – The best way to do this is to continue breastfeeding her baby frequently. - Check that her baby is well attached. – Offer her baby the affected breast first (if not too painful). - Help the milk to flow. – Gently massage the blocked duct or tender area down towards the nipple before and during the feed.

	<ul style="list-style-type: none"> – Check that her clothing, especially her bra, does not have a tight fit. ▪ Rest with the baby so that the baby can feed often. The mother should drink plenty of fluids. The employed mother should take sick leave if possible. ▪ Anti-inflammatory treatment is helpful in reducing the symptoms of mastitis. Ibuprofen is appropriate if available. A mild analgesic can be used as an alternative.
Sore Nipples	<ul style="list-style-type: none"> • Reassure the mother that sore nipples can be healed and prevented in future. • Treat the cause of the sore nipples: <ul style="list-style-type: none"> – Help the mother improve attachment and positioning. This may be all that is needed. If necessary, show the mother how to feed baby in different feeding positions. This helps to ease any pain mother is experiencing because baby will be putting pressure on a different area of the sore nipple and allows her to continue feeding while the nipple heals. – Treat skin conditions or remove source of irritation. Treat Candida both on the mother's nipples and in the baby's mouth. – If the baby's frenulum is so short that the tongue cannot extend over the lower gum, and the mother's nipples have been sore for two to three weeks, consider if the baby should be referred and the frenulum clipped. • Suggest comfort measures while the nipples are healing: <ul style="list-style-type: none"> – Apply expressed breast milk to the nipples after a breastfeed to lubricate and soothe the nipple tissue. – Apply a warm, wet cloth to the breast before the feed to stimulate letdown. - Begin each breastfeed on the least sore breast. – If the baby has fallen asleep at the breast and is no longer actively feeding but remains attached, gently remove the baby from the breast. – Wash nipples only once a day, as for normal body hygiene, and not for every feed. Avoid using soap on nipples, as it removes the natural oils.
<p>Note:</p> <ul style="list-style-type: none"> ▪ DO NOT stop breastfeeding to rest the nipple. The mother may experience breast engorgement, which makes it harder for the baby to attach to the breast. The milk supply will decrease if milk is not removed from the breast. ▪ DO NOT limit the frequency or length of breastfeeds. Limiting feeds will not help if the basic problem is not addressed. One minute of suckling with poor attachment can cause damage to the breast. Twenty minutes of suckling with good attachment will not cause damage to the breast. ▪ DO NOT apply any substances to the nipples that would be harmful for the baby to take into his or her mouth, which requires removal before breastfeeding, or which can sensitise the mother's skin and make the nipple sore worse. An ointment is not a substitute for correct attachment. <p><i>(Include if nipple shields are available in the area)</i> DO NOT use a nipple shield as a routine measure. A nipple shield may cause more problems. Some shields result in less stimulation of the breast and reduce the amount of milk transferred, which may lead to reduced production. It can affect the way the baby sucks resulting in more soreness when it is stopped. It also presents a health risk to the baby from the possibility of contamination</p>	

Session 3.3 Guidance on feeding infants and young children with Special needs

There are several situations where mothers and caretakers require special guidance for them to feed their infants successfully. These include feeding of preterm babies, Low birthweight babies, ill babies and feeding infants and young children during emergencies, epidemics and pandemics.

Learning objectives:

- Discuss breastfeeding of infants who are preterm, low birth weight, ill or have other special needs
- Describe how to assist mothers to breastfeed more than one baby
- Explain feeding of infants and young children during emergencies, epidemics and pandemics (HIV/AIDS, EVD and COVID-19)

I. **Breastfeeding infants who are preterm, low birth weight, ill or have other special needs**

a) **The importance of breast milk for preterm, low birth weight or special needs infants:**

Breast milk contains:

- Protective immune factors, which help to prevent infection.
- Growth factors which help the baby's gut and other systems to develop as well as to heal after diarrhoea.
- Enzymes which make it easier to digest and absorb the milk.
- Special essential fatty acids that help brain development.
- Breastfeeding Calms the baby and reduces pain from drawing blood or related to the baby's condition.
- It gives the mother an important role in caring for her baby.
- Comforts the baby and maintains the bond with the family.
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b) **Babies with special needs such as neurological conditions, cardiac problems or cleft lip/palate and babies who are ill.**

The special group of babies need breast milk as much if not more than babies who are well.

Arrange contact between mother and baby, day and night:

- Encourage the mother to visit, touch, and care for her baby as much as possible.
- A mother produces antibodies (one kind of protective factor) against bacteria and viruses (germs) that she is in contact with. When she spends time with her baby her body can produce the protective factors against many of the germs that her baby is exposed to in the unit.
- Skin to skin contact or 'kangaroo mother care' encourages the mother to hold her baby (dressed only in a diaper) beneath her clothing close to her breast. The baby can then go to breast whenever he or she wants. Skin-to-skin contact helps to regulate the baby's temperature and breathing, assists in development, and increases the production of breast milk.

Take care of the mother:

- The mother is very important to the baby's wellbeing and survival.
- Help the mother to stay at the hospital while her baby is hospitalised
- Encourage the mother to have a balanced diet and take plenty of fluids.
- Answer the parents' questions and explain patiently. The parents may be upset, overwhelmed and frightened when their baby is ill.
- Build the parents confidence to believe breast milk and breastfeeding are important.

Help to establish breastfeeding:

- Assist the mother to express her milk, starting within 6 hours of birth, and expressing six or more times each 24 hours.
- Encourage babies to spend time at the breast as early as possible even if they are not able to suckle well yet.
- If the baby has the maturity to lick, root, suck and swallow at the breast, he or she will do so without harm.
- Describe the early times at the breast as 'getting to know the breast' rather than expecting the baby to take full feeds at the breast immediately.
- The baby can go to the breast while receiving a tube feed to associate the feeling of fullness with being at the breast.
- Weight is not an accurate measure of ability to breastfeed. Maturity is a more important factor.
- Until a baby can breastfeed, he or she may be fed expressed breast milk by tube or cup. Avoid using artificial teats.

Putting the baby on the breast:

- Put a baby to the breast when the baby is just starting to wake up, as seen with rapid eye movements under the eyelids. When ready to feed, a baby may make sucking movements with his or her tongue and mouth. A baby may also bring her or his hand to her or his mouth. Help a mother learn how to anticipate feeding time to avoid her baby using up energy by crying.
- Show the mother how to hold and position her baby. One way to hold a small baby is with the baby's head supported – but not gripped - by the mother's hand. The mother's arm can support the baby's body. The baby can be to the mother's side (as in this picture), or the mother can use her hand from the opposite side to the breast that the baby is feeding at.
- The mother can support her breast with her other hand to help the baby keep the breast in his or her mouth. Show her how to put four fingers under the breast and her thumb on top.
- To increase milk flow, massage and compress the breast each time the baby pauses between suckling bursts (unless the flow is more than the baby can swallow already).

Explain to mothers what to expect during breastfeeding:

- Expect that the baby will probably feed for a long time, and that the baby will pause frequently to rest during a feed. Plan for quiet, unhurried, rather long breastfeeds (an hour or so for each feed).
- Expect some gulping and choking, because of the baby's low muscle tone and uncoordinated suckle.
- Stop trying to feed if the baby seems too sleepy or fussy. The mother can continue to hold her baby against her breast without trying to initiate suckling.
- Keep the feed as calm as possible. Avoid loud noises, bright lights, stroking, jiggling or talking to the baby during feeding attempts.

Prepare mother and baby for discharge:

- A baby may be ready to leave health facility if she or he is feeding effectively and gaining weight. Usually it is necessary for the baby to weigh at least 1800 – 2000 g before being discharged, but this varies with different health facilities.
- Encourage the health facility to provide a place for the mother to come and stay with the baby 24 hours a day for the day or two days before going home. This helps to build her confidence as well as helping her milk production to match her baby's needs.
- Ensure that the mother can recognize feeding signs, signs of adequate intake and that she is able to position and attach her baby well for breastfeeding.
- Make sure that the mother knows how she can get assistance with caring for her baby after she goes home.

Arrange with the mother for follow-up care.

II. Assisting Mothers to Breastfeed more than one baby (Tweens, Triplets etc)

Mothers can make enough milk for two babies, and even three. The key factors are not milk production, but time, support and encouragement from health care providers, family, and friends.

- Encourage the mother to:
 - Get help with caring for other children and doing household duties.
 - Breastfeed lying down to conserve energy, when possible.
 - Eat a varied diet and take care of herself.
 - Try to spend time alone with each of the babies so that she can get to know them individually.
- Mother of twins may prefer to feed each baby separately so that she can concentrate on the positioning and attachment. When the babies and mother can attach well, then the mother can feed them together if she wishes to reduce feeding time.
- If one baby is a good feeder and one baby less active, make sure to alternate breasts so that the milk production remains high in both breasts. The baby who feeds less effectively may benefit from breastfeeding at the same time as the baby who feeds more effectively, thereby stimulating the oxytocin reflex.

c) Prevention and Management of Common Clinical Conditions in Early Infancy

Many instances of hypoglycaemia, jaundice and dehydration can be avoided by implementing practices such as:

- Early skin-to-skin contact to provide warmth for the baby.
- Early and frequent breastfeeding.
- Rooming-in so that frequent feeding is easy.
- Encouraging milk expression and cup feeding if baby is unable to breastfeed effectively because he/she is too weak or sleepy.
- Do not give water to the baby. Water is not effective at reducing jaundice and may increase it.
- Observe all babies in the first few days to ensure that they are learning to suckle well.

Medical conditions	The Role of Breastfeeding
Hypoglycaemia of the newborn	<ul style="list-style-type: none"> ▪ Hypoglycaemia means a low blood glucose level. 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. ▪ Term, healthy babies do not develop hypoglycaemia simply through under-feeding. If a healthy full-term baby develops signs of hypoglycaemia, the baby should be investigated for another underlying problem.
Jaundice	<ul style="list-style-type: none"> ▪ It is common for babies to have a yellow colour (jaundice) to their skin in the first week of life due to high levels of bilirubin in the blood. The colour is most easily seen in the white part of the eyes. Colostrum helps infants to pass the meconium, and this removes excess bilirubin from the body.
Babies who have breathing	<ul style="list-style-type: none"> ▪ Babies with breathing difficulties should be fed small amounts frequently as they tire easily. Breastfeeding provides the infant with nutrients, immune bodies, calories,

difficulties	fluid and comforts the distressed baby and mother.
Dehydration	<ul style="list-style-type: none"> ▪ Healthy exclusively breastfed infants do not require additional fluids to prevent dehydration. ▪ Babies with diarrhoea should be breastfed more frequently. Frequent breastfeeding provides fluid, nutrients, and provides protective factors. In addition, the growth factors in breast milk aid in the re-growth of the damaged intestine.
The baby with neurological difficulties	<ul style="list-style-type: none"> ▪ Many babies with Down's syndrome or other neurological difficulties can breastfeed. If the baby is not able to breastfeed, breast milk is still very important. Some ways to assist include: <ul style="list-style-type: none"> ○ Encourage early contact and an early start to feeding. ○ The baby may need to be awakened for frequent breastfeeds and stimulated 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 stabilise the baby's jaw and maintain good attachment throughout the feed. She can gently cup the baby's chin between her thumb and first finger, and cup the remaining three fingers under her breast. ▪ Some babies with neurological difficulties gain weight slowly even if they receive enough breast milk. – Some babies with neurological difficulties may have other health challenges, e.g. cardiac problems. – The mother may need to express her milk and feed it to her baby in a cup.

III. Feeding infants and young children during Epidemics and Pandemics

These include common epidemics like COVID19, Ebola, HIV/AIDS

Epidemics	Infant feeding
Breastfeeding during COVID 19	<ul style="list-style-type: none"> • Counsel and support all mother with COVID-19 whether suspected or confirmed to practice the normal infant feeding guidelines while adhering to the recommended Infection Prevention and Control measures. • They should start breastfeeding within one hour after birth, continue exclusive breastfeeding for six months and have timely introduction of adequate safe and properly prepared complementary foods while continuing to breastfeed for two years of age and beyond • In line with the Ministry of Health, the following infection prevention and control (IPC) for infant and young child feeding during COVID-19 should be followed • Always wear a medical mask when feeding or near a child if mother/caregiver has respiratory symptoms. • Wash with soap and water before and after contact with the child. • Routinely clean with soap clothes for both mother and child • Routinely clean with soap surfaces and other areas of contact for both mother/caregiver and

	<p>child</p> <ul style="list-style-type: none"> • Maintain physical distancing with other people and avoid touching eyes, nose, and mouth
<p>Breastfeeding and Ebola</p>	<ul style="list-style-type: none"> • Counsel and support all mothers and children exposed to the virus to use Ready to Use Infant Formula (RUIF) for all infants below the age of six months in the context of EVD. • All children are recommended to start complementary foods, including animal milk, at six months of age until they make 23 months • Counselling and provision of psychosocial to all mothers and children who have been exposed to the virus on appropriate IYCF practices as per the National Protocol for Nutritional Care for Infants, Young Children and Adults Infected with Ebola Virus Disease (EVD) in Ebola Treatment Units
<p>Feeding the exposed Infant (IYCF in the context of HIV)</p>	<p>Successful implementation of interventions for nutrition of children within the context of HIV infection will involve the following:</p> <ul style="list-style-type: none"> ▪ Counsel all women living with HIV on the benefits of exclusive breastfeeding for the first six completed months of the infant's life and establish the HIV exposure status of those infants with unknown status. <ul style="list-style-type: none"> ○ HIV Exposed Infants: Encourage mothers to discontinue breastfeeding at 12 months of age for infants who are HIV-negative. At least 500 ml (1 NICE cup) a day of alternative forms of milk (cow's milk, goat's milk, soya) should be given after breastfeeding has been discontinued. ○ HIV Infected Infants: Encourage mothers to continue breastfeeding on demand, day, and night up to 24 months to maintain the baby's health and nutrition. ○ HIV Exposed Sick Infant: Counsel the mother/ caregiver to feed the child even more frequently than usual to meet that child's nutritional requirements (at least 2 extra meals and one snack) ▪ Counsel the mothers living with HIV who decide to stop breastfeeding at any time, to do so gradually. This transition period should be between one to two weeks which is not too long to increase exposure and not too short to cause physical and psychological trauma to the mother and baby. The mechanisms of transition include: <ul style="list-style-type: none"> ○ Expressing breast milk and feeding infant or child by cup; and ○ Substituting the expressed breast milk with suitable replacement feed gradually. ▪ Follow-up all HIV-exposed infants and continue to offer infant feeding counselling and support to mothers/ caregivers. ▪ Monitor growth and development of baby

	<ul style="list-style-type: none"> ▪ Avoid mixed feeding, feed only breast milk until six months old ▪ Introduce complementary feeding at six months and continue breastfeeding until 12 months ▪ Promptly manage breast problems like mastitis, cracked nipples etc.
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IV. Feeding of infants and young children during emergencies

Ensure the following critical management issues are in place:

- A team to work with, that has received training on breastfeeding and complementary feeding counselling, and specific skills on addressing breastfeeding problems, supporting re-lactation and wet nursing as needed. At the same time, the team should have basic knowledge and skills on management infant formula depending infants.
- Accessible IYCF support services established to provide for higher risk infants, young children and mothers, (orphans, unaccompanied children, infants who are not breastfed; children with disabilities that affect feeding or whose caregivers are disabled; mothers in detention; children whose mothers are ill; adolescent mothers; premature infants; LBW infants; and children and/or mothers who are acutely malnourished).
- Safe spaces as needed to ensure that all pregnant women and mothers of children under the age of 2 years may access and receive the needed IYCF support
- Close monitoring and reporting of violations of the BMS Code
- Orientation on national emergency guidelines and training on IYCF in emergencies.

Breastfeeding support

- Promote and support early initiation of exclusive breastfeeding in all newborns
- Integrate the BFHI Requirements in all health care services
Protect, promote, and support exclusive breastfeeding in infants less than six months of age and continued breastfeeding to two years or beyond.
- For mothers who had stopped breastfeeding, explore viability of re-lactation
- Avoid use of devices such as feeding bottles and breast pumps.

For Infants who are not breastfed by their mothers

- Quickly explore the viability of, wet nursing/donor human milk (with the necessary work up regarding HIV), and home-modified animal milk depending on the cultural context.
- Wet nursing and re-lactation can work together where the wet nurse provides supplemental milk until the mother has sufficient milk.
- Donor human milk can be a viable option where there are existing human milk banks in an emergency-affected area.

- If the above-mentioned options are not acceptable to mothers/caregivers or feasible to deliver, enable access to an assured supply of an appropriate BMS for the entire period the child will need it. In such a case, The Regulations on Marketing of Infant and Young Child Foods must strictly be adhered to.
- Use cups for feeding infants and young children

For the child older than 6 months

- Appropriate complementary foods and feeding practices should be promoted.
- WASH conditions must be carefully observed.

Do not receive or accept donations of complementary foods from infant food manufacturers in an emergency

Session 3.4: Protecting Breastfeeding

Breastfeeding has many detractors. A legal framework has been put in place to protect breastfeeding from these destructive forces.

The effect of marketing of Breastmilk substitutes on infant feeding practices

- Women are not able to make informed choices about infant feeding if they receive biased and incorrect information. A company provides information on its products with the aim of selling more of its products,
- Moreover, if good breastfeeding information and education does not reach society, even well-informed women will not get the personal and social support essential for exclusive breastfeeding. Poorly informed families, friends and health professionals can undermine the confidence even of a well-informed woman; conflicting advice and subtle pressures may make her doubt her ability to breastfeed her baby.
- To achieve this aim we must:
 - Breastmilk is the best infant feeding choice
 - Breast-milk substitutes (BMS) may be used on medical recommendation but should be used properly.
 - Provide adequate information about infant feeding to all pregnant and breastfeeding mothers
 - Discourage advertising or any other form of promotion of BMS.

The Regulations:

- Does not aim to compel women to breastfeed against their will. The aim is to ensure that everyone receives unbiased and correct information about infant feeding
- Protects artificially fed infants by ensuring that the choice of products is impartial, scientific and protects these children's health
- Ensures that labels carry warnings and the correct instructions for preparation, so they are prepared in a safe manner if they are used
- Clarify that the manufacture of BMS and making safe and appropriate products available are acceptable practices but promoting them in the way most consumer products are marketed is unacceptable

- The responsibility for monitoring the implementation of the Regulations lies with the Government, although manufacturers and distributors, professional groups and NGOs should collaborate with Governments to this end. The monitoring should be free from commercial influence

Products that are covered by the Regulations (Scope of the Regulations)

- The Regulations applies to the marketing, and related practices, of the following products:
 - breast-milk substitutes, including infant formula.
 - other milk products, foods (cereals) and beverages (teas and juices for babies), when marketed or otherwise represented to be suitable for use as a partial or total replacement of breast milk.
 - feeding bottles and teats.
- The Regulations do not:
 - Prohibit the production and availability of breast-milk substitutes.
 - Affect the appropriate use of complementary foods after 6 months of age.
- There should be no free or low-cost supplies of breast-milk substitutes in any part of the health care system. Health facilities should buy the small amount of formula needed for any babies who are not breastfeeding through regular purchasing channels.
- Free samples should not be given to mothers, their families or health care workers. Small amounts of formula given to mothers as a present or gift when going home from hospital or in the community are not allowed, as these are samples to encourage mothers to use those products

What health workers can do:

Health workers as individuals and as a group can help to protect infants and their mothers from marketing. They can and should:

- Remove posters that advertise formula, teas, juices or baby cereal, as well as any that advertise bottles and teats and refuse any new posters.
- Refuse to accept free gifts from companies.
- Refuse to allow free samples, gifts, or leaflets to be given to mothers.
- Eliminate antenatal group teaching of formula preparation to pregnant women, particularly if company staff provides the teaching.
- Provide individual guidance and information on the appropriate use of infant formula, after counselling the caregiver and ascertaining the needs and reasons for not breastfeeding.
- Report violations of the Code (and/or local laws and regulations) to the mandated authorities.
- Accept only product information from companies for their own information that is scientific and factual, not marketing materials.

Health facilities must abide by the national regulations, protocols and if applicable the national Baby Friendly Health Facilities Guidelines in order to be recognized as baby friendly

Session 3.5: Supporting Families for recommended Complementary Feeding Practices

Complementary feeding becomes necessary when breastmilk alone can no longer support the growth and development of the infant, that is at six completed months of the child's age. The child should, at that stage, be given other foods which are appropriate for age.

Learning Objectives

By the end of the session, participant should be able to:

- Explain complementary feeding and its importance
- Describe principles, recommended complementary feeding practices and the use of local foods
- Discuss priority WASH actions to promote nutrition

I. Complementary feeding and its importance

- Complementary feeding means giving other foods in addition to breast milk to a baby starting at 6 months of age. At this point, breast milk alone no longer provides the child with all the energy and nutrients needed for proper growth and development. Therefore, it is important to start timely complementary feeding at 6 months of age.
- During the period of complementary feeding, the young child gradually becomes accustomed to eating family foods. However, breastfeeding should continue because breast milk is still an important source of nutrients and protective factors until the child is at least 2 years old.
- While introducing complementary foods too late is problematic, introducing complementary foods earlier than 6 months of age is also problematic.
- Many infants will not have developed the ability to eat semi-solid foods before 6 months of age. In addition, complementary foods are a primary way for an infant to ingest disease-causing pathogens. Finally, before 6 months of age, breast milk is a more nutritious food than almost any complementary food that would be introduced, and it does not run the risk of causing infection in the child.

Infants 6 – 23 months old Infants in this age-group require increased nutrients. At six months, breast milk alone is not sufficient to support optimal growth and development of the infant. It is recommended that from six months, complementary foods (soft, safe and diverse) are introduced.

II. Guiding Principles for Complementary Feeding

The Breastfed Child

1. Practise exclusive breastfeeding from birth to 6 months of age, and introduce complementary foods at 6 months of age (180 days) while continuing to breastfeed.
2. Continue frequent, on-demand breastfeeding until two years of age or beyond.
3. Practise responsive feeding, applying the principles of psychosocial care.
4. Practise good hygiene and proper food handling.
5. Start at six months of age with small amounts of food and increase the quantity as the child gets older, while maintaining frequent breastfeeding.
6. Gradually increase food consistency and variety as the infant gets older, adapting to the infant's requirements and abilities.
7. Increase the number of times that the child is fed complementary foods as he/she gets older.
8. Feed a variety of foods to ensure that nutrient needs are met.
9. Use fortified complementary foods or vitamin-mineral supplements for the infant, as needed.
10. Increase fluid intake during illness, including more frequent breastfeeding, 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.

Feeding Non-Breastfed Children 6–24 Months of Age

1. Ensure that energy needs are met.
2. Gradually increase food consistency and variety as the infant gets older, adapting to the infant's requirements and abilities.
3. For the average healthy infant, meals should be provided four to five times per day, with additional nutritious snacks offered one or two times per day, as desired.
4. Feed a variety of foods to ensure that nutrient needs are met.
5. As needed, use fortified foods or vitamin-mineral supplements (preferably mixed with or fed with food) that contain iron.
6. Non-breastfed infants and young children need at least 400–600 mL/day of extra fluids in a temperate climate, and 800–1200 mL/day in a hot climate.
7. Practise good hygiene and proper food handling.
8. Practise responsive feeding, applying the principles of psychosocial care.
9. 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.

To fill the nutrient gaps discussed earlier, complementary feeding practices should reflect the **AFATVAH principles**, which cover: 1) Age Group, 2) Frequency of feeding, 3) Amount/quantity of food, 4) Thickness of food, 5) Variety of food, 5) Active feeding and 6) Hygiene

Age Group	6–8 Months	9–11 Months	12–23 Months
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	(Energy requirement, 200 kcal per day)	(Energy requirement, 300 kcal per day)	(Energy requirement, 550 kcal per day)
Frequency	<ul style="list-style-type: none"> 2–3 meals per day plus frequent breastfeeding; based on a child's appetite, 1–2 snacks may be offered 	<ul style="list-style-type: none"> 3–4 meals per day plus frequent breastfeeding. Based on a child's appetite, 1–2 snacks may be offered. 	<ul style="list-style-type: none"> 3–4 meals per day plus frequent breastfeeding. Based on a child's appetite, 1–2 snacks may be offered.
Amount	<ul style="list-style-type: none"> Start with 2–3 tablespoons per feed, increasing gradually to ½ of a 250 ml cup 	<ul style="list-style-type: none"> ½ cup of a 250 ml at each meal 	<ul style="list-style-type: none"> ¾ of a 250 ml cup at each meal.
Thickness (consistency)	<ul style="list-style-type: none"> Start with thick porridge, well mashed foods. Continue with mashed family foods Foods prepared with treated water. 	<ul style="list-style-type: none"> Finely chopped or mashed food and foods that the baby can pick up with his/her fingers Wash child's hands if feeding him or herself. 	<ul style="list-style-type: none"> Family foods, chopped or mashed if necessary Wash child's hands if feeding him or herself.
Variety	<ul style="list-style-type: none"> Encourage mothers to include at least one type of locally available food from the three main food groups: Carbohydrates/fats/oils (energy-giving foods), plant/animal protein (bodybuilding), and vegetables and fruits (protecting foods). 		
Active/ responsive feeding	<ul style="list-style-type: none"> Mothers should be encouraged to feed their infants and young children patiently and actively and to use a separate plate for the infant to ensure adequate intake. 		
Hygiene	<ul style="list-style-type: none"> Counsel mothers on hygienic food preparation and handling to avoid food contamination leading to diarrhoea and illness. Encourage the use of clean, open cups. Discourage use of feeding bottles, teats, or spouted cups as they are very difficult to clean. 		

Please note in the case of a not breastfed child consider the following:

Age	Frequency	Amount	Thickness	Variety
6–24 months	Add 1–2 extra meals 1–2 snacks may be offered	Same as above according to age group	Same as above according to age group	Same as above, plus 1 to 2 cups of milk per day + 2–3 cups of extra fluid especially in hot climates.

How to Determine the Right Consistency of Baby Food Using a Spoon



Variety

Complementary feeding should include a variety of foods with different nutrients like proteins, carbohydrates, fats, minerals, and vitamins.

Giving the child foods with a range of colours—yellow, red, orange, brown, green, and white—and from both plant and animal sources will help ensure that she/he is getting a variety of nutrients.

Complementary foods from plant sources alone will not meet infant and young child iron and zinc requirements.

Varied tastes and textures also prevent the diet from becoming monotonous, which can decrease a child's appetite.

Note: When complementary feeding is started, a child needs time to get accustomed to the taste and texture of new foods. If a child is very fussy and won't eat certain foods, it is important to keep trying new foods that he or she may eat.

Active Feeding

- Optimal infant and young child feeding not only depends on what to feed, but also how, when, where, and by whom the child is fed. Active feeding (also called 'responsive feeding') means engaging a child while feeding her/him to encourage the child to eat. This includes practices such as talking to the child and making eye contact while feeding her/him, which can make feeding more fun for the child.
- Infants should be fed directly, and older children assisted when they feed themselves.
- Caregivers should feed slowly and patiently, encourage but not force children to eat, and minimize distractions.
- A child should have his or her own clean plate or bowl so that the caregiver knows if the child is getting enough food.
- A clean utensil such as a small spoon, or just a clean hand (washed in soap and water) may be used to feed a child.

Hygiene

- To reduce the risk of contamination—particularly by human and animal faeces—and illness, good hygiene practices must be used when preparing complementary foods and feeding children. This includes:
 - appropriate hand washing with soap and flowing water (by caregiver and child) before food preparation and feeding
 - preparation of foods with treated water only; and storage (of cooked and raw foods) in covered containers.
 - Only treated water should be consumed; store it in a covered container and serve water by pouring or using a ladle.
 - Food hygiene is discussed in more detail in the next section on water, sanitation, and hygiene (WASH).

- The risk of diarrhoeal infections greatly increases after 6 months of age, because complementary foods provide a potential route of infection by disease-causing pathogens.
- Thus, appropriate food hygiene practices are essential.

III. Priority WASH Actions to Promote Nutrition

The term WASH refers to the following.

- **Water:** access, quantity, and quality
 - **Sanitation:** safe handling and disposal of human excreta (faeces, urine, menstrual blood, sputum, and sweat), management of waste (including trash, wastewater, storm water, sewage, and hazardous wastes) and control of disease vectors (such as mosquitoes and flies)
 - **Hygiene practices:** hand washing with soap, treatment and safe storage of drinking water, and food hygiene
- WASH practices help to prevent caregivers and other household members from contracting water- and food-related diarrhoeal diseases. A healthier and stronger household is more economically viable and resilient in the face of nutritional challenges. WASH practices benefit everyone and integrating them into nutrition care programmes provides additional opportunities and resources to improve overall health outcomes.
 - When implementing priority WASH practices, the focus should be on measures considered feasible by the household, considering the current practice, available resources, and the particular social context.
 - The home visitor, counsellor, family member, or clinician must assess what the current barriers are to each WASH practice and how they can be overcome. They can then negotiate a commitment to try a few practices that seem feasible, worth changing, and safe, from the point of view of the household.

Water–Priority Actions

Access to safe, quality, water is a basic human need and is essential to preventing disease and malnutrition. Many health and hygiene behaviours depend on water, such as handwashing, bathing, cleaning food, and cooking surfaces. Simple technologies for treating and safely storing water can reduce the risk of diarrhoeal disease by up to 30–40 percent.

- **Treat drinking water.** Even where a reliable source of water is available, it is often difficult to assure safe transport and storage practices; it is therefore good practice to treat drinking water where it is used, with chlorination systems (Aqua Safe or Water Guard), solar disinfection, boiling, or filtration. Treated water should also be used for washing foods that will not be cooked and for mixing into already cooked foods like a child's porridge.
- **Store treated drinking water safely.** Ideally, treated water would be stored in a covered container or jerry can with a narrow mouth and lid to prevent recontamination of treated water. If possible, it should be served by pouring, preferably with a tap or spigot, otherwise it should be served using a ladle that hangs on the wall.

Sanitation–Priority Actions

Safe disposal of faeces reduces risk of diarrhoeal disease by 30 percent or more. Malnourished individuals, who are at additional risk of disease, are particularly susceptible to diarrhoeal disease.

- **Handle and dispose of faeces safely.** Support construction and use of simple waste disposal systems, such as latrines, for all household members. Dispose of waste from children's nappies in the latrines as well. Latrines

should meet minimum standards, including cleanable platform, cover over the pit, housing that provides privacy, and a hand-washing station with soap nearby. Maintain clean latrines with a clear pathway. When latrines are not available, bury faeces away from the house.

- **Maintain a clean environment.** Keep animals out of the house and away from food preparation areas. Sweep the compound daily to remove animal faeces. Ensure that toddlers do not crawl or play in areas with faeces on the ground.

Hygiene (Personal, Food Hygiene)–Priority Actions

Both personal and food hygiene help to prevent illness and malnutrition. If done properly and at critical times, washing hands with soap can reduce the risk of diarrhoea by 42 to 44 percent. Although statistics of foodborne illnesses are scant in Uganda, contaminated food is thought to be a primary cause of diarrhoeal disease. Contamination of food— including complementary food—can occur before preparation (if the food is spoiled or has come into contact with human or animal faeces), during preparation (if hands or cooking surfaces are not clean, or if the food is not washed/peeled or is washed with untreated water), during serving/feeding (if hands or eating surfaces are not clean), or during storage (if temperatures or storage containers are not adequate or the food is not adequately heated before reserving). Health workers can discuss options to help clients follow key hygiene actions.

- **Wash hands with soap (or an abrasive substance) and clean flowing (or poured) water.** Proper hand washing means:
 - Using soap every time you wash your hands.
 - Washing hands under poured or flowing water. This removes the dirt and germs. A washbasin in which many people wash their hands in the same water does not prevent infection.
 - Washing hands **before** handling, preparing, or eating food; before feeding someone or giving medicines; and often during food preparation. Before preparing food or feeding a child, mothers should wash their own hands with soap and clean flowing (or poured) water. Children’s hands should be washed with soap and clean flowing (or poured) water prior to eating.
 - Washing hands **after** going to the toilet; cleaning a person who has defecated; blowing your nose, coughing, sneezing; handling an animal or animal waste; and both **before and after** tending to someone who is sick.
 - Installing a tippy tap near the latrine and food preparation areas is convenient, can save water, and reminds people to wash their hands.
 - It is not necessary to wash hands with treated water if soap is used.
- **Prepare, handle and store food safely.** Proper food hygiene and safe food handling and storage, with references to IYCF practices, include: Protecting food from insects, pests, and animals by:

○ Protecting food from insects, pests, and animals by covering it with netting, a cloth, or keeping it in a covered container.	○ Keeping foods at safe temperatures.
○ Keeping food preparation areas and serving/eating utensils clean: <ul style="list-style-type: none"> ○ <i>Washing all surfaces and equipment used to prepare or serve food with soap and water.</i> ○ <i>Avoiding feeding with a bottle or spouted cup (which are harder to clean); always use an open cup.</i> 	○ Not leaving cooked food at room temperature for more than 2 hours

<ul style="list-style-type: none"> ○ <i>Washing the cup, bowl, or mixing utensils for the infant's food thoroughly with soap and water. Boil them if possible or dry them in the sun. Bacteria breed in food that sticks to utensils.</i> 	
<ul style="list-style-type: none"> ○ Separating raw and cooked food 	<ul style="list-style-type: none"> ○ Before reserving, reheating cooked food that has been stored until it is steaming.
<ul style="list-style-type: none"> ○ Keeping raw eggs, meat, poultry, fish, and seafood away from other foods; they can easily contaminate other foods with illness-causing bacteria. 	<ul style="list-style-type: none"> ○ Preparing fresh food for infants, young children, and other people with compromised immune systems; do not store it after cooking.
<ul style="list-style-type: none"> ○ Cooking food thoroughly, especially meat, poultry, eggs, fish, and seafood. For meat and poultry, make sure juices are clear, not pink. 	<ul style="list-style-type: none"> ○ Using safe water and raw materials
<ul style="list-style-type: none"> ○ Bringing soups and stews to the boiling point until the first big bubble is seen. 	<ul style="list-style-type: none"> ○ Always using treated water for drinking and mixing with foods for children
<ul style="list-style-type: none"> ○ Reheating cooked food thoroughly; bring it to a boil or heat it until it is steaming or too hot. Stir while reheating. 	<ul style="list-style-type: none"> ○ Using pasteurized milk or boiling milk before use
<ul style="list-style-type: none"> ○ Cooling foods before serving to infants and young children 	<p>Washing raw vegetables/fruits with treated water or peeling the skin before eating</p>

Summary of Main Points

- Starting at 6 months of age, children need more nutrients that breast milk alone can provide. Therefore, feed them complementary foods in addition to breastfeeding them.
- Continue breastfeeding until child is at least 2 years of age.
- Start with 1 to 2 spoonfuls of mashed food twice a day and gradually increase frequency, amount, and texture of food as child gets older.
- Provide a variety of foods (not just the staple food), including animal and plant foods in a range of colors to ensure the child is getting a variety of nutrients.
- Actively engage the child while feeding to encourage him or her to eat.
- Practice good hygiene, including good food hygiene.
- Wash hands with soap and flowing/poured water before preparing food and feeding.
 - Treat drinking water and water for washing or mixing into foods that will not be cooked further.
 - Store treated water in a covered container with a small mouth. Serve water by pouring or using with a clean ladle.
 - Cover food with a cloth, net, or lid and avoid contamination of cooked food with raw food.
 - Cook and reheat food thoroughly (heat to steaming).
- Promote WASH practices: water, sanitation, hygiene.

Session 3.5 Essential Nutrition Actions to Promote Infant and Young Child Nutrition

Age group	Essential Nutrition Actions
0–6 months	<ul style="list-style-type: none"> • Counsel and support all mothers on optimal breastfeeding practices i.e. support immediate skin to skin contact, early initiation of breastfeeding (within an hour of delivery) • Give colostrum, establish and maintain exclusive breastfeeding for the first six completed months unless medically contra-indicated • Promote growth monitoring and identify infants under six months of age with acute malnutrition (under nutrition) and refer appropriately.
6–23 months	<ul style="list-style-type: none"> • Counsel and support caregivers, parents to introduce nutritionally diverse, adequate, safe and age appropriate complementary foods to the infant at six completed months while they continue breastfeeding for up to two years or beyond • Feed children on a variety of locally available foods from the main food groups i.e. energy-giving foods (carbohydrates, fats, and oils), body-building foods (plant and animal proteins), and protective foods (vegetables and fruits) and in recommended frequency and quantities (Refer to Annex 10) • Counsel and support all mothers living with HIV on adherence to antiretroviral therapy while they continue breastfeeding until the baby is 12 months of age • Feed sick and recuperating infants and children on small, frequent meals of soft consistency and enriched with high protein, fat and mineral content while continuing breastfeeding • Deworm children aged 12 months and older • Provide Vitamin A supplementation for infants and children aged 6–23 months • Provide zinc supplementation with increased fluids and including continued feeding in management of diarrhoea in children • Provide iron-containing multiple micronutrient powders for point-of-use fortification of foods when available for infants and young children aged 6–23 months in settings in which the prevalence of anaemia in children under two years of age (or under five years of age, if the former is unavailable) is 20 per cent or more when available. • Conduct routine weight and height or length assessments for children 6–23 months of age and nutrition counselling for children under five years of age, including children with disabilities • Counsel and support mothers, caretakers, and families to practice recommended infant and young child feeding of children with moderate and acute malnutrition in line with national guidelines • Counsel and support mothers, caretakers and families to practice recommended infant and young child feeding during emergencies and other exceptionally difficult/special

	<p>circumstances including but not limited to HIV, Ebola Virus Disease, Corona Virus Disease (COVID-19) and/ or disabilities.</p>
<p>24–59 months</p>	<ul style="list-style-type: none"> • Encourage consumption of a variety of locally available foods from the main food groups i.e. energy-giving foods (carbohydrates, fats, and oils), body-building foods (plant and animal proteins) and protective foods (vegetables and fruits) and in recommended frequency and quantities (Refer to Annex 10) • Provide preventive deworming • Provide Vitamin A supplementation • Conduct routine weight and height or length assessments for children under five years of age and nutrition counselling, including children with disabilities • Provide zinc supplementation with increased fluids and continued feeding for management of diarrhoea in children • Counsel and support all mothers with hepatitis to breastfeed their infants as recommended under “normal” circumstances in these guidelines. Mothers and children should be vaccinated against hepatitis according to the National Hepatitis Immunisation Guidelines.

Session 3.6 Vitamin A Supplementation Strategy for Children Aged 6 To 59 Months

Vitamin A Supplementation (VAS) is an efficient strategy implemented to boost the depleted Vitamin A body stores among vulnerable populations of young children.

Vitamin A Supplementation in children is in two parts.

1. Preventive Universal Vitamin A Distribution involves the periodic administration of vitamin A doses to all children below age five; (6-59 months), every 6 months
2. Targeted distribution to high risk children.
 - Infants and children with infections and severe malnutrition have an increased risk of Vitamin A deficiency.
 - Supplementation to this group ensures that the extra body requirements during disease conditions are met; thus, reducing the morbidity and mortality rates.

Preventive Universal Vitamin A Supplementation Protocols.

High-Dose Universal Distribution Schedule for the prevention of Vitamin A Deficiency.

Age and Target Group	Intervention Requirement	No of drops/capsules	Frequency
Infants 6 to 12 months	100,000 IU (Blue)	All drops (1 capsule)	Once
Children above 12-59 months	200,000 IU (Red/Orange)	All drops (2 capsules)	Every 6 months

Essential Actions to be taken prior and after Vitamin A administration

- Check the dose in vitamin A capsule, the child's age, and when the last dose of Vitamin A was received
- Ensure the Child has a Child Health Card or Mother- Child Health Passport for recording the given dose
- Administer the drops from the capsule into the child's mouth
- Do not ask the child to swallow capsule
- Do not give capsule to mother to take away
- Record the date of the dose on the child's card
- On the Tally sheet/register place a mark for each child dosed – follow up on the HMIS requirements
- Advise the mother when to return for the next doses of vitamin A and encourage completion of immunization protocols

MODULE 4

KEY STRATEGIES IN THE PREVENTION OF MALNUTRITION

Prevention of malnutrition is a key strategy of the MIYCAN. The approaches discussed in this Module are evidence based and will go a long way in preventing malnutrition.

Learning Objectives

By the end of the module participants should be able to:

4.1	Explain how to make a health facility baby-mother friendly	60 minutes
4.2	Demonstrate how to monitor and promote growth of a child	45 minutes
4.3	Discuss prevention and control of Micronutrient malnutrition	30 minutes
4.4	Discuss approaches to promote Early Childhood Development	45 minutes
Total time		150Minutes

Session 4.1 Making the Health Facility Baby-Mother Friendly

The first few hours and days of a newborn's life are a critical window for establishing and sustaining lactation and for providing mothers with the support they need to breastfeed successfully. Health workers themselves should be supported to breastfeed at their own health facilities.

Learning objectives

- Explain what Baby-friendly practices and baby friendly health facility initiative mean
- Describe the process of BFHI assessment
- Discuss how BFHI can be integrated into routine health services
- Discuss how to establish functional mother-baby friendly corner in the health facility

I. What Baby-friendly practices mean

- Baby friendly practices are practices that support the baby and the mother to initiate breastfeeding easily within the 1st hour after delivert. A Baby-Mother friendly Health facility:
 - Implements the 14 Requirements to successful breastfeeding.

- Accepts no free supplies or samples and no promotional material from companies that manufacture or distribute breast-milk substitutes.
- Uganda adapted the 14 requirements to successful breastfeeding from the WHO 10 global steps.

The 14 Requirements to Successful Breastfeeding.

Critical management procedures	
<p>Requirement 1:</p> <p>Comply fully with the International Code of Marketing of Breast-milk Substitutes and relevant World Health Assembly resolutions.</p>	<ul style="list-style-type: none"> ▪ The International Code has been translated into the Ugandan “Regulations on Marketing of IYC Foods” and the health facility needs to observe those provisions which apply to the health system. ▪ We discussed the Regulations in the IYCF Module under “Protecting Breastfeeding”
<p>Requirement 2:</p> <p>Have a written infant feeding policy that is routinely communicated to staff and parents.</p>	<ul style="list-style-type: none"> ▪ The SOP defines what the staff and services are required to do as their routine practice and should be mandatory. It helps parents to know what care they can expect to receive. It must be posted in all relevant areas. ▪ To satisfy the requirements of the BFHI, the SOP must cover all the twelve Requirements, as well as prohibiting free supplies of breast-milk substitutes, bottles and teats and promotional materials. ▪ The SOP must clearly define what the staff and services are required to do as recommended practices in the context of HIV, and in providing mother friendly care.
<p>Requirement 3:</p> <p>Establish ongoing monitoring and data-management systems.</p>	<ul style="list-style-type: none"> ▪ Facilities providing maternity and newborn services need to integrate recording and monitoring of the clinical practices related to breastfeeding into their quality-improvement/monitoring systems. ▪ Recommended indicators for facility-based monitoring of the key clinical practices are early initiation of breastfeeding and exclusive breastfeeding.
<p>Requirement 4:</p> <p>Ensure that staff have sufficient knowledge, competence and skills to support breastfeeding.</p>	<ul style="list-style-type: none"> ▪ Training of health staff enables them to develop effective skills, give consistent messages, and implement policy standards. Staff cannot be expected to implement a practice or educate clients on a topic for which they have received no training. ▪ Knowledgeable staff together can make the necessary changes, eliminate unsupportive practices, and develop baby-friendly practices that assist mothers and babies to breastfeed.
Key clinical practices	
<p>Requirement 5.</p> <p>Discuss the importance and management of breastfeeding with pregnant women and their families</p>	<ul style="list-style-type: none"> ▪ Breastfeeding education should include information on the importance of breastfeeding, management of breastfeeding and the risks of giving formula or other breast-milk substitutes, along with national recommendations for infant feeding. ▪ Practical skills such as positioning and attachment, on-demand feeding, and recognizing feeding cues are a necessary component of antenatal counselling.
<p>Requirement 6.</p> <p>Facilitate immediate and uninterrupted skin-to-skin contact and</p>	<ul style="list-style-type: none"> ▪ Skin-to-skin contact is when the infant is placed prone on the mother’s abdomen or chest with no clothing separating them. ▪ It is recommended that skin-to-skin contact begins immediately, regardless of method of delivery.

<p>support mothers to initiate breastfeeding as soon as possible after birth</p>	<ul style="list-style-type: none"> ▪ It should be uninterrupted for at least 60 minutes. ▪ Initiation of breastfeeding is typically a direct consequence of uninterrupted skin-to-skin contact, as it is a natural behaviour for most babies to slowly squirm or crawl toward the breast. ▪ Mothers may be supported to help the baby to the breast if desired. ▪ Skin to skin contact helps: <ul style="list-style-type: none"> - To keep the baby warm, and to stabilize breathing and heart rate. - Breastfeeding to get started - The mother and baby to get to know each other. ▪ If the baby or mother need immediate medical care at birth, this skin to skin contact can start as soon as they are stable.
<p>Requirement 6.</p> <p>Facilitate immediate and uninterrupted skin-to-skin contact and support mothers to initiate breastfeeding as soon as possible after birth</p>	<ul style="list-style-type: none"> ▪ Skin-to-skin contact is when the infant is placed prone on the mother's abdomen or chest with no clothing separating them. It is recommended that skin-to-skin contact begins immediately, regardless of method of delivery. It should be uninterrupted for at least 60 minutes. ▪ Initiation of breastfeeding is typically a direct consequence of uninterrupted skin-to-skin contact, as it is a natural behaviour for most babies to slowly squirm or crawl toward the breast. Mothers may be supported to help the baby to the breast if desired. ▪ Skin to skin contact helps: <ul style="list-style-type: none"> ▪ To keep the baby warm, and to stabilize breathing and heart rate. ▪ Breastfeeding to get started ▪ The mother and baby to get to know each other. ▪ If the baby or mother need immediate medical care at birth, this skin to skin contact can start as soon as they are stable.
<p>Requirement 7.</p> <p>Support mothers to initiate and maintain breastfeeding and manage common difficulties.</p>	<ul style="list-style-type: none"> ▪ Mothers should receive practical support to enable them to initiate and maintain breastfeeding and manage common breastfeeding difficulties. ▪ Practical support includes providing emotional and motivational support, imparting information and teaching concrete skills to enable mothers to breastfeed successfully. ▪ The stay in the facility is a unique opportunity to discuss and assist the mother with questions or problems related to breastfeeding and to build confidence in her ability to breastfeed. ▪ All mothers should receive individualized attention, but first-time mothers, mothers who previously experienced breastfeeding difficulties, mothers delivered by caesarean section and obese mothers should be given additional help with positioning and attachment
<p>Requirement 8.</p> <p>Do not provide breastfed newborns any food or fluids other than breast milk, unless medically indicated.</p>	<ul style="list-style-type: none"> ▪ Very few conditions of the infant or mother preclude the feeding of breast milk and necessitate the use of breast-milk substitutes. ▪ Infants who cannot be fed their mother's own milk, or who need to be supplemented, especially low-birthweight infants, including those with very low birth weight (<1.5Kg) and other vulnerable infants, should be fed donor human milk.
<p>Requirement 9.</p> <p>Enable mothers and their infants to remain together and to practice</p>	<ul style="list-style-type: none"> ▪ Rooming-in involves keeping mothers and infants together in the same room, immediately after vaginal birth or caesarean section, or from the time when the mother can respond to the infant, until discharge.

<p>rooming-in 24 hours a day.</p>	<ul style="list-style-type: none"> ▪ This means that the mother and infant are together throughout the day and night and should be in the same bed.
<p>Requirement 10.</p> <p>Support mothers to recognize and respond to their infants' cues for feeding.</p>	<ul style="list-style-type: none"> ▪ Supporting mothers to respond in a variety of ways to behavioral cues for feeding, comfort or closeness enables them to build a caring, nurturing relationship with their infants and increases their confidence in themselves in breastfeeding and in their infants' growth and development. ▪ Babies who have to cry to be fed use up energy crying and may fall asleep without feeding well. ▪ Key points to counsel mothers include: <ul style="list-style-type: none"> – Crying is a late sign of hunger – Early signs that baby wants to breastfeed: <ul style="list-style-type: none"> – Restlessness – Opening mouth and turning head from side to side – Putting tongue in and out – Sucking fingers or fists <p>Responsive feeding and Care Practices</p> <ul style="list-style-type: none"> ▪ Breastfeed on cue/demand ▪ Look closely into baby's eyes ▪ smile and softly talk to the baby as s/he breastfeed rest with the baby
<p>Requirement 11.</p> <p>Counsel mothers on the use and risks of feeding bottles, teats and pacifiers</p>	<p>The use of artificial teats or pacifiers may:</p> <ul style="list-style-type: none"> ▪ Interfere with the baby learning to breastfeed. ▪ Reduce milk production since the baby may prefer the teat/nipple and not suckle on the breast. ▪ Introduce infections to the baby
<p>Requirement 12.</p> <p>Coordinate discharge so that parents and their infants have timely access to ongoing support and care.</p>	<ul style="list-style-type: none"> ▪ The need for support and where to find support should be discussed with each mother before she is discharged from the health facility and each mother should be linked to support resources in the community. ▪ Facilities need to provide appropriate referrals to ensure that mothers and babies are seen by a community resource person within 2 days of delivery and by a health worker at 6days, 6 weeks and 6 months. ▪ The breastfeeding should be assessed at each contact. ▪ It is the facility's responsibility to engage with the surrounding community to enhance such resources. ▪ Community resources include lower healthcare centres, community health workers, home visitors, breastfeeding clinics, nurses/midwives, peer counsellors, mother-to-mother and family support groups, or phone lines ("hot lines"). ▪ The facility should maintain contact with the groups and individuals providing the support as much as possible and invite them to the facility from time to time. <p>It was later recognized at the global level that a baby friendly health facility also needs to provide care which is friendly for mothers, in addition to support HIV positive mothers to optimally feed their infants. Therefore, two other requirements were added.</p>

<p>Requirement 13</p> <p>Provide Mother-friendly Care.</p>	<p>Mother friendly birth practices assist a woman to feel competent, in control, supported and ready to interact with her alert and responsive baby.</p> <ul style="list-style-type: none"> • Supportive practices include: <ul style="list-style-type: none"> – companionship during labour – limiting invasive interventions – paying attention to the effects of pain relief – offering light food and fluids – avoiding unnecessary caesarean sections, and – facilitating early mother and baby contact
<p>Requirement 14</p> <p>Support Infant Feeding in the Context of HIV</p>	<ul style="list-style-type: none"> • HIV-infected mothers need information and counselling to abide by the national guidelines on IYCF. • The counselling support and guidance should be on-going and particularly intensive at those times when a change in feeding pattern is likely to be made, e.g. at the time of early infant diagnosis. • At the national level, managers further argued for the case to further strengthen clinical care services by inserting three other BFHI Requirements.

II. The Process of Mother – Baby Friendly Assessment

<p>Self Appraisal</p>	<ul style="list-style-type: none"> • The BFHI process begins when the health facility decides to make the changes and forms a BFHI Quality improvement team (BFHI QI Team) with a co-coordinator to take responsibility. Usually this consists of senior people in the health facility who can make decisions, and staff who are interested in IYCF and who know something about it. • The BFHI QI team arranges for 2-3 people to use the Self-Appraisal Tool to review their policies and practices that may help or hinder optimal IYCF. The experiences of the mothers and staff are a key source of information to assess if practices are in place.
<p>Internal Assessment</p>	<ul style="list-style-type: none"> ▪ This process is led by the MoH when they send a team of officials to verify that the health facility is indeed ready for external assessment. ▪ Because the external assessment is an expensive exercise, the MoH is unwilling to engage external assessors before ensuring that the health facility meets at least most of the BFHI Requirements, ▪ Once the MoH is satisfied that the health facility is doing well, they invite the external assessment team
<p>External Assessment</p>	<ul style="list-style-type: none"> ▪ After the Self-Appraisal is completed, the BFHI/QI team have to work to help other staff to make the necessary changes. When changes are thought to be satisfactory, the national baby-friendly authority (MoH) can cause an external assessment using the national criteria which include The Global Criteria. The Global Criteria are the same all over the world. The criteria cannot be made easier to meet an individual country's or health facility's standards, although some countries have made the criteria stricter. ▪ For the external assessment, a multi-disciplinary assessment team visits the health facility and interviews staff and mothers, observes practices and reviews documentation. The external assessment can take two or more days (and nights) depending on the size

	<p>of the hospital.</p> <ul style="list-style-type: none"> ▪ When possible, documents such as the staff training curriculum, the health facility policy, breastfeeding statistics, and antenatal information, are reviewed before the assessment team arrives at the hospital. ▪ Interviews with pregnant women and new mothers are key to the assessment. It is also important to interview staff members who have direct contact with mothers in the maternity services, to assess their knowledge and practices. It is not sufficient that senior management report on activities. ▪ The external assessment team does not designate a health facility as baby friendly. The team completes a report that goes to the MoH which is the national authority responsible for BFHI. ▪ The national authorities, consulting with WHO and UNICEF as necessary, determine if the health facility will be awarded baby-friendly designation and how the designation will be done. If the health facility does not meet the criteria, it may receive a Certificate of Commitment to becoming baby-friendly and guidance on how to make the improvements needed.
<p>On-going monitoring</p>	<ul style="list-style-type: none"> ▪ When a health facility is awarded baby-friendly status, it is required to maintain the standards of BFHI Criteria to remain designated as a baby-friendly health facility. To help maintain standards between assessments, practices need to be monitored. ▪ To monitor, you need to collect information about practices and tested changes. It is better to collect information about an <i>outcome or result</i> rather than about <i>activities</i>. For example, it is better to measure the number of babies and mothers who have skin-to-skin contact soon after birth, rather than to measure if an information sheet listing the benefits of skin-to-skin contact is available.
<p>External re-assessment</p>	<ul style="list-style-type: none"> • It is also important that health facilities which have been designated “baby-friendly” be reassessed on a regular basis. This reassessment helps to ensure that they maintain their adherence to the “fourteen BFHI requirements” over time and thus continue to give mothers and babies the support they need. • It is recommended that health facilities be reassessed approximately every 3 years but suggests that the national authority responsible for BFHI in each country make the final decisions concerning the timing and process to be followed. • Reassessment should be conducted, as with the assessment, by an external team. Although the country can use the full assessment tool for this process, it is often more cost-effective to use a simpler, less time-consuming tool, and a small assessment team. • Once a health facility has been reassessed, its status as baby-friendly can be renewed or, if it has slipped, it may be asked to work on any of the Requirements that need improvement, before official re-designation as a baby-friendly health facility.

III. Integrating BFHI in Existing Health Care Services

- Some health facilities participate in a national accreditation process, quality assurance or improvement programme that identifies equity of access, quality of service and accountability as the approach to quality of care.
- The BFHI fits into these quality assurance programmes. BFHI has measurable criteria and international standards. There are tools to assess how a health facility meets those standards and criteria. If a health facility already has a quality or accreditation system in place, the planning and monitoring tools of that system can be used.
- In a health facility, BFHI should be the responsibility of the BFHI QI Team. Including BFHI in the responsibility of a health facility-wide quality committee can assist in raising awareness of the importance of supportive practices for breastfeeding, as well as assisting in obtaining resources to implement BFHI.
- The expertise of staff in the maternity services is usually in the care of the mother and baby. The expertise of staff in a quality office is measuring and improving the quality of the care. For example, the quality office may not know that BFHI exists and that standards and tools are available. The maternity staff may not know what the quality office can do to assist with using the Self-Appraisal Tool, with developing or fitting into an existing regular audit process, and with planning for improvement. Both these areas of expertise can be used to provide a better service; however, each group will need to be aware of the other group's expertise and work together.
- BFHI can also be integrated with Safe Motherhood and/or IMCI programmes. However, for a health facility to be designated as a *baby-friendly* it must be assessed using the specific BFHI Criteria of the Initiative.

IV. Establishing a Functional Baby-Mother Friendly Corner

- a baby-mother friendly corner is a room/area designated for breastfeeding mothers to support continuity of breastfeeding while they are back to work.
- The area should provide for a private and discreet space where mothers are free to breastfeed, express breastmilk for their babies and if possible, allow for skilled support for the mothers with breastfeeding difficulties
- Discuss with staff and health facility managers about the need for a corner.
- Assemble items/equipment needed in the corner including IEC materials, videos, table, chairs, bed, mattress, pillows, play mats and toys as required, hand washing facilities, etc.

Session 4.2 Growth Monitoring and Promotion

Growth monitoring and promotion is the process of weighing the child, graphing the weight, assessing the growth and providing counselling and motivation for other actions to improve the growth.

Learning objectives

By the end of the session, participants should be able to:

- Explain the importance and components of growth monitoring and promotion
- Demonstrate the ability to plot a growth chart

- Explain how to interpret individual growth curves and counsel on feeding practices.

I. Importance and components of growth monitoring and promotion

- Growth monitoring and promotion provides information on the growth of individual children so that actions to maintain good growth and health can be taken or improve the child's health when there is a problem.
- It provides communities with information on health and nutrition status of their children in order to create a supportive climate for families to take appropriate actions and stimulate community actions that can improve the health and health nutritional status of children.

1. Advantages of Growth monitoring and promotion

- Provides a diagnostic tool for nutritional status.
- Counseling mothers about the relationship between diet and illness helps improve; and
- It helps provide regular contact with health services for timely care.

2. Components of growth monitoring and promotion package

- Regular assessment of child growth
- Decision on the adequacy of growth
- Assessment of the child's health and feeding
- Utilization of the information assessment
- Counseling on feeding and care for the child
- Follow up
- Sharing information with stakeholders including the community

II. Plotting GROWTH CHARTS

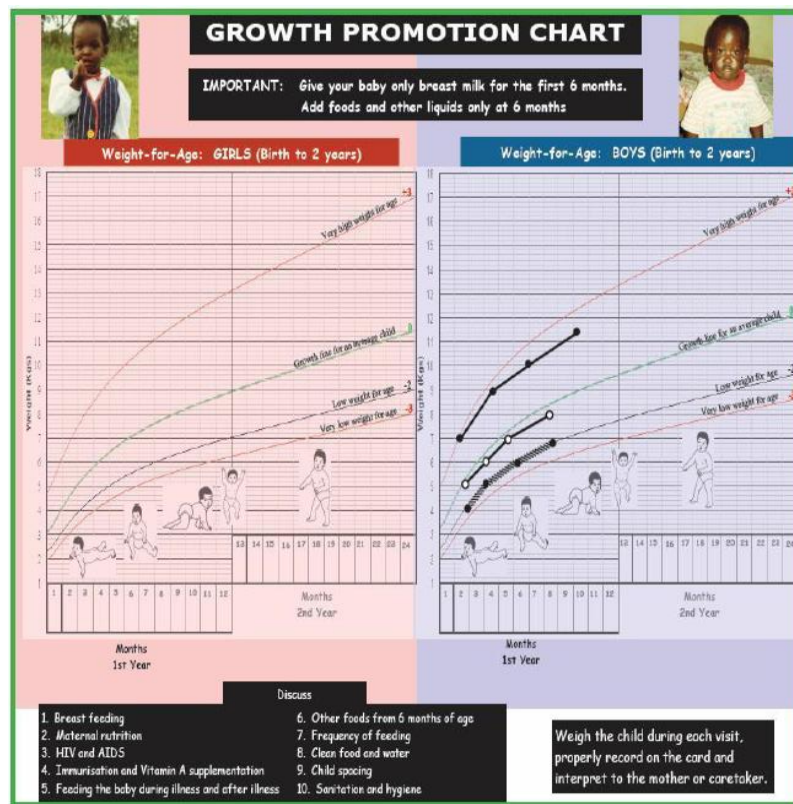
Normal Growth Patterns

- Tracking growth in length and in weight helps identify health problems early, preventing or minimizing slowing of the growth rate
- Healthy newborns double their birth weight by age 4-6months and triples it by 1 year
- Growth reflects nutritional adequacy, health status, and economic and other environmental influences on the family
- Healthy babies may follow different patterns of growth
- Healthy infants have short periods when their weight gain is slower or faster than at other times.
- Slight variations in growth rate can result from illness, teething inappropriate feeding position, or family disruption

Description of Growth Charts

- When counselling on infant feeding it is important to understand growth charts.
- If growth charts are not interpreted accurately, incorrect information can be given to a mother, leading to worry and loss of confidence.
- Growth charts can reflect past and present conditions including food intake and health status.
- What is most important is to see that the curve follows a trend that indicates the child is growing and there is no growth problem.
- Good feeding practices – both before the child is six months old and after complementary feeds have been introduced - can help prevent growth faltering in weight as well as the tendency to overweight.

Slide 9/2 Blank weight chart



- Here is a common weight chart: the left-hand side for girls and the right for boys
- The child's age in months is along the bottom of the growth chart
- The child's weight is up the side of the chart
- There are four curves on this chart. The line labelled 0 is the median which is the average. It is also called the 50th percentile because the weights of 50 percent of healthy children are below it and 50 percent are above it.
- Most healthy children are near this median curve, either a little above or below it
- The other lines, called z-score lines, indicate distance from the average. A point or trend which is far from the median, such as +3 or -3, usually indicates a growth problem.
- The growth curve of a normally growing child will usually follow a track that is roughly parallel to the median. The track may be above or below the median.

- A child whose weight-for-age is below the -2 z-score line (third line from the top) is underweight. A genetically or naturally small child may be near this curve but still be growing well.
- The bottom line (-3) indicates very low weight for age or severe underweight. A child near this line is probably not healthy and needs attention (*Point this out on the overhead*).

How to Plot a Growth Chart Exercise

Example

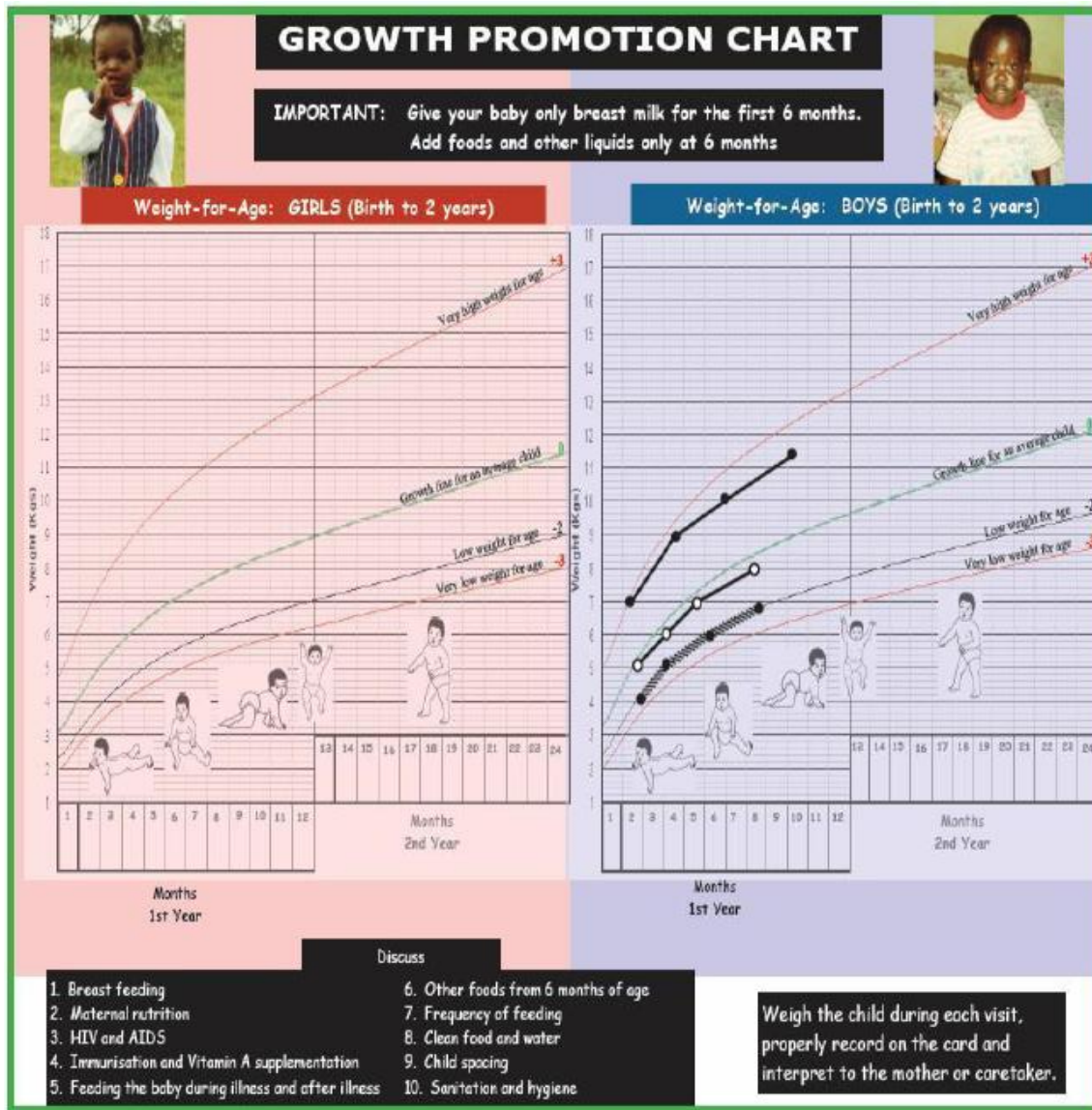
Use the blank growth chart in your manuals to plot the weight of Maria who is 15 months (1 year and 3 months) old. When she came today to the health facility, her weight chart was not available, and you do not know Maria. Her weight today is 8 kg.

Each time the child is weighed, the column for the age is followed up and the line for the weight is followed across to find the place to mark the dot

- One weight on its own does not give you much information. Maria's weight seems a little low for her age but you do not know if she is a small child who has grown steadily or a child who has lost weight. You need a pattern of marks before you can judge the tendency of growth.
- You will need to talk to Maria's mother to find out more about her eating and health. You will also observe Maria to see if she looks wasted or ill, or if she is active and healthy.
- Document Maria's weight in the growth chart. Assuming Maria is healthy, and you are not concerned about her weight or eating, encourage Maria's mother to bring her back in a month for another weight check.
- Connecting the dots for each visit forms the growth line for an individual child. Any quick change in trend (the child's curve veers upward or downward from its normal track) should be investigated to determine its cause and remedy any problem.
- A flat line indicates that the child is not growing. This is called stagnation and may also need to be investigated.
- A growth curve that crosses a z-score line may indicate risk

III. How to interpret individual growth

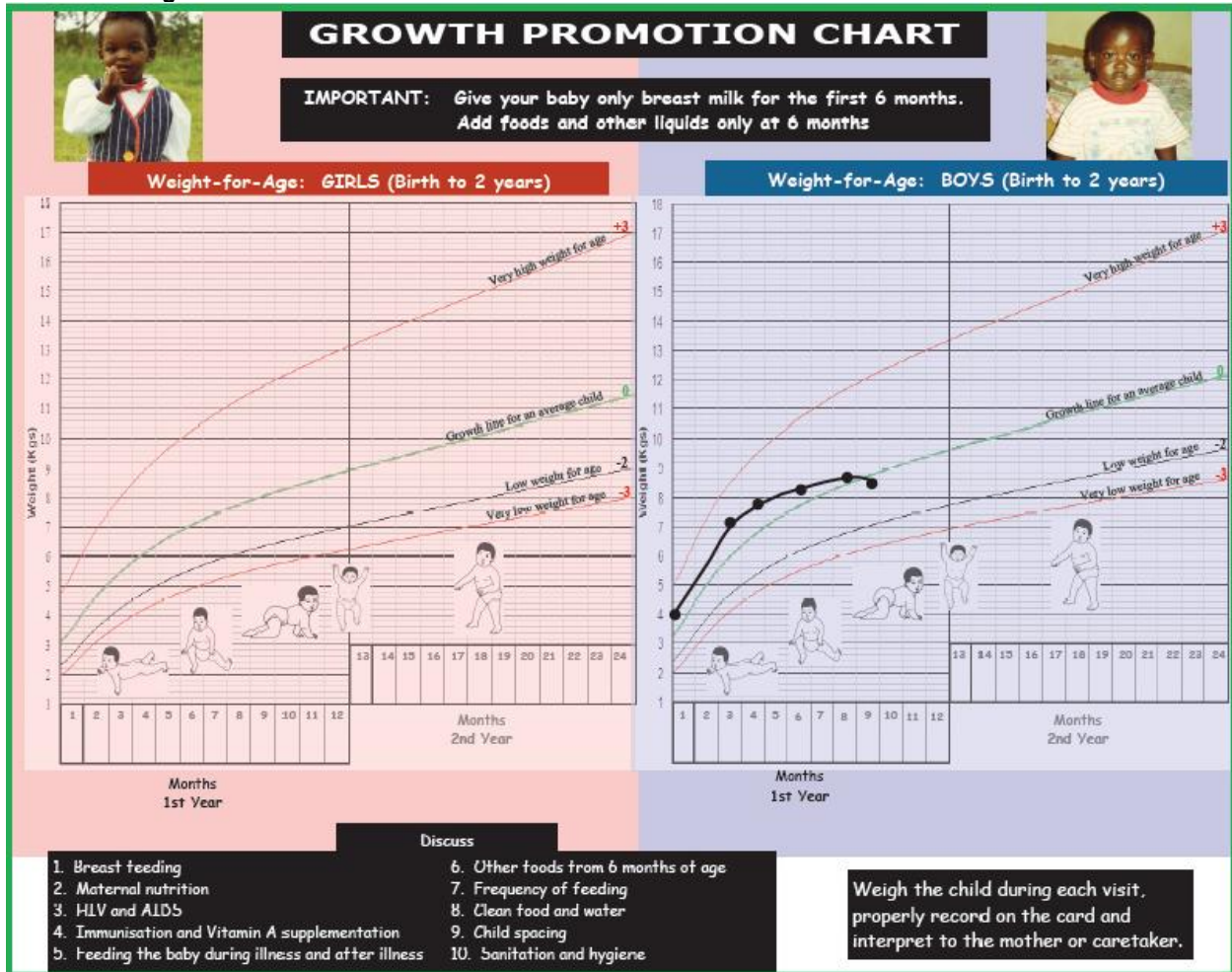
Slide 9/3– individual path



Here we have a growth chart for boys that shows the curves of three children who were weighed regularly.

- The growth lines on the chart show a similar shape to the standard curves. However, each child is growing along his individual path. Notice that they all had different weights from the beginning.
- A child may grow more at one time than another, so there may be small ups and downs in the line. It is important to look at the general shape or trend

Slide 9/4 - weight chart for Musiba



Here we have a growth chart for Musiba who nine months is old.

- Musiba grew well for the first few months but has not grown at all in the last three months.
- Some questions you might ask are:
- How was Musiba fed for the first six months of life?
- What milk does Musiba have now?
- What feeds does Musiba receive now? How often does he eat? How much does he eat?
- What types of food does he eat?
- How has Musiba health been over the past few months?
- You find out that Musiba was exclusively breastfed for the first six months of life and that his mother is still breastfeeding him frequently by day. He sleeps with his mother at night and breastfeeds during the night. At six months his mother started to give him thin cereal porridge twice a day.

What is Musiba's mother doing which could be praised?

- Some ways you might praise Musiba's mother are:

- You did well to exclusively breastfeed Musiba's for the first six months of life – look how well he grew just on your breast milk
- It is good that you are still breastfeeding Musiba now that he is over six months of age
- It is good that you are continuing to feed Musiba at nights and that he is sleeping with you

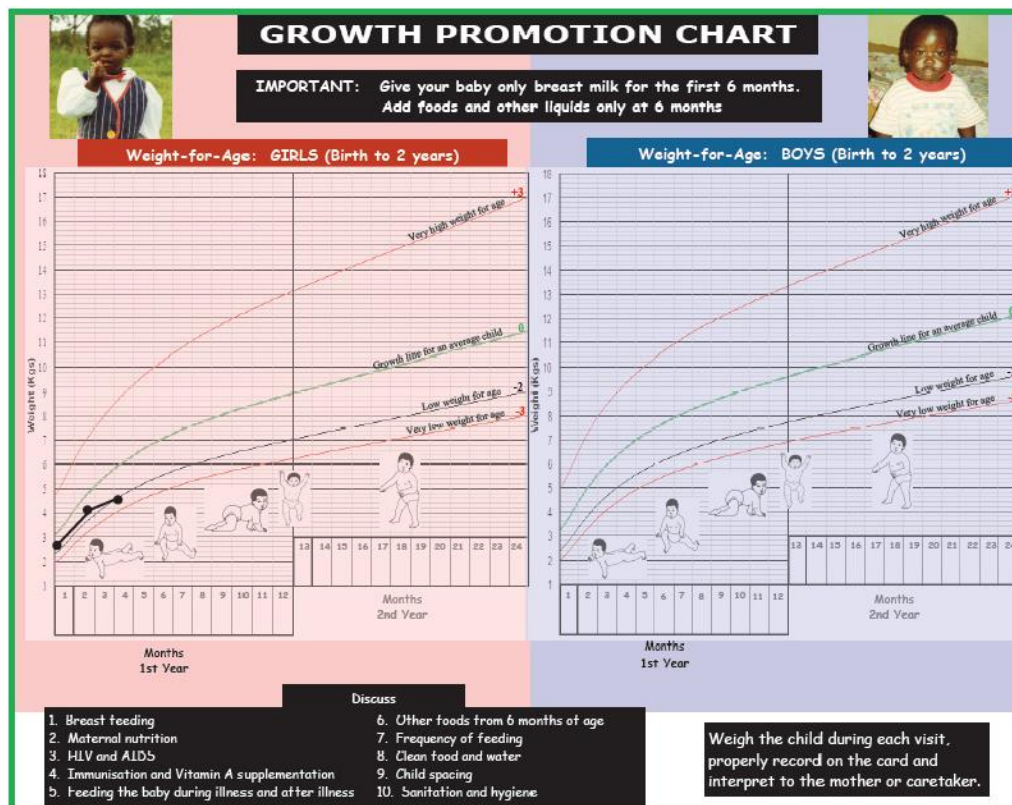
What do you think is the reason for Musiba's static weight?

- Musiba is only receiving two meals of thin porridge twice daily. He needs more frequent, nutrient-rich complementary foods each day now that he is over six months of age. We will talk in more detail about complementary foods later in the course.

How would you counsel Musiba's mother?

Extra work (Homework) Exercise

Slide 9/5 – Here we have a growth chart for Ana who is 3 months old.



What do you think of Ana's growth?

What questions would you ask Ana's mother and what would you want to check?

What do you think is the cause of Ana's slow weight gain?

Do you think Ana should be started on complementary feeds since she is not gaining weight?

Session 4. 3 Prevention and control of micronutrient malnutrition

Introduction

Interventions to address Micronutrient Deficiencies are classified under Food-Based Dietary Approaches, Supplementation, Food Fortification and Bio-fortification, Management and control of Parasitic Diseases. This session aims at equipping participants with knowledge on approaches for prevention and control of micronutrient malnutrition.

Learning Objectives

By the end of this session, participants should be able to:

<ul style="list-style-type: none">• Describe the food based dietary approaches
<ul style="list-style-type: none">• Describe the Vitamin A Capsule supplementation strategy for children aged 6 to 59months
<ul style="list-style-type: none">• Describe the Iron/Folic Acid supplementation strategy for women in the reproductive age group
<ul style="list-style-type: none">• Discuss food fortification and bio-fortification approaches
<ul style="list-style-type: none">• Discuss the preventive measures for control of parasitic diseases

1. FOOD BASED DIETARY APPROACHES

Food-based approaches to increase micronutrient intake are important sustainable strategies for preventing micronutrient deficiency in the general population. Specific programmes under the Food-Based Dietary Approach include:

- i. Breastfeeding promotion of the key practices:
 - Early initiation within 1 hour of birth;
 - Exclusive breastfeeding for the first 6 months;
 - Continued breastfeeding for up to 24 months of age and beyond. Important to note that although breastfeeding should be sustained, breastmilk will not suffice to fulfill an infant's micronutrient needs after 6 months of age
 - Breastfeeding of children exposed to HIV. Infant and Young Child Feeding recommendation (of HIV positive mothers to breast feed for at least 12 months as long as the baby or mother is receiving ARV's) coupled with Early Infant HIV testing and Diagnosis (EID).

- ii. Promotion of appropriate complementary feeding with micronutrient –rich foods. However, it is important to note that complementary foods, even if introduced on time are likely to be low in micronutrient content or bioavailability
- iii. Nutrition education directed at improving micronutrient status, through behavioral change
- iv. Increased production and regular utilization of micronutrient-rich foods

a) Food-Based strategies for control and prevention of Vitamin A Deficiency (VAD).

In order to ensure adequate intake of Vitamin A, it is essential to:

- Promote, protect and support breastfeeding for infants and young children.
- Promote consumption of vitamin A rich foods for complementary feeding, and normal family diet.

Good food sources of Vitamin A

- Animal Sources and processed foods: Butter (ghee), Cheese, Eggs, Liver, Yoghurt, Fish, Fortified foods Animal food sources are better source of vitamin A compared to plant food sources. Because vitamin A is fat soluble, it can be more fully utilized and absorbed by the body when fruit and vegetables are mixed or eaten with a fat source.
- Plant Sources:
 - Green leafy vegetables:** Amaranths, (Ddodo), Ggobe, Marakwang, Spinach, Sukuma-wiki (Kale), Cassava leaves, Bean leaves, Cow peas, Pumpkin leaves.
 - Red/Orange plant sources:** Red palm oil, Red pepper, Orange Fleshed Sweet Potatoes, Carrot, pumpkin. Vitamin A in orange/yellow fruit and vegetables are twice as effective in enhancing serum vitamin A levels as those found in dark green leafy vegetables
- Promote consumption of Vitamin A Fortified foods
 - Fortification of foods with Vitamin A is a safe, effective, and relatively inexpensive intervention.
 - Foods fortified with vitamin A include;
 - Vegetable oil and fats.
 - Complementary and supplementary foods or other multi-mixes such as corn soya blend (CSB). Vitamin A is a constituent of the premix/fortificant used for fortification.
 - Food products prepared from fortified staples such as maize flour, wheat flour and vegetable oil are good sources of vitamin A.
- Promote production of bio-fortified vitamin A-rich foods, such as the orange fleshed sweet potato.

b) Food-Based Strategies for control and prevention of Iron Deficiency

Food-based approaches to increase iron intake through dietary diversification and food fortification are important sustainable strategies for preventing iron deficiency anaemia in the general population. However, approaches that combine iron interventions with other measures are needed in settings where iron deficiency is not the only cause

of anaemia. These include:

- Promoting, protecting and supporting breastfeeding.
- Production and Consumption of iron rich foods.

The intake of iron and folic acid before conception helps to provide adequate reserves that help to prevent anemia later during pregnancy.

- All women should be encouraged to eat a variety of foods, according to local availability and accessibility, in adequate amounts in order to meet their nutritional requirements.
- In addition to the regular three meals, women should be counseled to eat at least one extra meal (snack) per day while pregnant and two extra meals per day while breastfeeding, to meet the daily energy requirements of pregnancy and lactation respectively.

Key messages

- Regular intake of iron rich foods such as liver, red meat, kidney, fish, chicken, millet, ground nuts, and green leafy vegetables should be promoted.
- Foods containing iron absorption inhibitors should be avoided: (e.g. tea/ coffee) just before, during and shortly after meals. Consumption of foods containing caffeine should be avoided two or more hours before or after taking iron containing foods or iron supplements.
- Advice should be given on intake of foods containing iron absorption enhancers just before, during and after meals (e.g. foods rich in vitamin C like oranges, tangerines, mangoes, meat and fish products, tomatoes, green peppers etc.). Fortified Foods products such as vegetable oil, staple cereals (maize, wheat) should be included in the household diet.

Table **: Common Iron Rich Foods

Easily Absorbed	Poorly absorbed, unless eaten with meat, offal, poultry or fish or foods rich in Vitamin C
Breastmilk	Whole grain cereals (e.g. Millet and sorghum)
Liver, Red meat, poultry, kidney and fish	Legumes
Fortified foods	Dark green vegetables (e.g. amaranthus - ddodo, spinach)

c) Food-Based Strategies for control and prevention of Iodine, Zinc and Folic Acid

Good food sources

- Iodine. Important sources of iodine are fish and other food from the sea; and salt containing iodine (iodised salt).

- Folic acid is present in foods of plant and animal sources particularly liver and kidney, fish, beans and groundnuts and fresh vegetables particularly dark green vegetables as well as whole grains, and fortified breads and cereals.
- Zinc is present in liver, beef, pumpkin seeds, watermelon seeds, cocoa, spinach, sea foods. It should be noted animal foods are better source of zinc than plant foods.

2. VITAMIN A CAPSULE SUPPLEMENTATION STRATEGY FOR CHILDREN AGED 6 TO 59 MONTHS

Vitamin A Capsule Supplementation (VACS) is an efficient strategy implemented to boost the depleted Vitamin A body stores among vulnerable populations of young children.

Vitamin A Capsule Supplementation in children is in two parts;

3. Preventive Universal Vitamin A Distribution involves the periodic administration of vitamin A doses to all children below age five; (6-59 months), every 6 months
4. Targeted distribution to high risk children;
 - Infants and children with infections and severe malnutrition have an increased risk of Vitamin A deficiency.
 - Supplementation to this group ensures that the extra body requirements during disease conditions are met; thus, reducing the morbidity and mortality rates.

Preventive Universal Vitamin A Supplementation Protocols.

Table **: High-Dose Universal Distribution Schedule For Prevention of Vitamin A Deficiency.

Age and Target Group	Intervention Requirement	No of drops/capsules	Frequency
Infants below 6 months of age: (Non-breast-fed infants ONLY)	50,000 IU (Half blue)	4 drops (1/2 capsule)	Once at first contact
Infants 6 to 12 months	100,000 IU (Blue)	All drops (1 capsule)	Every 6 months
Children above 12 months	200,000 IU (Red/Orange)	All drops (2 capsules)	Every 6 months

Essential Actions to be taken prior and after Vitamin A administration

- Check the dose in vitamin A capsule, the child's age, and when the last dose of Vitamin A was received
- Ensure the Child has a Child Health Card or Mother- Child Health Passport for recording the given dose.
- Administer the drops from the capsule into the child's mouth.
 - Do not ask the child to swallow capsule;
 - Do not give capsule to mother to take away.
 - Record the date of the dose on the child's card
- On the Tally sheet/register place a mark for each child dosed – follow up on the HMIS requirements

- Advise the mother when to return for the next doses of vitamin A and encourage completion of immunization protocols

3. IRON/FOLIC ACID SUPPLEMENTATION STRATEGY FOR WOMEN IN THE REPRODUCTIVE AGE GROUP

Iron Deficiency Anaemia/folic acid deficiency

Iron Deficiency Anaemia is a common type of anaemia – a condition in which blood lacks adequate healthy red blood cells. Red blood cells carry oxygen to the body's tissues. IDA is due to insufficient iron. Without enough iron, your body cannot produce enough of a substance in red blood cells that enables them to carry oxygen (hemoglobin). As a result, IDA may leave one tired or short of breath.

Importance of Iron and/or folic acid supplementation before, during and after pregnancy (Lactation)

- Anaemia increases risks during pregnancy and childbearing. During delivery, an anemic woman is likely to bleed severely, and she may die. IDA causes most maternal deaths during delivery;
- Babies born to anemic women are at risk of being preterm; low birthweight (LBW), being anemic or dying

Strategies for controlling iron deficiency anaemia

The strategies for controlling iron deficiency anaemia address physiological needs during the reproductive cycle of women. Target Group for iron deficiency anaemia prevention among women of reproductive age focuses on meeting requirements of women during:

- Preconception period
- During pregnancy
- During lactation

(a) Preconception period

Foetal growth and development are influenced by the nutritional status of the mother in the period before she conceives and at the time of conception. This preconception period is therefore considered to be an important time for interventions that optimize maternal health.

Folic acid supplementation and adequate iron/folate rich foods are recommended. Folic acid also plays a major role in the production of red blood cells.

- The neural tube closes during the 4th week of pregnancy - a time when most women may not even know they are pregnant.

- In the pre-conception period, neural tube defects (NTDs) can be prevented with folic acid supplementation, either alone or in combination with other vitamins and minerals.

The role of folic acid at preconception is to reduce the risk of birth defects of the brain and spine, called neural tube defect (NTD) in the newborn

Table 11: Protocol for supplementation of folic acid during preconception period.

Target Group	Recommended dose/Action
Pre-conception Period (Adolescent girls and women (15-49 Years)	400ug folic acid. Daily for one-month preconception

(b). Pregnancy period

There is increased demand for micronutrients during pregnancy. The micronutrient deficiencies increase the risk of maternal morbidity and mortality during the pregnancy, delivery, and postpartum periods.

Table 12: Recommended Cut-Offs for Anaemia Classification of Pregnant Women

Anaemia Classification	Recommended dose/Action
Normal	>11g/dl
Mild	10-10.9g/dl
Moderate	9-9.9g/dl
Severe	<7g/dl

All pregnant women should be screened for anemia and corrective action taken.

Table 13: Protocol for supplementation among Pregnant Women

Target Group	Recommended dose/Action
Pregnant women during Antenatal Care (ANC)	Iron: 60mg of elemental iron (200mg of ferrous sulphate) 400Ug folic acid OR Combined iron (150mg with 0.5mg folic acid)

Key messages:

- Pregnant women should
 - Start supplementation after 3 months of gestation.
 - Take supplement daily for 6 months
 - Take supplement with food to overcome side effects - e.g. indigestion and nausea
- All pregnant women should be encouraged to attend at least eight (8) ANC sessions at health facilities during which they receive iron and folic acid supplementation according to nationally accepted protocols to prevent anemia.
- Health education and counseling on appropriate diet in pregnancy should be conducted at every antenatal care visit.
- Pregnant women should be counseled to ensure compliance with the recommended iron and folic acid supplementation intake of at least 90+ tablets.
- The pregnant woman should be counseled on side effects
- Assess for severe pallor to identify severely anemic women and administer treatment appropriately.

Table 14: Treatment protocol for severe anaemia during pregnancy

Target Group	Recommended dose/Action
Pregnant woman	Iron: 120mg 400Ug folic acid daily for 3 months

Three (3) months after completing this treatment, pregnant women should continue with routine preventive supplementation of iron and folic acid

(c) Breastfeeding Period

Overall nutritional requirements during postnatal period are high due to:

- The need to produce breast milk
- The need to promote recovery and sustain the mother's health
- Increased physical activity compared to pregnancy

To prevent anemia in mothers during lactation/breast feeding, supplementation with 1 tablet/day (60mg) for three (3) months after delivery is recommended in addition to the intake of iron-rich foods.

Table **: Protocols for iron/folic acid supplementation among breastfeeding women.

Target Group	Recommended dose/Action
Lactating women (postnatal care)	Iron: 60mg of elemental iron (200mg of ferrous sulphate) Folic acid: 400Ug

4. FOOD FORTIFICATION AND BIO-FORTIFICATION APPROACHES

Fortification of commonly consumed foods is a relatively inexpensive and effective means of increasing micronutrient intake. Adequate consumption of fortified foods has been shown to improve micronutrient status. The choice of a food vehicle depends on a series of factors, including the target group, food consumption patterns.

5. Food Fortification

Fortified foods include Salt with iodine to prevent Iodine Deficiency Disorders (IDD); Cereals (wheat and maize, with multi-mix of vitamins and minerals); Vegetable oil and fats with vitamin A; Processed Complementary foods with multi-mix of vitamins and minerals (such as Corn-Soy Blends – CSB); and Home fortification of complementary foods with multiple micronutrient powders (MNPs). Micronutrients content of fortified staples:

- *Vegetable Oil*: Vitamin A
- *Maize flour*: Vitamin A, Folic Acid, Vitamin B-12, Vitamin B-1, Vitamin B-2, Vitamin B-6, Niacin, Zinc, Iron.
- *Wheat flour*: Vitamin A, Folic Acid, Vitamin B-12, Vitamin B-1, Vitamin B-2, Vitamin B-6, Niacin, Zinc, Iron.

6. Bio-fortified foods

Bio-fortified foods are conventionally bred food crops rich in specific nutrients.

- Bio-fortified beans with iron and sweet potato with provitamin A have been proven to improve iron and vitamin A status of individuals respectively; and
- Orange-fleshed sweet potato is an important source of beta-carotene, the precursor to Vitamin A.

5. PREVENTIVE MEASURES FOR CONTROL OF PARASITIC DISEASES

Blood loss due to infections due to hookworm, malaria, and other conditions like HIV and sickle cell anaemia, can cause anaemia. The essential elements of micronutrient deficiency prevention and control include:

- Disease control measures such as immunization, parasitic control, provision of sufficient water and public sanitation, control of diarrheal disease and acute respiratory infections (ARI); and
- Teaching of personal hygiene and sanitation practices.

Measures to control of parasites and infections among infants and young Children include:

- a) Malaria control and prevention such as sleeping under an insecticide treated net every day; early diagnosis and prompt treatment of malaria infection at a health unit by trained health providers; and clearing of mosquito breeding places such as stagnant water, and bushes in home environment
- b) Routine distribution of anthelmintic medication (De-worming) of all children 12-59 months and school children up to 14 years (twice a year during CHILD Days) based on national guidelines
- c) Improvement of sanitation through proper faecal disposal (e.g. proper use of latrines) and promotion of use or consumption of safe water given that the usual primary source of diseases is related to environmental hygiene
- d) Handling food and water should be handled in a hygienic manner as well as regular hand washing with soap or alternative in order to avoid food and water-borne illnesses.

Table 15: Preventive protocol for Control of parasites and infections among infants and young Children

Target Audience	Intervention Requirement	Dosage/Desired Action
Infants and children	Malaria control and prevention	<ul style="list-style-type: none"> - Daily use of insecticide treated nets (ITN) - Prompt diagnosis and treatment of malaria
Children 1-2 years	Deworming	<p><u>Single dose every 6 months</u></p> 200 mg Albendazole 250 mg Mebendazole
Children above 2 years		<p><u>Single dose every 6 months</u></p> 400 mg Albendazole 500 mg Mebendazole

Measures to control of parasites and infections among pregnant women include:

- c) Malaria control and prevention such as sleeping under an insecticide treated net every day; early diagnosis and prompt treatment of malaria infection at a health unit by trained health providers; and clearing of mosquito breeding places such as stagnant water, and bushes in home environment. All pregnant women should be given preventive doses of fansidar during the second and third trimesters; and
- d) Pregnant women should receive deworming medication after the first trimester, when it is safe.

Table 16: Protocol for Prevention of Infections and Parasites in Pregnancy

Target Audience	Intervention Requirement	Dosage/Desired Action
Malaria Control		
Fansidar/SP (IPT for Malaria)	Intermittent Preventive treatment (IPT) with Sulfadoxine/Pyrimethamine (SP) is the recommended medicine for IPT. 3 tablets single dose during: 2nd trimester (4-6 months) and 3rd trimester (7-9 months) by Directly Observed Therapy (DOT) at least one month apart. Do not give fansidar in the first trimester (first 3 months).	<ul style="list-style-type: none"> - Side effects - Temporary Nausea and vomiting - Abdominal pain (These are not dangerous) Counsel mother on compliance with the treatment. Give it by DOT Delay intake of folic acid or combined Iron/folic acid tablets for 1 week after administration of fansidar because folic acid interferes with the effect of fansidar.
Preventive Treatment for Worm Infestations		
Albendazole/ Mebendazole	Albendazole 400 mg as a single dose (at 1st contact but not in	Take a single dose of albendazole or a single dose of mebendazole in the

	the 1st trimester) Or Mebendazole 500mg as a single dose (at 1st contact but not in the 1st trimester).	second trimester of pregnancy as treatment for hookworm. Temporary Nausea, vomiting and Abdominal pain Give medication by DOT.
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Session 4. 4 Early Childhood Development

Introduction

Early childhood development is a process through which children grow and thrive physically, mentally, socially, emotionally and morally from birth to 8 years.

The early years are critical to the development and future health and outcomes for all children. Giving children a strong foundation in the early years enhances the key components of growth and development – communication, physical skills and coordination, learning skills, emotional health and wellbeing, and resilience – and thus enables them to perform better at school, develop good social skills and grow into healthy adults. In order to grow and develop and reach their potential, children require all of their needs to be met. These needs include physical needs for nutrition, sleep, warmth, personal care and a safe, healthy environment. Just as important are their emotional and psychological needs for comfort and attention, positive and consistent interactions with parents, stimulating play and, later, guidance and support as they begin to explore their world.

Learning Objectives

At the end of the session participants should be able to:

- Explain the key terms related to Early childhood development
- Discuss age-appropriate recommendations for play and stimulation
- Discuss the role of health workers in integrating ECD in MIYCAN programming

I. Key terms and concepts related to Early Childhood Development

- Child development is the process of change in which the child masters more and more complex levels.
- Early childhood refers to the period between birth and eight years of age.
- Growth is the change in weight, height and circumference of the head.
- Responsiveness refers to parenting that is prompt and appropriate to the child’s immediate behavior, needs and developmental state.
- Care is the attention to body, health, nutrition and emotional, social, language and intellectual development.

Why focus on ECD

- ECD contributes to social, economic and human development, increase of workforce productivity, and poverty reduction
- Every \$1 (3700ugx) invested in ECD can provide a return of up to \$17 (62,900ugx)
- The National Integrated Early Childhood Development policy recognizes nutrition education and support as part of the key ECD services to improve child development and growth. This presents an opportunity for integration of nutrition at all ECD care points that are outside of the health facility.
- Prioritised key ECD services in NIECD policy are; Early infant stimulation and education, Responsive feeding and care, Parent education, Sanitation.
- The MIYCAN guidelines which takes on a lifecycle approach to service delivery recognises ECD as a critical intervention for child survival.
- Communities, household and health facility structures present possible platforms for ECD integration for the younger children from birth to 3 years since ECD centers usually cater for children 3 years and above

Children who miss ECD are usually prone to:

- Social Behavioural problems
- High risk of child abuse
- Poor health (esp. Stunting)
- Poor school performance, retention, and productivity
- Un-committed to achieving goals

II. Age appropriate play and stimulation: Recommendations for Care for Child Development

Children need adults who give them love, affection, and appreciation. They need adults who spend time playing and communicating with them. Adults help children from birth to learn the skills that will make it possible for them to become competent, happy, and caring adults.

Importance of play and stimulation

- Play is the main component of early childhood stimulation and central to good mother-child interaction.
- Play is an opportunity for all the significant activities that enhance good development to take place.
- Babies, infants and children learn through play.
- Play strengthens the bonds between parents and children.
- From birth, play provides an opportunity to receive and show love, through paying warm attention, smiling and talking; to communicate through touch, expression, listening and trying out new words; to explore and understand the world through touching, looking, building, and to develop new physical and sensory skills while doing so.

- Play demands attention and concentration and it develops problem solving, decision making and learning skills.
- Play enhances relationships, both with parents and other children.
- Children learn how to take turns and cooperate, learn rules, negotiate, and resolve conflicts.
- In play parents and caregivers can model the best approaches to all the above and allow the child to experiment and explore safely on their own.
- Play also provides a space to try out multiple identities.

Figure 1 Recommended caring practices for young children’s development

RECOMMENDATIONS FOR CARING FOR YOUR CHILD'S DEVELOPMENT

Age Group	Play Recommendations	Communication Recommendations
Newborn, birth up to 1 week	Your baby learns from birth.	Look into baby's eyes, and talk to your baby. When you are breastfeeding is a good time. Even a newborn baby sees your face and hears your voice.
1 week up to 6 months	Provide ways for your child to see, hear, feel, move freely, and touch you. Slowly move colourful things for your child to see and reach for. Sample toys: shaker rattle, ring on a string.	Smile and laugh with your child. Talk to your child. Get a conversation going by copying your child's sounds or gestures.
6 months up to 9 months	Give your child clean, safe household things to handle, bang, and drop. Sample toys: containers with lids, metal pot and spoon.	Respond to your child's sounds and interests. Call the child's name, and see your child respond.
9 months up to 12 months	Hide a child's favourite toy under a cloth or box. See if the child can find it. Play peek-a-boo.	Tell your child the names of things and people. Show your child how to say things with hands, like "bye bye". Sample toy: doll with face.
12 months up to 2 years	Give your child things to stack up, and to put into containers and take out. Sample toys: Nesting and stacking objects, container and clothes clips.	Ask your child simple questions. Respond to your child's attempts to talk. Show and talk about nature, pictures, and things.
2 years and older	Help your child count, name, and compare things. Make simple toys for your child. Sample toys: Objects of different colours and shapes to sort, stick or chalk board, puzzle.	Encourage your child to talk and answer your child's questions. Teach your child stories, songs, and games. Talk about pictures or books. Sample toy: book with pictures.

Give your child affection and show your love.
Be aware of your child's interests and respond to them.
Praise your child for trying to learn new skills.

- Physical/Motor skills—Reaching and grabbing: to organize planned eye and hand movements, and control and strengthen muscles.
- Cognitive skills—Hearing, moving, seeing, touching; to stimulate exploration for learning; to recognize people, things, and sounds; to compare sizes and shapes.
- Social skills—Communicating interests and needs: to express self through verbal and non-verbal skills.
- Emotional skills—Having appropriate emotional reactions to own efforts and other people: to receive and express appropriate emotions and affection.

The above skills develop through play and communication; use of home –made toys that are readily available to caregivers should be utilized.

III. Nutrition and ECD integration

ECD interventions to integrate into IYCF programming	IYCF interventions to integrate into ECD programmes
<ul style="list-style-type: none"> • Responsive feeding counseling within all community and facility IYCF programmes • Reinforcement of active and responsive feeding during complementary feeding education sessions • Integration of stimulation activities into counselling sessions on nutrition eg provision of toys, establish safe spaces etc • Teach mothers how to make toys using local materials • Integrate family and parenting education on ECD in IYCF sessions eg making toys using locally available materials • Capacity building of HWs in integrated MIYCAN and ECD modules • Use contact points with pregnant women and young children to reinforce messaging on early play, stimulation and responsive care 	<ul style="list-style-type: none"> • Reinforce linkages with ECD centers as platforms for nutrition screening, deworming and VAS • Integrate nutrition in pre-school programmes • Capacity building of teachers on IYCF components

IV. Role of health workers

- Support integration of ECD priority services/interventions into routine IYCF programming
- Set up child friendly corners in paediatric wards or ITCs
- Orient parents and caregiver with children to;
 - Help the child harness its cognitive, verbal, motor and affective skills.
 - Feed on demand and feed responsively
 - Protect a child from, imminent harm and injury
 - Recognize and seek care when the child is sick
 - Help child learn to speak, read, solve problems and learn other life skills
 - Help a child adapt to the environment and in social relationships

ECD interventions to integrate into IYCF programming	IYCF interventions to integrate into ECD programmes
<ul style="list-style-type: none"> • Responsive feeding counseling within all community and facility IYCF programmes • Reinforcement of active and responsive feeding during complementary feeding education sessions 	<ul style="list-style-type: none"> • Reinforce linkages with ECD centers as platforms for nutrition screening, deworming and VAS • Integrate nutrition in pre-school programmes • Capacity building of teachers on IYCF components

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MODULE 5

OVERVIEW OF SYSTEMS STRENGTHENING AND QUALITY IMPROVEMENT FOR MIYCAN

INTRODUCTION

The Ministry of Health uses the health systems approach with the primary intent to restore, promote or maintain health. The MIYCAN systems strengthening will be based on health system building blocks as presented by the World Health Organisation

This module will cover select health systems blocks to improve integration and performance of MIYCAN in health facilities and this will include the use the quality improvement approaches.

Learning objectives

By the end of the module participants should be able to:

5.1	• Explain Quality Improvement in the implementation of MIYCAN	175 minutes
5.2	• Describe Health Facility–Community Linkages	55 minutes
5.3	• Describe Supplies and equipment Management at health facilities	85 minutes
5.4	• Explain Monitoring and Reporting for MIYCAN	95 minutes

Total time	405 Minutes
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Session 5.1 Quality Improvement in the Implementation of MIYCAN

Quality Improvement applies appropriate methods to close the gap between current and expected level of quality/performance as defined by standards. MIYCAN strategic direction is to use QI to strengthen implementation in improving service quality by identifying and improving existing gaps between services actually provided and desired standards. This session will update health workers on the use of quality management tools and principles to understand and address system deficiencies, enhance strengths, and improve healthcare processes

Learning Objectives

By the end of the session, participants should be able to:

- Describe key concepts and terms in quality of care
- Describe how the steps of quality improvement is used to implement MIYCAN in Routine Health services
- Develop a plan for integrating the four steps of QI in MYCAN Implementation within health care systems

I. Key concepts and terms in quality of care

Understanding and Implementing the Improvement Cycle

Quality is defined as the extent to which health care, services, systems, and programmes conform to national or international standards, requirements, and specifications.

- Safe
- Effective
- Patient-centred
- Timely and efficient
- Equitable

Quality improvement is defined “as systematic, data-guided activities designed to bring about immediate improvement in health care delivery in particular settings

Features of quality in delivery of MIYCAN services

- Ability to satisfy stated or implied needs
- Performance according to standards
- Conformity to requirements
- Appropriateness for purpose or use
- Meeting the client’s reasonable expectations
- Doing the right things right

Dimensions of Quality

- Technical performance
- Effectiveness of care
- Efficiency of service delivery
- Safety
- Access to services
- Interpersonal relations
- Continuity of services
- Physical infrastructure and comfort
- Choice

Benefits of QI

Understanding and properly implementing QI is essential to a well-functioning practice and is necessary for any practice interested in improving efficiency, patient safety, or clinical outcomes.

Quality improvement requires five essential elements for success:

- Fostering and sustaining a culture of change and safety,
- Developing and clarifying an understanding of the problem,

- Involving key stakeholders
- Testing change strategies
- Continuous monitoring of performance and reporting of findings to sustain the change.

The principles of QI

1. Client focus: Services should be designed to meet the needs and the expectations of the clients or community. This requires gathering information about and from clients. When health facilities meet or exceed client expectations, clients return, are more likely to comply with advice, and refer others to the services.
2. Focus on systems and processes: A system is a set of interacting and interdependent parts and processes. A process is a series of steps used to perform a task or accomplish a goal. Health providers must understand the service system and key service processes to analyze gaps and address causes of poor performance.
3. Testing changes and emphasising the use of data: Changes are tested, and data are used to analyze processes, identify problems, and determine whether the changes resulted in the required improvement.
4. Teamwork: A team is a group of people working together to achieve a common goal for which they share responsibility. Improvement can be achieved through the team approach to problem solving and quality improvement.

The difference between quality assurance and quality improvement

Quality Assurance (QA): ensures basic functions of a healthcare delivery system. QA determines whether the healthcare being delivered is in compliance with predefined standards. Many of the interventions, such as having policies, standards, guidelines, adequate human resources, equipment and infrastructure, are important quality assurance parameters.

Quality Improvement (QI) is about changing behaviors, approaches and systems to maximize the quality of care that patients receive. Quality improvement moves beyond quality assurance and seeks to transform the culture within which healthcare is delivered. Quality improvement requires the systematic use of improvement models or tools, such as the Plan-Do-Study-Act (PDSA) cycle.

Quality Assurance	Quality Improvement
Driven by regulatory and accrediting agencies	Internally driven; empowers all personnel to make improvements
Tends to focus on finding who is responsible for errors	Focuses on improving the system and processes of care; seeks to prevent errors
Relies on inspections to identify errors	Relies on improving processes
Periodically monitors quality	Continuously strives to improve quality
Management/leadership: Top down	Management/leadership: Shared responsibility with involvement of people at the point of care
Maintain a predefined level of quality	Continuously improving quality

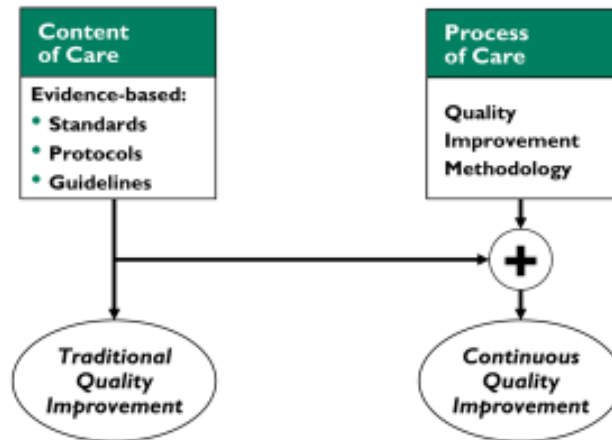
The health sector QI Framework.

Health Sector Quality Improvement Framework

Content of care –
what is done

Process of care –
how it is done

Quality Improvement Integrates Content of Care and the Process of Providing Care



Adapted from Batalden and Stoltz (1993)

II. Steps in QI to implement MIYCAN in routine health services

QI methods/models in Uganda

QI models vary in approach and methods; however, a basic underlying principle is that QI is a continuous activity, not a one-time thing. As you implement changes, there will always be issues to address and challenges to manage; things are never perfect. You can learn from your experiences and then use those lessons to shift strategy and try new interventions, as needed, so you continually move incrementally toward your improvement goals. The MOH recommends initiation of QI interventions in health facilities to start with the “5 S” model as a fundamental background to CQI and then introduce appropriate QI interventions. QI efforts enables staff to be more active and effective, making options on safety, waste reduction and return on Investment

The 5 S Model for work place environment

Objectives of the 5 S Model: 1) Improved productivity, 2) Improved work environment/infrastructure maintenance and 3) Improved health and safety

1	Sort	To remove clutter and unnecessary items for your work process in the workplace
2	Set	To organise everything needed in proper order for smooth operation in the workplace
3	Shine	To keep cleanness in the workplace
4	Standardise	To set up mechanisms to maintain the level of “Sort”, “Set” and “Shine”
5	Sustain	To maintain the “Sort”, “Set” and “Shine” with mechanisms functioned to “Standardise”, as a result of keeping discipline

The target of the 5 S principles (The “8 ZEROS”)

- **Zero changeovers** leading to product/service diversification
- **Zero defects** leading to higher quality
- **Zero waste** leading to lower costs
- **Zero delays** leading to on time delivery
- **Zero injuries** from promotion of safety
- **Zero breakdowns** bringing better maintenance
- **Zero customer complaints** i.e. customer satisfaction
- **Zero red ink** i.e. betterment of organisation’s image

The PDSA Cycle Model

The PDSA cycle is a process used to test proposed solutions (changes).

Objective of the PDSA cycle is to improve health care systems and processes

The PDSA cycle is a bottom-Up approach, involves all staff in assessing problems and suggesting and testing potential solutions.

When a health facility is ready to apply the PDSA cycle to improve performance, the work improvement team (WIT) will need to decide on: **1) goals, 2) strategies, 3) actions**, and then move forward to **4) Implement and 5) monitor improvement progress**.

The team may repeat this cycle several times, implementing one or more interventions on a small scale first, and then expanding to broader actions based on lessons from the earlier cycles.

Each cycle increases the likelihood that staff will embrace the changes, a key requirement for successful QI

The PDSA Cycle model has **four parts**:

Plan: This step involves identifying a goal or purpose, formulating an intervention or theory for change, defining success metrics and putting a plan into action.

Do: This is the step in which the components of the plan are implemented.

Study: This step involves monitoring outcomes to test the validity of the plan for signs of progress and success, or problems and areas for improvement. Short-cycle, small-scale tests, coupled with analysis of test results, are helpful because microsystems or teams can learn from these tests before they implement actions more broadly.

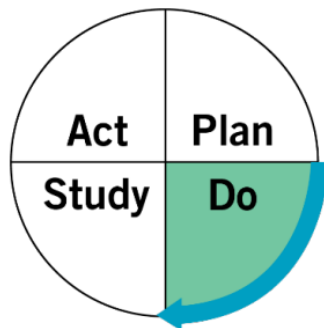
Act: This step closes the cycle, integrating the learning generated by the entire process, which can be used to adjust the goal, change methods, or even reformulate an intervention or improvement initiative altogether.

Instructions



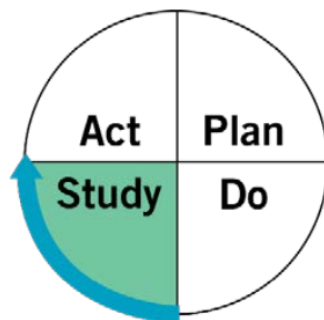
Plan: Plan the test, including a plan for collecting data.

- State the question you want to answer and make a prediction about what you think will happen.
- Develop a plan to test the change. (Who? What? When? Where?)
- Identify what data you will need to collect.



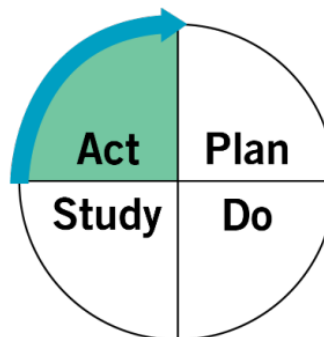
Do: Run the test on a small scale.

- Carry out the test.
- Document problems and unexpected observations.
- Collect and begin to analyze the data.



Study: Analyze the results and compare them to your predictions.

- Complete, as a team, if possible, your analysis of the data.
- Compare the data to your prediction.
- Summarize and reflect on what you learned.



Act: Based on what you learned from the test, make a plan for your next step.

- Adapt (make modifications and run another test), adopt (test the change on a larger scale), or abandon (don't do another test on this change idea).
- Prepare a plan for the next PDSA.

Example: PDSA Worksheet

Objective: Test using Teach-Back (a closed-loop communication model, in which the recipient of information repeats information back to the speaker) with a small group of patients, in hopes of improving patients' understanding of their care plans.



1. Plan: Plan the test, including a plan for collecting data.

Questions and predictions:

- How much more time will it take to use Teach-Back with patients? It will take more time at first (5 to 10 minutes per patient), but we will start to learn better communication skills and get more efficient.
- Will it be worthwhile? The extra time will feel worthwhile (and possibly prevent future rework).
- What will we do if the act of “teaching back” reveals a patient didn’t understand the care plan? If a patient is not able to explain his or her care plan, we will need to explain it again, perhaps in a different way.

Who, what, where, when:

On Monday, each resident will test using Teach-Back with the last patient of the day.

Plan for collecting data:

Each resident will write a brief paragraph about their experience using Teach-Back with the last patient.



2. Do: Run the test on a small scale.

Describe what happened. What data did you collect? What observations did you make?

Three residents attempted Teach-Back at the end of the day on Monday. Two residents did not find anything they needed to ask patients to Teach-Back. Jane found that her patient did not understand the medication schedule for her child. They were able to review it again and, at the end, Jane was confident the mother was going to be able to give the medication as indicated.



3. Study: Analyze the results and compare them to your predictions.

Summarize and reflect on what you learned:

- Prediction: It will take more time at first (5 to 10 minutes per patient), but we will start to learn better communication skills and get more efficient. *Result: Using Teach-Back took about 5 minutes per patient.*
- Prediction: The extra time will feel worthwhile (and possibly prevent future rework). *Result: Jane felt the time she invested in using Teach-Back significantly improved the care experience.*
- Prediction: If a patient is not able to explain his or her care plan, we will need to explain it again, perhaps in a different way. *Result: After a second review of the medication orders, the patient was able to Teach-Back the instructions successfully.*

In addition to the team confirming all three predictions, Jane realized the medication information sheets she had been handing out to parents weren't as clear as she thought. She realized these should be re-written — maybe with the input from some parents.



4. Act: Based on what you learned from the test, make a plan for your next step.

Determine what modifications you should make — adapt, adopt, or abandon:

Jane is planning to use Teach-Back any time she prescribes medication. Although it may take more time, she now understands the importance. The other residents are going to work on using Teach-Back specifically for medications for the next week.

They would like to pull together a team to work on some of the medication information sheets with parent input, but they are first going to gather more information through more interactions in the coming days.

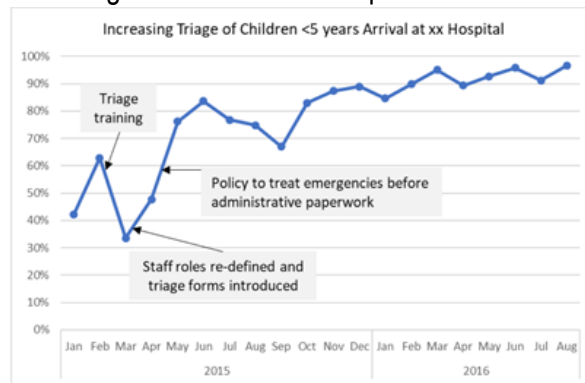
Quality improvement tools

Quality improvement tools are standalone strategies or processes that can help you better understand, analyze, or communicate your QI efforts. **Commonly used QI Tools include:**

Cause-and-Effect (Fishbone) Diagram	FIVE WHY'S
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<p>Systematic way of looking at problems and identifying all possible root causes</p> <ul style="list-style-type: none"> • Diagram looks like a fish with the problem at the 'head' and the causes as 'bones' • Agree on a problem to address • Brainstorm major factors that could affect the problem (e.g., equipment/supplies, people, environment, processes, funding) • Brainstorm possible causes under each major factor 	<p>To get to the root cause of a problem, ask 'why' five times in succession.</p> <p>Why was this person's MUAC not taken? <i>Because the nurse did not know how.</i></p> <p>Why did the nurse not know how? <i>Because she was trained a long time ago and did not remember.</i></p> <p>Why didn't she remember? <i>Because she never used the skill after training and has not received mentorship, refresher, or supervision.</i></p> <p>Why did she not receive mentorship, refresher training, or supervision? <i>Because these actions were not prioritized by her health facility.</i></p> <p>Why were these actions not prioritized? <i>Because nutrition is not appreciated as a serious problem by the director, who is more focused on clinical treatment of infectious disease and doesn't value nutrition's role.</i></p>
Brainstorming	The flow chart
<ul style="list-style-type: none"> ○ Group generates as many ideas as possible in a very short time. ○ Participants express ideas without evaluating them, remain open to new ideas, and do not criticize. <p>Best in an uninhibited environment</p>	<p style="text-align: center;">Process Flowcharting</p> <p style="text-align: center;">Explains of a process map for HIV clinic (client flow)</p>
Run Chart/Time Series Chart	Documentation Journal

- This tool tracks the performance of a process over time.
- Helps detect shifts, trends, or other nonrandom variations in the process.
- Allows user to react quickly to changes and identify underperformance.
- Helps determine if improvement sustained.
- Visual display makes it easier to see and understand trends and patterns.
- Collect data over time, recording when each measurement was taken in chronological order.
- Determine the scales for vertical (outcome/indicator of interest) and horizontal (time) axes.
- Draw and label the axes with scales and unit of measure (e.g., percentage, month).
- Plot the points and connect them with a straight line between each point.



Documentation Journal is a 4-pager format to summarize information on the progress of QI activities (Annex). It systematically reviews improvement as a result of interventions and is divided into 4 parts:

- 1) **A planning worksheet:** outlines problem being addressed in relation to the improvement- What you are trying to accomplish and why
- 2) **Changes worksheet:** summarizes the key changes tested to address the problem implemented with notations of their effectively and dates
- 3) **Graph templates:** Graph documents the result of tested changes in form of a run chart-Graphs of data and results
- 4) **Notes:** Used for writing down comments on performance of indicators and effects (Positive and negative) observed- Annotated run charts

The Quality Improvement Process

Quality improvement (QI) process is grounded in the following basic concepts:

Basic Concepts	Details
Establish a culture of quality in your practice.	<p>The health facility management, processes, and procedures should support and be integrated with your QI efforts.</p> <p>The culture of a practice—attitudes, behaviors, and actions—reflect how passionately the practice team embraces quality.</p> <p>The QI culture Includes establishing dedicated QI teams, holding regular QI meetings, or creating policies around your QI goals.</p>

Determine and prioritize potential areas for improvement.	Identify and understand the ways in which your practice could improve. Examine your patient population (e.g., to identify barriers to care, frequently diagnosed chronic conditions, or groups of high-risk patients) and your practice operations (e.g., to identify management issues such as low morale, long patient wait times, or poor communication). Use established quality measures, such as those from DHIS2
Collect and analyze data.	Data collection and analysis lie at the heart of quality improvement. Data will help you understand how well your systems work, identify potential areas for improvement, set measurable goals, and monitor the effectiveness of change. It's important to collect baseline data before you begin a QI project, commit to regular data collection, carefully analyze your results throughout the project, and make decisions based on your analysis
Communicate your results.	Quality improvement efforts should be transparent to your staff, physicians, and patients. Include the entire practice team and patients when planning and implementing QI projects, and communicate your project needs, priorities, actions, and results to everyone (patients included). When a project is successful, celebrate and acknowledge that success.
Commit to ongoing evaluation.	Quality improvement is an ongoing process. A high-functioning practice will strive to continually improve performance, revisit the effectiveness of interventions, and regularly solicit patient and staff feedback
Spread your successes.	Share lessons learned with others to support wide-scale, rapid improvement that benefits all patients and the health care industry.

System Support for Quality Improvement

In order to implement QI in the health facilities, the following system support should be in place:

FACILITY QI TEAMS WITH SKILLS	<ul style="list-style-type: none"> • Aim statement, problem solving in teams, testing change ideas • System to ensure skills are built
QI COACHING	<ul style="list-style-type: none"> • Coaches with experience & time, permission and resources to visit facilities • A system to assign coaches to facilities, ensure coaching is happening to learn if care is improving
SHARING AND LEARNING	<ul style="list-style-type: none"> • Opportunities for staff from different facilities to learn from and motivate each other

MEASUREMENT SYSTEM	<ul style="list-style-type: none"> To learn if processes to support QI are functional To learn whether care is improving
QI PROGRAM MANAGEMENT	<ul style="list-style-type: none"> Management structures have specific roles in managing QI program activities (e.g. training, forming teams, coaching, peer to peer learning, fixing problems) Adaptations in finance, HR, data systems to support QI
LEADERSHIP	<ul style="list-style-type: none"> Lead culture change and support building of skills, structures and systems Focus on systems rather than individuals Focus on problem solving more than measurement Focus on team work rather than hierarchies

III. Developing MIYCAN QI Action Plans

Group Exercise: Developing MIYCAN QI Action Plans (20 min)

What health workers can accomplish (*Use the action plan template in the annex*)

- Form small groups from your own facility or similar work areas (e.g. Pediatrics, ANC, PNC, HIV/TB, OPD, MCH).
- Each group members should think about what they learned in this training and write an action plan that explains how MIYCAN services can be integrated or improved in their workplaces. They can include the support they will need to help them implement what they have learned.
- The groups should reflect on two steps, **nutrition assessment** and **classification**, and think about how and where they can introduce them into the client flow, who will do the assessment, when will it be done, and how it will be recorded. (See guidance questions below.)
- One or two groups should present their action plans. Lead a discussion about their plans.
- All action plans will be collected, and each facility represented will share share their action plan with their facility's managers.

COMMONLY ASKED QUESTIONS

Q#	Questions	Answers
1	<i>Are quality improvement methods used only to improve Quality of MIYCAN care?</i>	Quality improvement methods can be used to improve any system, including any area of care within the healthcare delivery system. The same principles apply everywhere
2	<i>Will quality improvement projects add work to already overburdening data collection in our facility?</i>	No additional burden would be added. Data-based decision-making is at the core of quality improvement methodology. All decisions must be based on evidence and any data collection in the system should

		generate information for taking actions. It is advisable to start with existing data, but if nothing exists, data collection should be started soon as possible as data are the backbone for any improvement initiative
3	<i>Why do we need to use quality improvement methods when our clinical interventions are already based on scientific evidence?</i>	While evidence-based medicine/public health tells us what interventions will work, quality improvement methods will tell us how to adapt the process of care to our own context to make the evidence-based guidelines work
4	<i>We have many problem areas in our facility. Should we start multiple projects for each one of those?</i>	It is wise to start with only one or two projects initially. Start with a simple, feasible improvement activity with rapid turnaround time and take up more projects as the team builds their understanding of quality improvement methods and gains confidence by applying them in practice
5	<i>Our staff members just do not want to work. How will quality improvement approaches help with that?</i>	Quality improvement methods work by decreasing individual resistance to change, encouraging data-based decision-making and improving communication among staff. All these, put together, increase motivation levels among staff. In any organization it is hard to get everyone to join improvement initiatives, but once you start others will get convinced and join the movement Once other people see how things have become better (based on the data) using quality improvement approaches, they will get interested and curious to learn and adopt these methods too
6	<i>Will quality improvement help us in getting accreditation? How is quality improvement different from accreditation?</i>	Quality improvement will not directly help in accreditation. Accreditation is a voluntary, one-time compliance to prescribed standards (quality assurance) while quality improvement aims at ongoing improvement in specific service areas. However, continuously doing quality improvement at a facility can make it easier for the facility to meet and perhaps in some areas even surpass the accreditation requirements
7	<i>Do we need to have a designated person for doing QI work in our facility?</i>	Not necessarily. It is preferable to create an embedded culture of quality improvement among all staff compared with having a designated person for quality. But often you need a local champion who can quick start the improvement projects and provide some extra support to the frontline staff who are doing the quality improvement work
8	<i>Do we need continuous trainings on quality improvement for facility staff?</i>	Initial training and handholding support is required for facility staff; once they learn the basics of QI and have executed one or two projects on their own, no more formal trainings are required. There are several online resources from which anyone interested in quality improvement can continue to build their knowledge base. The main learning will come from actually doing projects on the ground
9	<i>Do improvement initiatives create</i>	does not require much extra time; you can manage it during your

	<i>additional work for facility staff?</i>	routine work. QI helps to improve your routine work outcomes and in some cases you may in fact be able to reduce your workload. By applying quality improvement, you can bring efficiency into the system by reducing wastage of time and resources
10	<i>I am working hard and trying my best. Why should I use QI?</i>	Quality improvement is a management approach that helps to solve system problems together in a team. Even if you are working at your best, the system where you work may not be working to its maximum potential. This is because very few people work to their best in a given system. QI will help to involve more people within the system to work together and will improve the performance of the system overall, which in turn will give benefits to all stakeholders. In other words, quality improvement is a broader approach to improve the performance of the system as a whole and not just an individual's performance
11	<i>Does QI require extra resources?</i>	To the best of our ability and creativity, improvement should be done with the help of existing resources without any significant additional support from outside. Quality improvement helps us to realize that by reorganizing day-to-day work, we can get better results within the same resources. However, commitment to learning and practicing quality improvement is a must

Session 5.2: Health Facility-Community Linkages for MIYCAN Care and Support

Community-based services are often available for livelihood, agriculture, saving schemes, nutrition programs etc. However, Health workers, groups and organizations often do not know about each other or are unaware of how they can work together. Without this collaboration, health workers are handicapped in their ability to refer clients and their families to the community-based organizations that can assist them.

Learning objectives

By the end of the session participants should be able to:

- Explain the importance of linking health facilities to communities for nutrition care and support
- Describe the process of creating/ improving Facility–Community Linkages

I. Importance of Linking the Health Facility to the Community

The Ministry of Health has structures at all levels including the community. This is to ensure that services reach the primary receipts who are mostly in the community. Strengthening the facility community linkages enables maximization of resources to benefit the households and community.

Facility–community linkages connect clients to other support services in the community such as supplementary feeding programmes (SFPs), mother support groups, WASH programmes, growth monitoring and promotion (GMP), National Agricultural Advisory Services (NAADS), livelihood programmes, and family planning. These linkages create a continuum of care that ensures that clients receive home visits, follow-up, and support. This in turn leads to better nutrition care through:

- Improved adherence to Nutrition therapy
- Enhance community learning from health workers and vice versa.
- Help improve Health facility access to and communication with community leaders
- Links clients to available livelihood and nutrition programs in the community

II. Process of Creating/improving Facility–Community Linkages

Despite the existence of the Ministry of Health structures that includes the community (VHTs). Linkage between the health facilities and community structures still weak. The MIYCAN strategy aims to work closely with the Community resource persons to strengthen Community facility linkage and improve nutrition services.

Community Structures for Nutrition Care and Support

Community Resources Persons	Roles and Responsibilities
Community Volunteers	<p>During planned community outreach activities:</p> <ul style="list-style-type: none"> ● Mobilise communities to respond to key health and nutrition issues ● Identify severely and moderately malnourished individuals based on MUAC, bilateral pitting oedema, weight loss, ill health, loss of appetite, and growth faltering (using the child health card) Refer malnourished individuals to the health facility for further assessment and treatment ● Refer non-breastfed infants under 6 months, who are all at high risk, to the health facility for assessment ● Follow up with clients who have received treatment to ensure that they are taking the prescribed Nutrition supplements/therapy and provide ongoing counselling and support on nutrition habits Conduct home visits for defaulters or those who need follow-up ● Provide counselling for mothers or caretakers of children under 2 years on optimal infant and young child feeding practices ● Provide Pregnant on regular attendance of ANC, Pregnant and breastfeeding mothers on good nutrition and importance of iron/folate supplementation, IPT, sleeping under ITN. ● Link individuals identified for sustainable livelihood support to partner organizations ● Record the number of referrals for monitoring, evaluation, and follow-up purposes
Health Facility staff should:	<ul style="list-style-type: none"> ● Warmly receive clients referred by community volunteers and refer them to relevant departments for further assessment ● Counsel and provide treatment for enrolled patients (as needed) and refer them back to the community for continued support from the community volunteers

	<ul style="list-style-type: none"> ● Screen, identify, and refer individuals for malnutrition care through other routine services at the facility, including antenatal care and the young child clinic ● Meet with community coordinators monthly to share progress, determine what areas need improvement, and build on existing opportunities
<p>Community Health extension workers/ volunteers' roles include: Community development officers:</p> <ul style="list-style-type: none"> ✓ Agriculture Extension workers ✓ Community village health teams ✓ Community-level support people ✓ Expert clients ✓ Members of mother support groups ✓ Other community resource persons ✓ Health center II ✓ Village health team 	<ul style="list-style-type: none"> ● Helping to prevent malnutrition and promote good nutrition. Volunteers may: Monitor and promote growth ● Promote and support exclusive breastfeeding for the first 6 months and continued breastfeeding thereafter ● Promote complementary feeding using FATVAH principles (frequency, amount, thickness/ consistency, variety, active feeding, and hygiene) ● Promote maternal nutrition ● Counsel about and encourage vitamin A supplementation ● Promote use of iodised salt in the household ● Promote WASH (water, sanitation, and hygiene) ● Refer for immunization ● Advocate for demonstration gardens ● Conduct food demonstrations ● Identifying malnourished or high-risk clients and referring them to the health facility. Volunteers may: <ul style="list-style-type: none"> ● Assess nutritional status using MUAC and signs of bilateral pitting oedema, weight loss, ill health, and loss of appetite ● Refer high-risk infants to a health facility for assessment because they cannot be assessed using MUAC; all non-breastfeeding infants under 6 months are at high risk for malnutrition ● Following up with malnourished clients and linking them to support services, which includes providing counselling and health and nutrition education
<p>Political/faith based/health volunteers:</p> <ul style="list-style-type: none"> ✓ Parish development committee ✓ Local council 2 ✓ Local council 1 ✓ Village farmers development cell ✓ Farmers groups ✓ Community-based organizations 	<ul style="list-style-type: none"> ● Community mobilization ● Resource mobilization ● Advocacy for better MIYCAN ● Social and behavioral change communication

Key Points



- Facility–community linkages connect clients to other support services in the community to create a continuum of care that leads to better nutrition care and support.
- Community volunteers and resource people can promote good nutrition and mobilize the community; identify, refer, and follow up on malnourished or at-risk individuals; and ensure that those at risk of malnourishment receive complementary social support services.
- Facilities can provide assessment, treatment, counselling, and referral within the health facility and refer to the community for follow-up and complementary social services.

Session 5.3: Management of Commodities and Supplies for MIYCAN

Systems issues identified during a system performance assessment in health facilities included inadequate store lay out and commodity storage, stock out, expired drugs ordering and documentation inaccuracies, among others. It is from this background that this training curriculum has included a session on Supply Chain management to build capacity in Supply Chain and to encourage facilities. This session will focus mainly on Store operations and procedures with a perspective of MIYCAN commodities at all the health facilities.

Learning objectives

By the end of the session participants should be able to:

- Discuss Essential Nutrition commodities and supplies for MIYCAN
- Discuss commodity handling procedures and general rules for receiving, storing and dispatching commodities at the health facility
- Discuss Stock Management of nutrition commodities

I. Essential Nutrition commodities and supplies for MIYCAN

In Uganda, the Nutrition commodities and supplies used in addressing malnutrition included in the Essential medicinal list include the following;

Micro-nutrients and antihelminths	MAM and SAM therapeutic foods	Nutrition therapy for Intensive Care		Anthropometric Equipment
		Enteral feeds	Parental feeds	
Vitamin A Capsules (100,000/200,000 IU)	Corn Soy Blend			MUAC Tapes
Iron tablets (30mg, 60 mg)	Corn Soy Blend plus		Amino acid 10%	Weighing scales

Iron, Folic acid (400 µg/0.4 mg)	Ready to Use Supplementary Foods		Fat Emulsion injection -20%	Height/Length boards
Iron/ Folic Acid combination (FeFo)	Ready to Use Therapeutic Foods,		Starch Emulsion – 80% oil in water	Data Collection tools
Zinc tablets (5mg, 10 mg)	Formula 75			HMIS -Integrated Nutrition register
Combined micronutrients (MVP)	Formula 100			Integrated Nutrition Ration Card
Albendazole (200/400 mg), Mebendazole (100mg)	ReSoMal			Monthly and quarterly report
	Combined Mineral Vitamins (CMV)			Registers

II. Commodity handling procedures and general rules for receiving and dispatching commodities at health facilities

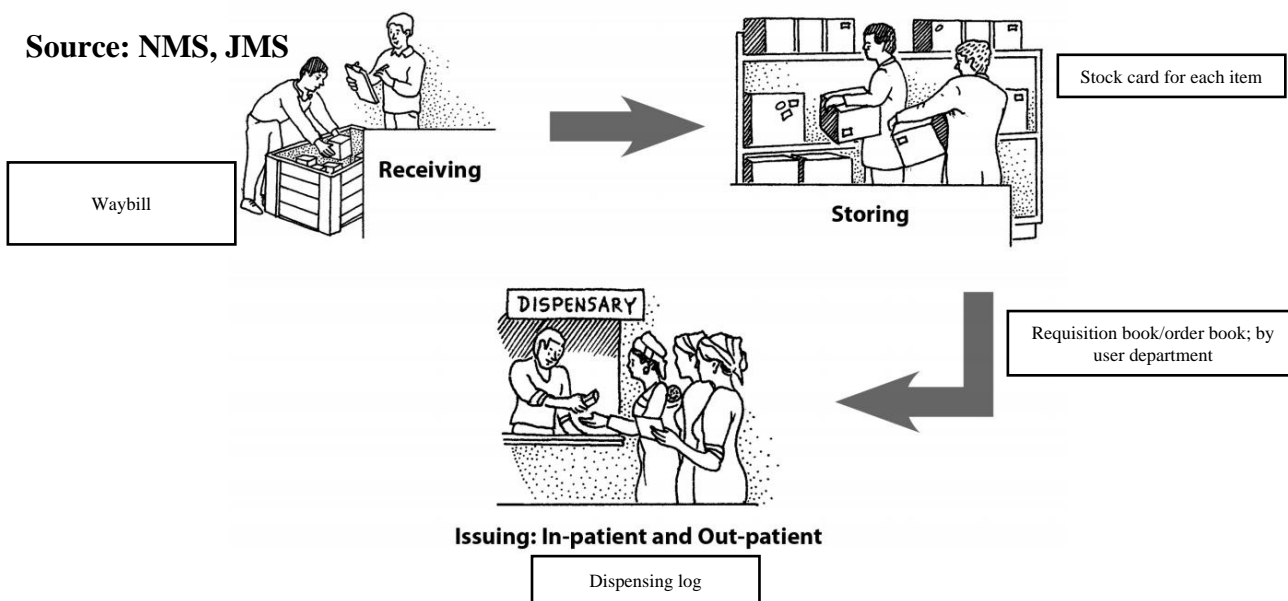
The VEN Concept

The Vital, Essential, Necessary (VEN) classification aims to prioritize items by the magnitude of their clinical relevance to guide procurement by warehouses to improve medicine and supply selection, planning and ordering by health facilities. The aim is to ensure that the most vital medicines are given first priority when procuring so that they are always available at all times. The VEN principle applies to all health commodities including sundries, laboratory items and consumables.

Vital	Vital life-saving drug s, their unavailability would cause serious harm and side effects, they must always be available
Essential	Essential drugs are effective against less severe but significant forms of illness but are not vital to providing basic health care. Nutrition commodities are classified as Essential in the UEMHSL
Necessary	Non-essential drugs used for minor or self-limited illnesses, are of questionable efficacy or have a comparatively high cost for the marginal therapeutic advantage

SOPs for the organization of Nutrition commodities and supplies in the health facility

Flow of commodities at the health facility



EMHS have a specific period of time during which they should be used commonly known as the shelf life. The self-life is shown by the date of manufacture and the date of expiry on the item's label. The self-life indicates time the time the item can be used safely if it has been stored as recommended by the manufacturer. Poor storage condition can result in deterioration or development of poisonous degradation products that can be hazardous to the patient.

Essential Medicines and supplies have a specific period for time during which they should be used (shelf life). This is indicated by the date of manufacture and date of expiry on the item's label. The shelf life is the time the item can be used safely if stored under the manufacturer's recommendation (storage condition). Poor storage can result in deterioration or development of poisonous degradation products that can be harmful to the patient.

Health workers in charge of medicine' supplies must monitor the self-life of medical supplies closely and strictly adhere to the storage conditions as recommended by the manufacturer. The two most important factors that affect quality of medicines and supplies during transit includes: 1) Temperature and 2) Humidity. Stores and supplies must be organized in such a way that quality is preserved and must be organized to preserve quality and avoid deterioration before use.

Organizing the Store at the Health Facility ('stock control at only one place')

Supplies should always be kept in a secure, designated storage space because medical supplies are expensive and very marketable. The items need proper care or may deteriorate. Resulting in loss of potency or develop positions degradation products that might harm the patients.

Health facilities need a store that is in good physical condition, can be secured, and has shelving {proper management of the store and stock records require that one should provide supplies to all departments in the health facilities. Some facilities release supplies to an intermediate store, which then supplies other units Hospitals store bulk medicines in the pharmacy, who then issues them again in bulk to wards, while keeping second set of stock cards

This duplication is unnecessary and does not add value to the storage process. ONLY the main store should keep stock cards. The main departments (outpatients/inpatients could all get their supplies from the main store and then dispense to their patients

Important points to remember

- Designate a secure room or cupboard at your health facility to be the store
- Assure that the windows should be burglar proof
- Separate the store from the dispensing area, do not dispense medicines to patients directly from the store
- Make a schedule to issue supplies from the store to user departments once or twice a week. This allows the storekeeper time to update records and for the user departments to plan appropriately
- Always lock the treatment room unless the medicines are in a lockable cupboard
- Do not leave patients alone in the treatment room
- Prevent deterioration of your medicines and health supplies. Excessive heat, light, or humidity may cause you medicines and health supplies to spoil. Some medicines deteriorate very quickly when exposed to light. Tablets and capsules can easily absorb water from the air, making them sticky and mouldy and causing them to deteriorate. Always put back the lid of the containers, even if you are going to use the same tin later in the day.
- Indicate the date when bottles have been opened (write the date on the label or a sticker when a 5 litre cough syrup was opened. Oral suspense can only be used for 14 days once opened

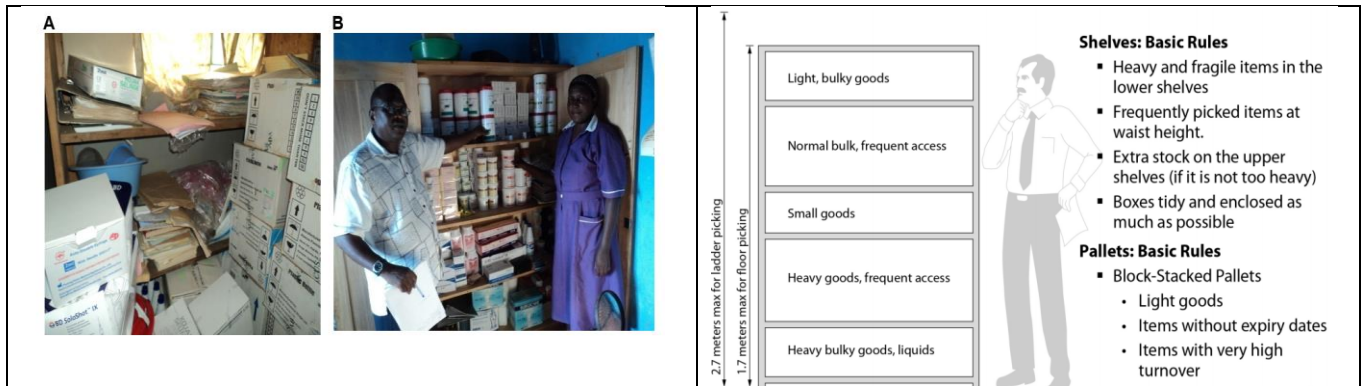
How to store and preserve the quality of medicine and supplies in the health facility

Control temperature	<ul style="list-style-type: none"> • The store temperature should not exceed 27°C. • Make sure the store has a ceiling; ask for assistance from your DHP to obtain one • Install a ceiling fan or air vents in the store • Open windows to allow air to move freely while staff is working in the store • Use refrigerator (Fridge) to keep medicines and supplies that require a storage temperature of 2 - 8°C. Do not allow medicines to freeze because this can be harmful. Never store food or water in the fridge with medicines because this will introduce warm air due to frequent opening • Store medicines on the fridge shelf not the in the fridge shutter (door) because temperature might be difficult to maintain • Make sure the fridge is lockable, especially if it is outside the store
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Avoid Direct sunlight	<ul style="list-style-type: none"> • Store health commodities in dry, well-lit-well ventilated storeroom, away from direct sunlight: • Direct sunlight raises the temperature of the room and can reduce product self- life. If the light enters the store, make sure that it is indirect, paint the storeroom windows white or hung curtains or blinds to block off direct light • Some supplies are very sensitive to light and should be protected from direct sunlight and fluorescent light by keeping them in the cupboard or closed boxes. These include gloves, and certain medicines
Protect the storeroom from water penetration	<ul style="list-style-type: none"> • Water can destroy EMHS and their packaging. • Make sure there are drainage channels around the outside of the store and gutters with pipes running down from the roof • Ventilating the store with windows, secure all ventilations and drainage areas with grilles or bars to prevent theft • Repair all leaks as soon as possible to reduce damage • Stack supplies off the floor on pallets at least 20 - cm high and 30 cm away from walls to prevent moisture that seep in through walls and floors from contacting the products. • Leave sachets of desiccant (non-edible drying crystals) in the containers of tablets and capsules after the containers have been opened, the desiccant keeps the inside of the container free of moist. • Do not use products if the inner package is damaged because the medicine might have been exposed to humidity, deteriorated.
Clean and disinfect the storeroom regularly	<ul style="list-style-type: none"> • Clean and disinfect the storeroom regularly to prevent contamination of the EMHS and take precautions to prevent insects and pests from entering the store. Pests are less attracted to the storeroom if it is regularly cleaned and disinfected: • Set up regular schedule for general cleaning and disinfection of the storeroom. Sweep and dust the shelves and then the floors, then wash with hibiscrub, chlorhexidine or liquid soap.
Keep food and drink out of the storeroom	<ul style="list-style-type: none"> • Do not keep broken containers in the store because common pests, such as rodents, ants and wasps are attracted to spilled items, like sugary liquids • Keep all bottles and containers closed when not in immediate use • Clean spills properly with detergent without delay • Use insecticides and rat poisons only with a lot of precaution. Mechanical devices such as insectcuters and rat traps are preferred, so that dead vermin can be removed • Remove unwanted items from the store regularly to make more space available fo storage, remove empty cardboard boxes • Remove or put away old files and office supplies because they reduce space available for medical supplies • Keep the area outside the facility/store clean
Observe Fire safety	<ul style="list-style-type: none"> • Keep fire safety equipment available, accessible, and functional and train employees how to use it: • Stop a fire before it spreads to save valuable products and the facility and to reduce the chance of injuries • Have the right equipment available; water for putting off paper fires but ineffective on electrical and chemical fires

	<ul style="list-style-type: none"> • Place fire extinguishers at suitable positions in the storeroom • Keep sand or soil in a bucket nearby, if fire extinguisher is not available into functional • Train the staff in the use of the available fire safety equipment regardless of the method used • Store flammable lab supplies in their original containers in the coolest possible location and away from sunlight
Limit Access to Storage area	<p>The store area should only be accessed by authorized personnel. The room must be locked when no activity is taking place.</p> <ul style="list-style-type: none"> • Conduct physical counts of inventories regularly to verify inventory records • Conduct physical counts of inventories regularly to verify inventory records • Store health commodities away from insecticides. Chemicals, inflammable products, and hazardous materials. Exposure to insecticides contaminate medical products and make them unusable
Handle expired and damaged items carefully	<ul style="list-style-type: none"> • Care must be taken when handling unusable items: • Separate damaged or expired health commodities from usable commodities, remove them from inventory immediately. And dispose of them according to established procedures • DO NOT use expired medicines • Designate a separate part of the storeroom for damaged and expired goods. This area should clearly be labelled as the storage area for expired area for expired items, and where possible, should be physically separated from other commodities. • Always inform the district medicines management supervisor and relevant authorities about any expired products and they shall advice you on necessary disposal steps
Arrangement of storage	<ul style="list-style-type: none"> • Try to store all medical supplies in one storeroom. If this is possible, then keep the same types of medicines or supplies together so that you know how much stock is on hand. Do not keep a bit everywhere in each storeroom. This practice can lead to assumption that stock is in another room when nothing may be left, or the stock has expired. • Organise medicines and supplies so that finding may be easy • Shelve similar types of items together, items with earlier expiry ate should be placed Infront of items with later expiry dates, according to FEFO (first expiry, first out) procedure • Get rid of excess stock by sending it to your district hospital or higher-level health facility. Whatever you cannot use before the expiry dates should not be in your facility. If the drug expires despite all efforts, clearly mark as 'expired' and return them to your district or store separately. (Follow MOG guidelines on redistribution and what to do with expired drugs)

Keep the store tidy	Follow the Rules for Pallets and Shelves
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KEY POINTS

- Store medicines in a clean, safe, well-maintained store, protected from heat, light, humidity, and pests
- Stick to FEFO for those items with an expiry date and FIFO for items with no expiry date
- Remove expired stock to an designated area clearly marked for expired medicines and health supplies
- Redistribute excessive stock to other facilities
- Label the shelves with generic names and place each item at its correct label

III. Stock Management System

Stock Management enables you to track an item's consumption history to quantify future needs. It is important to keep correct records of an item to determine: 1) Average monthly consumption (AMC) , 2) Minimum stock, 3) Maximum stock, 5) What to order and 5) and When to order

Benefits of keeping good records

Keeping good records saves time as:

- The expected quantity in stock is known before counting
- The store can easily be handed over to colleague when not at work, others can understand the quantities of medicines and supplies available at the health facilities by looking at the stock cards
- Patterns of use of item at your health facility can be determined and any unusual changes detected
- When to order which medicine can be established

Goods records protects:	The staff against accusations of theft or misuse of medicines and health supplies Against cases of disputed delivery because the arrival of medicines and health supplies is always tracked
Good records prevent:	Under stocking and stock-outs because stock balances are always known and items can be ordered in time to ensure availability Overstocking and wastage because large quantities of stock can be redistributed before it expires

Good records allow:	<p>Estimation of the cost of medical supplies for the year so a budget can be prepared on time</p> <p>When effective stock control system is maintained in all health facilities, the NMS can more accurately quantify how much and when to order, which prevents overstocking and running out of stock</p>
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KEY POINTS

- ➔ An effective EMHS stock management system assures that the optimum amount of medicines and supplies are available at health facilities at all time
- ➔ Properly maintained records provide quick knowledge about available stock, estimation of needs at both facility and national levels and save you time

Supplies for SAM therapy by Health facility levels

Product	Recommendation per treatment per client			
	Inpatient treatment	Level of care	Outpatient treatment	Level of care
Formula 75 milk, Can 400g/CAR-24	3 cans	Hospitals and Health Centre IV		
Formula 100 milk, Can 400g/CAR-24	2 cans			
ReSoMal, 42 g sachet/Litre/CAR 100	0.5 sachet			
RUTF 92g/sachet/CAR 150			135 sachets	Hospital, HC IV and HC III

Guidance for the quantification of supplies:

- The projections for nutrition supplies are done regularly to ensure effective programming and to minimize stockouts
- Calculations are based on caseloads and target populations and should include buffer stock (10% of stock estimate)
- Consumptions estimate of the nutrition supplies are derived from the total number of newly admitted cases multiplied by the recommended quantities of the therapeutic supplied used for treating a client

Method:

1. Establish the total number of outpatient therapeutic care (OTC) and inpatient Therapeutic Care (ITC) attendance in a given period (say 12 months, if planning for annual procurement)

2. Use the standard treatment guidelines to determine the appropriate generic name of dosage form and strength of each nutrition medicine drug to be used in the treatment of an OTC and ITC case
3. Calculate the quantity required to treat each identified case by the formulae below:

$$= \text{Basic units per dose or administration} * \text{Number of doses per day} * \text{length of treatment in days}$$

Quantification for health facilities

The table below provides 2019 SAM admission data for ITC and OTC in Mungula HC IV, Adjumani district. Estimate the nutrition supplies need for the months (quarter) January to March, 2002

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
# of children aged 6 -59 months affected by SAM who are admitted into OTC	2	0	0	2	0	0	7	2	1	1	1	0	16
# of children aged 6 -59 months affected by SAM admitted into ITC	13	13	19	35	39	42	65	45	26	25	24	47	393

NB: The National Medical stores (NMS) guidelines recommend that a facility holds a maximum of three months of stock. Two months' consumption and a one-month buffer to cater for emergencies (sudden spikes in SAM cases due to drought, disease outbreak etc.)

How much to order

Using the stock book, you can determine the quantity to order. Subtract the figure recorded under balance at hand from the figure recorded under maximum stock quantities. This gives you the amount to order:

$$\text{Quantity to order} = \text{Maximum stock quantities} - \text{Balance at hand}$$

Enter the figure in the quantity to order column in the stock book. Go through all items in the stock book in a similar manner and decide whether to order. If an order is to be made, calculate the quantity to order and enter that quantity in the stock book,

Taking the example from the stock book of August:

$$\begin{aligned} \text{Balance at hand} &= 27; \text{Maximum stock quantities} = 100; \text{quantity to order: } 100 - 27 = 73 + 10\% \text{ of } 7.3 \\ &= 73 + 10\% - 73 + 7.3 = 80.3 \end{aligned}$$

You should respect the supplier's minimum units of issue when making an order, for example, if the minimum unit of issue is 50, the quantity ordered should be in multiples of 50 (50, 100, 150, etc.) This issue is minimized by introducing pack size instead of single units such as tablets

When to order

Order for nutrition supplies will be made together with essential medicines. Orders should be submitted according to the supplier's order and delivery schedules, except for emergencies. For Government facilities, lower levels (HC II and HC III), nutrition supplies will be delivered together with the kits up to health facility for those testing the 'push' modality and for HC IV and above and selected HC II and III who will be testing the '**PULL**' modality make their orders according to needs and resources available.

Tools for Ordering, Receiving, and Distributing MIYCAN commodities and Supplies

The tools used to keep records are 1) Stock cards and 2) Stock books

The Stock Card

The stock card is a record of all transactions related to items received or issued out of the store.

Each item should have a stock card:

- The stock card is used to account for nutrition items and supplies.
- It shows how much stock is on hand and helps to monitor stock to prevent losses or thefts and to indicate when and how much to order.
- The stock card shows how much of each item moves in and out of the facility store over a certain period and which department used it.
- Each item should have its own stock card. If similar items have different sizes, strengths, packages, or formulations, then they should have different stock cards.
- Stock cards can be obtained from private pharmacies, donations, supplies from implementing partners, or stock received from another health facility.

How to fill the stock card

1	When starting a new stock card, completed the header information from NMS/JMS delivery note, catalogue or pricelist. Health unit name: Health unit code:	11	To or from: write the location the item is coming from or being sent to
2	Item description: The name of the item in generic names (e.g, Ferrous sulphate (not Iron), the dosageform/formulation (tablet/capsule/syrup), the strength (60 mg tab)	12	Voucher number: any transaction (except a loss or adjustment) should always be accompanied by a voucher. Record the voucher and keep in a separate folder
3	Pack size: Fill in the pack size of the item (e.g. tin of 1000 tablets of ferrous sulphate)	13	Quantity in: record the number of packs of the item received (e.g., 5 tins/box of ferrous sulphate tablets)

4	Code no: The official numbers of the item as given by the medicals store (NMS/JMS)	14	Quantity out: Record in pack units the amount of an item being given out
5	Special storage condition: Indicate if the item require special storage condition (e.g. refrigeration)	15	Losses/adjustment: refers to any issue out of the store for reasons other than consumption within the facility (caused by removal of expired items, damaged items, theft, or adjustments during stock taking. NB: redistributions to other facilities are recorded as loss (- before the figure)/gains in stock quantities by means other than normal procurement channels, e.g borrowing from other facilities should be recorded as adjustment (+ before the figure)
6	Unit of issue: The smallest unit of item issued (e.g 1000 tablets for Ferrous sulphate)	16	Balance on hand: the balance on hand after adding quantities received or subtracting quantities issued or making adjustment for losses from previous stock balance
7	AMC: the quantity of items consumed per months (average monthly consumption)-calculated periodically cause of variation	17	Expiry date: The expiry date for each new item received should be written in the given space
8	Maximum stock level (MSL): the largest stock of item that should be held at the facility expressed in packs units (e.g, number of pack units) a) Maximum stock level for EMHS has been set as quantity used in five months, hence multiply AMC by five to get Maximum stock level for EMHS (MSL = AMC X 5 b) Maximum stock for ARV has been set as quantity used in four months (Max SL=AMC X 4 c) Maximum stock for Lab supplies has been set as quantity used in 3 months (Max SL= AMC X3	18	Batch number: record the batch or lot number indicated on the manufacturer's packaging every new item received.
9	Minimum stock level: the lowest amount of stock that should be held by the facility expressed in quantity (number of pack units). The minimum stock is always two months, Everytime the AMC is calculated, multiply it by two to get minimum stock level Minimum stock level = AMC X 2	19	Remarks: Record any necessary comments, notes, explanation
10	Date: record the date the transaction (receipt or issue) is made. Each transaction should be recorded on a separate row	20	Initials: the person updating the stock card should fill his/her initials
Keep stock cards for at least six years in a file or a clearly labeled envelope, item by item, for auditing purposes. For each item number them consecutively 1,2,3 etc.			

HMIS FORM 015 STOCK CARD

Health unit name: _____

Health unit code: _____

Item description (name, formulation, strength):

Pack size:

Code no:

Special storage conditions:

Unit of issue:

AMC:

Maximum stock level:

Minimum stock level:

Date	To or from	Voucher number	Quantity in	Quantity out	Losses/ adjustments	Balance on hand	Expiry date	Batch no.	Remarks	Initials

Physical count

On monthly basis, at about the same time, before writing orders to NMS and JMS, it is important to conduct physical count (count the amount of actual stock on the shelf and record the balance on the stock card) Draw a red line under the last balance entered on the stock card and mark the entry "Physical count" (or PC) to indicate the physical count has been done.

The purpose of the physical count is to:

- Verify the stock level of medicines and health supplies
- Verify the accuracy of stock-keeping records
- Detect losses of medicines and health supplies in the store
- Ensure all stock in the store is usable (not damaged/expired)
- Determine whether the stock will be used up before the expiry date or if you need to take action to redistribute.
- Write the discrepancy and sign your initials

(if possible, the storekeeper and another member from the facility management to conduct the PC to ensure accountability and ease work- one records the other counts)

In case of discrepancy between the PC and balance stated on the stock card, record the actual number (PC) and then investigate the discrepancy:

- Check entries and arithmetic's form the time of the last PC
- Check with other staff members and ensure all entries have been made
- Check quantities dispenses in the dispensing log against the entries on the stock card
- Notify your supervisors.
- On some occasions, the police may be involved

KEY POINTS

- ➔ The stock card is a record of all transactions related to items received or issued out of the store. Each item should have a stock card
- ➔ Always record quantities in the stock cards using packs and not using tables or capsules. Define the Unit as packs or tin of i.e. 1000
- ➔ Recording in the stock card should be done as soon as an item is taken out or brought into the store – at every transaction. The stock should be up to date at all times
- ➔ A physical count of all items in the store should be done on a monthly basis and the stock cards updated when the physical counts do not match stock card figures

CASE STUDY

- Let participants work individually and present and others compare and discuss their findings.

Study the passage below and then answer the questions.

- A. 100 cartons of RUTF were positioned at Kayunga Hospital in July 2009, while 90 were positioned at Villa Maria hospital in the same month.
- B. Kayunga hospital has registered 30 pregnant/lactating mothers of which 5 are severely malnourished (SAM) while 25 are moderately malnourished (MAM). The hospital registered 50 children (0-5 yrs), 15 which were severely malnourished and 35 were MAM. For children between 6 yrs - 17 years; 4 were SAM while 10 were MAM. For adults who were 18 years and above, 10 were SAM while 45 were MAM. This was during the month of August 2009.
- C. Villa Maria hospital has numbers that double that of Kayunga Hospital in both the ration size and nutritional status, in the same month
- D. In September 2009, 5 people under the category of SAM [18 and above] were admitted in Villa Maria hospital, while 15 pregnant and lactating clients completed treatment and were discharged.
- E. During the admission period, 35 sachets were damaged as a result of the appetite test in Kayunga hospital, while 12 sachets were destroyed by rodents at Villa Maria hospital.

QUESTIONS

1. How much RUTF was required to be dispensed in the two hospitals during the month of August 2009? Using the monthly distribution report, portray quantities per hospital. Using the monthly physical inventory work sheet, determine the stock balances in both facilities.
2. How many beneficiaries were eligible for RUTF in September, and what quantities of RUTF were dispensed to them?
3. Complete a loss and damage report to highlight details indicated in part E.
4. How much RUTF will be required for both health facilities for a period of 3 months and buffer stock of one month?
5. A sachet weighs 9gms, a carton of RUTF weighs 13.8 Kgs, and a carton of RUTF has 150 sachets. What is the total tonnage of RUTF that will be required to be positioned at both facilities?

Session 5.4: Monitoring, Reporting and Use of MIYCAN data

There is not much point to collecting monitoring data unless you know how and by whom that data will be used. The challenge health workers face is to turn raw data into useful information and then report results to the different program audiences (e.g., donors, MOH, national programs, district) in a way that will be useful both to them and health facility. This module has been included to build capacity of health workers improve quality of nutrition data capture, reporting for HMIS.

Learning objectives

By the end of the session participants should be able to:

- Explain the importance of monitoring reporting and use of MIYCAN data
- Discuss data management for MIYCAN (indicators and tools)

I. Importance of monitoring, reporting and use of MIYCAN

Definition of Monitoring, And Reporting

Monitoring is the systematic collection of information on key aspects of the project while it is being implemented. Monitoring involves continuous and systematic checking or observing of the programme/project activities to ensure that they are being implemented as planned.

Reporting is the formal presentation of monitoring and evaluation data—usually a written account of what a programme has done, achieved, or experienced—for management, auditing, or tracking purposes. Reporting is done routinely.

Importance of Monitoring and Reporting

Projects/programmes have to contend with human fallibility and mistakes in execution, so we must measure

performance to make improvements and remain on course. To do this, we must collect and use data to demonstrate how well activities were performed and whether outcomes and impact were achieved. The nutrition activities implemented at health facilities are monitored based on set indicators.

Benefits of Monitoring, and Reporting

The process of monitoring, and reporting helps:

- Prove that the programme is achieving or has achieved intended results
- Show accountability for resources expended
- Yield data to use in response to any critics of the programme
- Justify replication, scale-up, or continuation of the programme

Components of data quality

Good quality data is ACCURATE

Available - at all levels of the Organisational Hierarchy

Comprehensive - collected from all the possible data sources

Consistent - data is usually steady within a range unless there is a change in the situation or an explanation (see E)

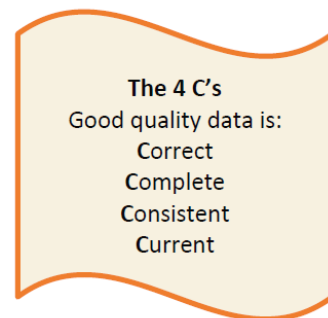
Usable - if you don't use the data for action, question why it is collected

Reliable and accurate - enough to support decisions

Appropriate - using the same tools (e.g. reports or registers) and the same indicator calculations

Timely - old data is of historical value only and decisions must be made based on current data

Explained - Strange numbers or inconsistencies need to be explained



HMIS Data flow: Group discussions.

Use of data for MIYCAN

- Generate information to use in advocating for policy and resources
- Generate knowledge
- Improve cost-effectiveness and efficiency
- Run data quality checks, produce reports, make graphs and tables and other forms of analysis to enable comparisons across time and across locations and to see and analyse trends

The information cycle describes the different components, stages and processes through which data is collected, checked for quality, processed, analysed and used.



II. Nutrition Data Management

Indicators

To be provided by MoH

Tools

Nutrition data elements have been incorporated in most of the registers at most health facility entry points. Instructions for filling out the registers are included in the Health Management Information System, Health Unit and Community Procedure Manual, October 2014. Nutrition data are included in the following forms:

- Integrated nutrition register (HMIS Form 077)
- Pre-ART and ART registers (HMIS Form 080, 081)
- Antenatal, maternity, and postnatal registers (HMIS Forms 071, 072, 078)
- TB register (HMIS Form 096a)
- Child health and HIV-exposed infant (early infant diagnosis) registers (HMIS Forms 073 and 082)

GROUP WORK

Option 1

DIVIDE participants into small groups and have them work through the following exercise and present their ideas in plenary:

Questions for group work

- Who will be responsible for reporting at the facility level?
- Discuss the appropriate timeline (deadline) for submission of monthly reports?
- What support (logistical and technical) will be required for efficient reporting?
- What levels should we report to and who should we report to?

MODULE 6: CLINICAL PRACTICES AND FOOD DEMONSTRATION

Session 6.1: Clinical Practice One: Nutrition Assessment and Categorization

Learning Objectives

At the end of the clinical practice, participants should be able to:

1	Identify contact points where nutritional assessment can be integrated
2	Practice taking weight, height, length and measuring MUAC
3	Look up MUAC cut offs, weight-for-length/height/BMI- for- age z- scores, and BMI
4	Practice assessing for clinical signs of acute malnutrition Practice classifying for the nutritional status
5	Plotting on the growth chart (optional)
Total time: 150 Minutes	

Facilitation Steps

- Each group will use 2½ hours (150 minutes) to visit the contact point.
- Divide the class in groups of 3-4 participants per group.
 - Each group should have a leader and rapporteur
- Let the groups visit different contact points where they can:
 - Practice taking weight, height/length and MUAC Identify clinical signs of acute malnutrition
 - Categorize the nutrition status and if time allows plot the growth chart of the child/children
 - Identify contact points where nutrition can be integrated
 - Observe and participate in the nutrition activities
- The groups to share experiences at end of clinical practice

Session 6.2: Clinical Practice Two: Food/ and or Cooking Demonstration

Practicum to demonstrate a diversified diet for WRA, Infants and Young Children

Learning Objectives

At the end of the clinical practice, participants should be able to:

1	Identify the different locally available foods
2	Practice categorising foods into various food groups of a diversified diet
4	Practice cooking various diversified meals for infants and young children
Total time: 3 hour	

Training Materials

- Different locally available foods
- Dietary Diversity Forms (of food groups)
- Participants manual

Facilitation Steps

- Group participants into 2 groups
- Group 1: Ask participants to list the foods in the 10 food groups of a diversified diet
 - for women in the reproductive age group
- Write responses on VIPP cards and post on wall
- Discuss and come to agreement on the 10 food groups
- Ask participants to categorize them into “Body building foods”, “Energy foods” and
 - “Body-protecting foods”
- Group 2: Ask participants to list the foods in the 7 food groups of a diversified diet
 - for infants and young children
- Write responses on VIPP cards and post on wall
- Discuss and come to agreement on the 7 food groups
- Ask participants to categorize them into “Body building foods”, “Energy foods” and
 - “Body-protecting foods”
- Allow participants to practice actual food preparation to ensure quality dietary diversity is taken into consideration as they prepare meals for their children.
- **Conclusion/ Summary**
 - i. Q&A,
 - ii. Summary slide

Session 6.3: Clinical Practice Three: Observation and Assessment of Breastfeeding

Session Objectives

On completion of this session, participants will be able to:

1	Observe a breastfeed using the Breastfeed Observation Checklist.
2	Assist a mother to learn to position and attach her baby for breastfeeding.
3	Use communication skills when assisting a mother.
Total: 120 Minutes	

Total time: 120 minutes

- *Travel time to and from the clinical practice area is NOT included in this time.*

Training Materials

- Breastfeed Observation Aid from Session 7 – two copies for each participant.
- List of Communication Skills from Session 2 – a copy for each participant.
- Birth Practices checklist from Session 5 - a copy for each participant

Facilitation Steps

- **Preparation for Clinical Practice:**
 - *Make sure that you know where the clinical practice will be held, and where each facilitator should take her group. If you did not do so in a preparatory week, visit the wards or clinics where you will go, introduce yourself to the staff members in charge, and make sure that they are prepared for the session.*
 - *The session time does not include time for travel to a clinical practice site. Add extra time to the timetable if participants must leave the building to go to another site.*

1. Explain the clinical practice (20 minutes)

- This clinical practice will give you an opportunity to:
 - Practice assessing a breastfeed using the Breastfeed Observation Aid.
 - Practice using your communication skills.
 - Help a mother to position and attach her baby for breastfeeding.
- You work in groups of four plus a facilitator with each group. To start with, the whole group of four people works together. One person talks to a mother, while the other members of the group observe. When everyone knows what to do, you can work in pairs, while the facilitator circulates.
- The midwife will tell us which women are suitable to talk with and who have their breastfeeding babies with them on the ward.

- One participant will talk to a mother:
 - Introduce yourself to the mother and ask permission to talk to her. If she does not want to be observed, thank her and find another mother. Introduce your partner/small group and explain that you are interested in infant feeding.
 - Ask permission to watch her baby feed. Avoid saying that you want to watch how she is 'breastfeeding' as this may make her feel nervous. If the baby is heavily wrapped in blankets, ask the mother to unwrap the blankets so that you can see.
 - Try to find a chair or stool to sit on. If necessary, and if permissible, sit on the bed so that you are at the mother's level.
 - If the baby is feeding, ask the mother to continue as she is doing. If the baby is not feeding, ask the mother to offer a feed in the normal way at any time that her baby seems ready. If the baby is willing to feed at this time, ask the mother's permission to watch the feed. If the baby is not interested in feeding, thank the mother and go to another mother.
 - Before or after the breastfeed, ask the mother some open questions about how she is, how her baby is, and how feeding is going, to start the conversation. Encourage the mother to talk about herself and her baby. Practices as many of the listening and learning skills as possible.
 - Remember to praise what mothers are doing right and offer a small amount of relevant information if appropriate.
- The partner or rest of the small group (of four people) will observe:
 - Stand quietly in the background. Try to be as still and quiet as possible. Do not comment or talk among yourselves.
 - Make general observations of the mother and baby. Notice for example: does she look happy? Does she have formula or a feeding bottle with her?
 - Make general observations of the conversation between the mother and the participant. Notice for example: Who does most of the talking? Does the participant ask open questions? Does the mother talk freely, and seem to enjoy it?
 - Make specific observations of the participant's communication skills. Notice if she or he uses helpful non-verbal communication, if she or he uses judging words, or if she or he asks many closed questions to which the mother says 'yes' and 'no'.
- When you observe a breastfeed:
 - Stay quietly watching the mother and baby as the feed continues.
 - While you observe, fill in a Breastfeed Observation Aid. Explain to the mother that you are using an Aid to help you remember the new skills that you are learning. - Mark a tick beside each sign that you observe.
 - Under 'Notes:' at the bottom of the form, write anything else that you observe which seems important for breastfeeding.
- When you have finished observing a mother:
 - Thank the mother for her time and cooperation and say something to encourage and support her.
 - Go with the group into another room or private area to discuss your observations.
 - Discuss what you noticed about the breastfeed and what you noticed about the communication skills that

the participant used.

- **If the mother needs help**
 - When a pair finds a mother, who needs help positioning her baby at the breast, tell the facilitator of your small group. Then practice helping the mother, while your facilitator observes you, and helps if necessary.
 - When a pair has finished helping a mother, if needed, move away from the mother for a discussion. The participant should comment on her or his own performance first. Then the facilitator can praise what they did well, give them relevant information and suggest changes that could be made the next time they help a mother.
 - Before you leave the ward or clinic, tell the staff member which mothers you have suggested to change their positioning and attachment so that the staff member can follow-up with these mothers.
 - Each participant should talk to at least one mother and observe a breastfeed. Not all mothers will need help to position and attach their babies.
- While you are in a ward or clinic, notice:
 - if babies' room-in with their mothers.
 - whether or not babies are given formula, or glucose water.
 - whether or not feeding bottles are used.
 - the presence or absence of advertisements for baby milk.
 - whether sick mothers and babies are admitted to hospital together.
 - how low-birth-weight babies are fed.
- Do not comment on your observations, or show any disapproval, while in the health facility. Wait until the facilitator invites participants to comment privately, or in the classroom.
- While on the ward or clinic, interview the mother and fill in the birth practice checklist. This form helps us to confirm whether mothers received the required support from the health worker-midwife.
 - *Ask if the participants understand what they are to do during the clinical practice and answer any questions. Give directions how to reach the clinical practice area.*

2. Conduct the clinical practice (80 minutes) –

For the facilitator of each small group:

- When you arrive at the clinical practice area:
 - Introduce yourself and your group to the staff member in charge.
 - Ask which mothers and babies it would be appropriate to talk to, and where they are.
 - Try to find a mother and baby who are breastfeeding, or a mother who thinks that her baby may want to feed soon. If this is not possible, talk to any mother and baby.
 - Remember to praise what mothers are doing right and offer a small amount of relevant information if appropriate.
- When a participant finds a mother, who needs help with positioning and attaching her baby, observe the participant assisting that mother, giving any necessary help as needed.

- When the participant has finished talking with the mother, take the group away from the mother, and discuss what the participants observed. Ask them:
 - What did they observe generally about the mother and baby?
 - What signs from the Breastfeed Observation Aid did they observe?
 - Which communication skills did they observe?
- If the mother and baby showed any signs of good or poor positioning and attachment that participants did not see, point them out.
- What practices did they observe using the Birth Practices checklist?
- Before your group leaves the ward or clinic, tell the staff member which mothers you have suggested to change their positioning and attachment so that the staff member can follow-up with these mothers.

3. Discuss the clinical practice (20 minutes)-

- *The whole class comes back together to discuss the clinical practice.*
- *Ask one participant from each group to report briefly on what they learnt.*
- Ask them to comment:
 - On their experiences using the Breastfeed Observation Aid, Birth Practices checklist and the list of Communication Skills.
 - On any special situations of mothers and babies and what they learnt from these situations.
- Encourage participants report only on points of special interest; they do not need to report on details of every individual mother.
- Participants may continue to practice their skills of observing and assisting mothers at other times if this is acceptable to the mothers and to the hospital ward or clinic. Encourage participants to practice in pairs so that one can observe the skills used and discuss them afterwards with the other participant.
- Review any points about the clinical practice that will help the next clinical practice to go better.
 - *Ask if there are any questions.*

Session 6.4: Clinical Practice Four: Breastfeeding Counselling for a Pregnant Woman

Session Objectives:

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

1	Counselling a pregnant woman about her feeding her baby;
2	Discuss with a pregnant woman practices that assist in establishing breastfeeding;
3	Use communication skills of listening and learning and building confidence.
Total: 60 Minutes	

Total session time: 60 minutes

- *Travel time to and from the clinical practice area is NOT included in this time.*

Training Materials:

- Antenatal Checklist from Session 3 – a copy for each participant (optional).
- List of Communication Skills from Session 2 – a copy for each participant.

Facilitation Steps

- **Preparation for Clinical Practice:**
 - *Make sure that you know where the clinical practice will be held, and where each facilitator should take her group. If you did not do so in a preparatory stage, visit the antenatal ward or clinic where you will go, introduce yourself to the staff members in charge, and make sure that they are prepared for the session.*
 - *The session time does not include time for travel to a clinical practice site. Add extra time to the timetable if participants must leave the building to go to another site.*
- 1. **Explain the clinical practice (10 minutes)**
 - This clinical practice gives you an opportunity to:
 - Talk with a pregnant woman about her feeding intentions.
 - Discuss with a pregnant woman practices that assist in establishing breastfeeding, such as early skin to skin contact, rooming-in, baby led feeding, and exclusive breastfeeding without supplements and artificial teats.
 - Use your communication skills of listening and learning and building confidence.
 - You work in groups of 4 with a facilitator with each group. To start with, the whole group works together. You take turns to talk to a pregnant woman, while the other members of the group observe. When everyone knows what

to do, you can work in pairs, while the facilitator circulates.

- One participant in each small group will talk to a mother:
 - Introduce yourself to the pregnant woman and ask permission to talk to her about feeding her baby.
 - Introduce the group or your partner and explain that you are interested in infant feeding.
 - Try to find a chair or stool to sit on.
 - Ask the pregnant woman some open questions, such as “What are your thoughts on feeding your baby?” or “What do you know about breastfeeding?” to start the conversation.
 - Encourage the mother to talk by using your communication skills. Refer to list of Communication Skills. Practice using as many of the listening and learning skills as possible.
 - If the woman’s comments tell you that she already knows much about breastfeeding, you can reflect her knowledge and praise her. You do not need to give her information that she already knows.
 - Provide information in a way that is easy to understand. Include the importance of breastfeeding for the woman as well as her baby and some information on why practices are recommended.
 - Offer opportunities for the woman to ask questions or discuss the information more. You can ask about previous breastfeeding experiences if the woman already has children.
 - Remember to praise what the woman is doing right and offer a small amount of relevant information if appropriate.
- If the pregnant woman tells you that she is not going to breastfeed because she has a medical condition – do NOT ask about her condition. You do not need to know her personal details. You can ask her if anyone has talked to her about feeding her baby if she is not breastfeeding.
 - *Check that participants know where they can refer a mother for infant feeding counselling if needed.*
- The rest of the small group observe:
 - Stand quietly in the background. Try to be as still and quiet as possible. Do not comment or talk among yourselves.
 - Make general observations concerning the conversation between the pregnant woman and the participant. Notice for example: who does most of the talking? Does the participant ask open questions? Does the pregnant woman talk freely, and seem to enjoy it?
 - Make specific observations concerning the participant's communication skills. Notice if she or he uses helpful non-verbal communication, uses judging words, or asks a lot of questions to which the mother says `yes' and `no'.
- When you have finished talking with the pregnant woman:
 - Thank the pregnant woman for her time and cooperation and say something to encourage and support her.
 - Go with the group into another room or private area to discuss your observations.
 - Discuss what you noticed about the discussion and what you noticed about the communication skills that the participant used.
- Each participant should talk with at least one pregnant woman.
- While you are in the ward or clinic notice:

- The presence or absence of advertisements for baby formula, free samples, or pens or other equipment advertising baby formula
- Any posters or leaflets for mothers on the importance of breastfeeding or how to breastfeed.
- Do not comment on your observations or show any disapproval while in the health facility. Wait until the facilitator invites you to comment privately, or in the classroom.
 - *Ask if the participants understand what they are to do during the clinical practice and answer any questions. Give directions how to reach the clinical practice area.*

2. Conduct the clinical practice (40 minutes)

- For the facilitator of each small group:

- Ensure that your group has the Antenatal Checklist (if using this) and a list of Communication Skills to practice using and to watch for when observing colleagues.
- When you arrive at the clinical practice area:
 - Introduce yourself and your group to the staff member in charge.
 - Ask which pregnant women it would be appropriate to talk with and where they are.
- When the participant is finished talking with a pregnant woman, take the group away from the pregnant woman, and discuss what they observed. Ask them:
 - Which communication skills did they observe?
 - Was the information provided accurate and in a suitable amount?

3. Discuss the clinical practice (10 minutes)

- The whole class comes back together to discuss the clinical practice.

- *Ask one participant from each group to report briefly on what they learnt.*
- Ask them to comment on:
 - What the main issues were that women wanted to discuss when they offered information.
 - Their experiences using the list of Communication Skills to talk with the pregnant women.
- Encourage participants to report only on points of special interest. They do not need to report on details of every individual pregnant woman.
- Review any points about the clinical practice that will help the next clinical practice to go better.
 - *Ask if there are any questions.*

Session 6.5: Clinical Practice Five: Observing Hand Expression and Cup Feeding

Session Objectives

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

1	Assist a mother to learn the skills of hand expression.
2	Observe a cup feeding demonstration.
3	Observe for compliance with the Regulations in the health facility.
Total: 100 Minutes	

Session Time

- Hand expression practice (60 minutes)
- Cup feeding demonstration (20 minutes)
- Observing compliance with the Regulations (20 minutes)
 - *The session time does not include time for travel to a clinical practice site(s).*
 - *Add extra time to the timetable if participants must leave the building to go to another site.*

Training Materials

- List of Communication Skills from Session 2 – a copy for each participant.
- Milk Expression handout from Session 11– a copy for each participant.
- How to Cup Feed a Baby handout from Session 11?
- Checklist of observation on Regulations compliance
- **Cup Feeding Demonstration**
 - Small sterile cup and a small cloth to catch any dribbles while cup feeding
 - Remind participants to bring their handout on Cup Feeding a Baby from the earlier session.

Facilitation Steps

- **Preparation for the clinical practice:**
 - *The hand expression clinical practice and the cup feeding demonstration may be done at separate times.*
 - *A mother may be willing to bring her baby to the classroom for the cup feeding demonstration. In some places, mothers may be willing to come to the classroom to learn about hand expression.*
 - *This demonstration might be done in an outpatients' clinic for well-baby visits or immunisations. If the baby is preterm or ill, the group is a possible infection risk to the baby. Try to find a young healthy baby to demonstrate cup feeding.*

- *If the clinical practice is to be held in a clinic or ward, make sure that you know where this is and where each facilitator should take her group. If you did not do so in a preparatory week, visit the wards or clinic where you will go, introduce yourself to the staff members in charge, and make sure that they are prepared for the session.*
- *If needed, ensure there is somewhere private to teach/observe hand expression.*
- *Discuss with the staff on the ward or clinic what containers they use for expressed milk that will be fed to a baby. Ensure there are some clean containers available if the mother wishes to keep the milk that she expresses.*
- *Conduct the cup feeding demonstration in small groups so everyone can see and the mother and the baby are not overwhelmed.*

1. Explain the clinical practice – Hand Expression

5 minutes

Explain the instructions to the participants

- This clinical practice gives you an opportunity to:
 - Assist a mother to learn the skills of hand expression.
 - Practice using your communication skills.

Briefly review the four key points of expressing. Remind participants that it does not matter what quantity of milk is expressed in this practice.

- Each group of four divides into two pairs of participants. Each pair works separately. One person of the pair talks to a mother, while the other observes. The facilitator circulates between the pairs observing and assisting as needed. Mothers may be unwilling to hand express with a group observing.
- To begin:
 - Introduce yourself to the mother and ask permission to talk to her.
 - Introduce your partner and explain that you are interested in learning about hand expression of breast milk.
- Ask the mother some open questions about how she is, how her baby is, and how feeding is going, to start the conversation. Encourage the mother to talk about herself and her baby. Be aware that the mother may be hand expressing for reasons that she does not want to discuss – do not push her to explain. If her baby is ill, show empathy, however you do not need to discuss her baby’s condition in detail. Practice as many of the listening and learning skills as possible.
- Ask the mother if she expresses her milk by hand.
 - If she does hand express, ask her if she can show you how she hand expresses. Let her show you without interruption while you observe the way that she does it
 - do not stop her and tell her that she is doing something wrong, even if you think that she is.
 - If she is comfortable hand expressing, there is milk flowing and she is happy with her technique, praise her for what she is doing, reinforce that breast milk is best for babies and thank her for helping you to learn.
 - If the mother has difficulty with hand expressing, make some positive comments and then ask her if you can suggest some ways that might be easier for her. Explain in simple words the reason for any

suggestions you make, for example, if you suggest that she move her fingers around the breast, explain that there is milk in all areas of the breast and moving her fingers helps the milk to flow from these areas.

- If the mother does not know about hand expression, ask her if you can tell her why it might be useful to learn hand expression. If she agrees, explain some of the reasons why hand expression might be useful to her. Then ask if you can help her to learn how to hand express.
- Try to find a chair or stool to sit on, so that you are at the mother's level. Ensure the mother is comfortable and has some privacy if needed.
- The mother can either just express a small amount to show you how she does it or she can express a full feed for her baby if her baby receives expressed breast milk regularly. If the mother is feeding the milk to the baby, she needs to wash her hands and prepare a suitable container for the milk.
- The first time that a pair finds a mother, who needs help with hand expression, ask the mother for her permission for the facilitator to join you. The participant helps the mother to learn how to hand express, while the facilitator observes and assists if needed.
- The partner will observe:
 - Stand quietly in the background. Try to be as still and quiet as possible. Do not comment.
 - Make general observations of the hand expression – does the mother seem comfortable or does it seem to hurt; does the milk flow? You can use the Hand Expression Aid to help you remember the key points to look for.
 - Make general observations of the conversation between the mother and the participant. Notice for example: Who does most of the talking? Does the participant ask open or closed questions? Does the mother talk freely, and seem to enjoy the discussion or does she find it hard to talk?
 - Make specific observations of the participant's communication skills. Notice if she or he uses helpful non-verbal communication, uses judging words, or asks a lot of questions to which the mother says 'yes' and 'no'.
- When you have finished observing each mother:
 - Thank the mother for her time and cooperation and say something to praise and support her.
 - Go with your partner into another room or private area away from the mothers to discuss your observations.
 - Discuss with your facilitator what you noticed about the hand expression and what you noticed about the communication skills that the participant used.
- Each participant will observe at least one mother hand expressing. Not all mothers will need help to learn how to hand express.
- While you are in a ward or clinic, notice:
 - if babies' room-in with their mothers.
 - the presence or absence of breast pumps.
 - how breast milk is handled/stored for later feeding to a baby in special care; - how low-birthweight or ill babies are fed if they are unable to breastfeed.
- Do not comment on your observations, or show any disapproval, while in the health facility. Wait until the

facilitator invites you to comment privately, or in the classroom.

Ask if the participants understand what they are to do during the clinical practice and answer any questions. Give directions how to reach the clinical practice area.

2. Conduct the clinical practice – hand expression (45 minutes) Instructions for the facilitator of each small group:

- When you arrive at the clinical practice area:
 - Introduce yourself and your group to the staff member in charge.
 - Ask which mothers it would be appropriate to talk to and where they are.
 - Ask that if you find a mother who needs help with hand expression, is it all right to help the mother or do they need to check individually for each mother before they assist her.
 - Remember to praise what mothers are doing right and offer a small amount of relevant information if appropriate.
- Mothers may need something to catch the expressed milk in – a cloth, cotton wool, or if keeping the breast milk, a clean container. If the milk is to be given to the baby, the mother will need to wash her hands first.
- Go between the two pairs in your group. Observe their communication skills and how they assist a mother to learn. If needed, you can demonstrate to the pair, if the mother is willing.
- When the pair of participants is finished talking with the mother, take the group away from the mother, and discuss what they observed. Ask them: - What did they observe generally about the mother and baby? - What signs from the Hand Expression Aid did they observe? - Which communication skills did they observe?
- Let participants comment on their own performances first. Then you can reinforce what they did well, give them relevant information and suggest changes that could be made for the next time they help a mother.
- If the mother has any good techniques of hand expressing that participants did not see, point them out.

3. Discuss the clinical practice – hand expression (10 minutes) –

The whole class comes back together to discuss the clinical practice.

Ask participants to report briefly on what they learnt.

- Ask them to comment on:
 - Any special situations of mothers and babies and what they learnt from these situations regarding expressing breast milk or feeding expressed milk to the baby.
 - Their experiences using the Communication Skills.
 - Because of time limits, participants should report only on points of special interest, rather than on details of every individual mother and baby.
- Participants may continue to practice their skills of observing and assisting mothers at other times if this is acceptable to the mothers and to the hospital ward or clinic. Encourage participants to practice in pairs so that one can observe the skills used and discuss them afterwards with her partner.
- Review any points about the clinical practice that will help the next clinical practice to go better.

Ask if there are any questions.

4. Clinical practice – cup feeding demonstration (20 minutes)

- Most babies will be able to feed at the breast and not need to cup feed. Health workers need to know the basic technique of how cup feeding is done so that they are aware that it works.
- Not every mother needs to know how to cup feed her baby, and you are not practicing teaching this skill to all the mothers. You will see a demonstration of cup feeding so that you understand how it works.

Review the main points of cup feeding from Session 11.

- Instructions for facilitator
- Conduct the cup feeding demonstration in small groups so everyone can see and to avoid overwhelming the baby and the mother.
- Ask a mother if you may demonstrate cup feeding with her baby. This may be a baby who is already receiving expressed breast milk or replacement milk already by cup or a mother who would like to learn how this is done.
- Use open questions to ask about her baby and how the baby is feeding. Explain to the mother why cup feeding is used sometimes.
- Demonstrate to the group how to cup feed. When you are finished, ask the mother what she thought about cup feeding. Answer questions that the mother may have about cup feeding.
- Then move away from the mother and baby before you discuss what the participants observed and learnt about cup feeding.
- Review any points about the clinical practice that will help the next clinical practice to go better.

5. Clinical practice – observing for compliance with the Regulations (20 minutes)

- Each participant should have received a copy of the Regulations observation checklist.
- Ask participants to move around the antenatal and maternity areas, the paediatrics area and outpatient departments.
- Let them check items they observe against the checklist.
- Gather participants for about 5 minutes and discuss the observations they have made.

Regulations observation checklist

1	Is there any observable/written hospital prohibiting giving free formula samples to mothers?	Yes/No
2	Did you find evidence of any promotional materials from infant food manufacturers?	Yes/No
3	Ask any of the health facility staff if they have seen an infant formula company representative visiting their facility in the last 5 years or since they have been there (Whichever is the longer period)	Yes/No
4	On the maternity ward, did you observe any baby being given a feeding bottle or teat?	Yes/No
5	Did you find any evidence of use of infant formula or other artificial feeds in any part of the health facility?	Yes/No
6	Ask any staff member: if a baby/child in hospital requires infant formula how is it obtained or procured. Write answer in the space on the right here. _____ _____ _____	
7	Is the staff member you talked to aware about the Uganda Regulations on Marketing of Infant and Young Child Foods?	Yes/No
8	In your view, does this health facility comply with the Regulations?	Yes/No
Comments		

Session 6.6: Clinical Practice Six – Gathering Information on Complementary Feeding Practices

Session Objectives:

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

1	Demonstrate how to gather information about complementary feeding using counselling skills and the FOOD INTAKE JOB AID, 6-23 MONTHS
2	Provide information about complementary feeding and continuing breastfeeding to a mother of a 6-23 months old child
Total Time: 60 minutes	

Training Materials:

- Clinical practice site with mothers and infants and young children
- Two copies of the FOOD INTAKE JOB AID, 6-23 MONTHS for each participant.
- Two copies of the COUNSELLING SKILLS CHECKLIST for each participant.
- A copy of the PRACTICAL DISCUSSION CHECKLIST for each trainer.
- One set of the food consistency pictures for each participant.
- A typical bowl that a young child would use for each group.

Gathering Information on Complementary Feeding

60 minutes

- A useful way to find out what a child eats is to ask the mother what the child ate yesterday. This information can be used to praise the good feeding practices that are there.
- The FOOD INTAKE JOB AID, 6-23 MONTHS helps you to do this.
- The mother is asked to recall everything the child consumed the previous day. This includes all foods, snacks, drinks, breastfeeds and any vitamin or mineral supplements.
- As you can see, the first column has questions about feeding practices. As you listen to the mother, put a tick mark in the column to show if the practice occurred the previous day.
- You will see that most of the questions in the first column are all closed questions.
- When you use this tool with a mother or caregiver to gather information you should use your counselling skills, including open ended questions.

INTAKE REFERENCE TOOL (6-23 MONTHS). Point out how the pictures are different.

- If you ask a mother a
- bout the consistency of the food – if it was thin or thick, there might be some confusion about how thick you mean. Therefore, here are pictures to show a thick and a thin consistency.

- You show the food consistency pictures to the mother and ask which drawing is most like the food she gave to the child.
- After you have listened to find out what the feeding practices are, you can praise some of the practices you wish to reinforce.

Distribute two blank copies to each person of the COUNSELLING SKILLS CHECKLIST, the FOOD INTAKE JOB AID, 6-23 MONTHS and consistency pictures.

Explain the use of the FOOD INTAKE JOB AID, 6 – 23 MONTHS for gathering Information on Complementary Feeding

- A useful way to find out what a child eats is to ask the mother what the child ate yesterday. This information can be used to praise the good feeding practices that are there.
- The FOOD INTAKE JOB AID, 6-23 MONTHS helps you to do this.
- The mother is asked to recall everything the child consumed the previous day. This includes all foods, snacks, drinks, breastfeeds and any vitamin or mineral supplements.
- As you can see, the first column has questions about feeding practices. As you listen to the mother, put a tick mark in the column to show if the practice occurred the previous day.
- You will see that most of the questions in the first column are all closed questions.
- When you use this tool with a mother or caregiver to gather information you should use your counselling skills, including open ended questions.

FOOD CONSISTENCE INTAKE REFERENCE TOOL, 6-23 MONTHS).

Point out how the pictures are different.

- If you ask a mother about the consistency of the food – if it was thin or thick, there might be some confusion about how thick you mean. Therefore, here are pictures to show a thick and a thin consistency.
- You show the food consistency pictures to the mother and ask which drawing is most like the food she gave to the child.
- After you have listened to find out what the feeding practices are, you can praise some of the practices you wish to reinforce.

Answer questions as needed about the practices. (Make sure the participants notice the differences between the recording form and the reference form).

INSTRUCTIONS TO COMPLETE FOOD INTAKE JOB AID, 6-23 MONTHS

1. Greet the mother. Explain that you want to talk about the child's feeding
2. Fill out the child's name, birth date, age in completed months or years and today's date.
3. Ask to see the growth chart and observe the pattern of the growth
4. Start with: "(Mother name), let us talk about what (child's name) ate yesterday."
5. Continue with: "As we go through what (name) ate yesterday, tell me all (name) ate or drank, meals, other foods, water or breastfeeds." "What was the first thing you gave (name) after he woke up yesterday?" "Did (child's name) eat or drink anything else at that time or breastfeed?"

6. If the mother mentions a preparation, such as a porridge or stew, ask her for the ingredients in the porridge or stew.
7. Then continue with: "What was the next food or drink or breastfeed (child's name) had yesterday?"
8. "Did (child's name) eat/drink anything else at that time?"
9. Remember to 'walk' through yesterday's events with the mother to help her remember all the food/drinks/breastfeeds that the child had.
10. Continue to remind the mother you are interested in what the child ate and drank yesterday (mothers may talk about what the child eats/drinks in general).
11. Clarify any points or ask for further information as needed
12. Mark on the FOOD INTAKE JOB AID, 6-23 MONTHS the practices that are present. If appropriate, show the mother the pictures of thin and thick consistency (for porridge and mixed foods). Ask her which drawing is most like the food she gave the child. Was it thick, stayed in the spoon and held a shape on the plate, or thin, flowed off the spoon and did not hold its shape on the plate?
13. Praise practices you wish to encourage
14. If the child is ill on that day and not eating, encourage the child to drink and eat during illness and provide extra food after illness to help them

1. Explain the clinical practice

- Explain what the participants should take with them:
You do not need to bring many items with you. Carrying many things can be a barrier between you and the mother you are talking with. Take with you:
 - The FOOD INTAKE REFERENCE TOOL, 6-23 MONTHS.
 - Pencil
 - Two copies of the COUNSELLING SKILLS CHECKLIST
 - Two copies of the FOOD INTAKE JOB AID, 6-23 MONTHS and the picture of the thick and thin consistency
 - Common bowl used to feed a young child - between each pair of participants.

Explain how the participants will work:

- You will work in your groups of 3-4 and each group will have one trainer.
- Talk with mothers of children 6-23 months
- One participant talks with the mother, filling in the FOOD INTAKE JOB AID, 6-23 MONTHS at the same time.
- The others in the group observe and fill in the counselling checklist.
- If you meet a child who is ill or has a major feeding difficulty, support the mother/caregiver to access appropriate care
- Do not offer suggestions for treatment of an ill child unless you have the technical competence and authorized to do so.
- When you talk with a mother:
 - Introduce yourself to the mother and ask permission to talk with her. Introduce the others in your group and explain you are interested in learning about feeding young children in general.
 - You may wish to say you are on a course.

- Try to find a chair or stool to sit on, so you are at the same level as the mother.
 - Practice as many of the counselling skills as possible as you gather information from the mother using the FOOD INTAKE JOB AID, 6-23 MONTHS.
 - Listen to what the mother is saying and try not to ask a question if you have already been told the information.
 - Fill out the FOOD INTAKE JOB AID, 6-23 MONTHS as you listen and learn from the mother.
 - Use the information you have gathered and then:*
 - Try to praise two things that are going well
 - Offer the mother two or three pieces of relevant information
 - Offer two or three suggestions that are useful at this time
 - Be careful not to give a lot of advice.
 - Answer any questions the mother may ask as best as you can. Ask your trainer for assistance if necessary.
 - The participants that are observing can mark a tick on the COUNSELLING SKILLS CHECKLIST for every skill that they observe their partner practicing. Remember to observe what the 'counsellor' is doing rather than thinking about what you would say if you were talking to the mother. The observers do not ask the mother any questions.
 - When you have finished talking with a mother, thank her and move away.
 - Briefly, discuss with the group and your trainer what you did and what you learnt and clarify any questions you may have about conducting the exercise.
 - Discuss what practices you praised, what feeding problems you noticed, information and suggestions that you offered, and counselling skills used.
 - Find another mother and repeat the exercise with another participant doing the counselling.
 - Encourage participants to notice feeding practices such as:
 - if children eat any food or have any drinks while waiting
 - whether children are given a bottle or soother/pacifier while waiting
 - general interaction between mothers and children
 - any posters or other information on feeding in the area.
- Use the PRACTICAL DISCUSSION CHECKLIST to guide you as you give feedback to the participants.*
- Discuss arrangements for travel (if needed) and any other details of the Practical Session and whether the discussions will be done at the site or back at the classroom.*

2. Conduct the clinical practice

These notes are for the trainers. Trainers should read these notes to ensure that they know what to do. There is no need to read these notes to the participants.

- Take your group to the working area and introduce your group to the person in charge. Listen to any directions that this contact person gives. This may include suitable areas to use as well as children and mothers not to talk with.
- Remind the participants to try and find mothers of children over six months of age.
- If you cannot find any more children over six months of age, you can take a feeding history from mothers with children under six months of age using the FEEDING HISTORY JOB AID, 0-6 MONTHS from Session 10.

About 10 minutes before the end of the time, remind the groups to start finishing up.

3. Discuss the clinical practice

- In the plenary class, discuss what the participants learnt from listening to the mothers and from the completed FOOD INTAKE JOB AID, 6-23 MONTHS.
- Ask: What did you observe in general looking around the health facility?
- Wait for a few replies. Prompt if needed – posters, leaflets, food for sale, children with food/bottles/soothers?
- Look at the FOOD INTAKE JOB AIDS, 6-23 MONTHS which you filled in.
- What practices are mothers doing that you could praise and encourage?
- What areas need improvement?
- Give some examples of suggestions you made to mothers about complementary feeding practices.
- Would these suggestions be easy to carry out?

Ask participants if they have any questions or if there are points you can make clearer

FOOD INTAKE JOB AID and REFERENCE TOOL 6-23 MONTHS

Enter <input type="checkbox"/> in the Yes column if the practice is in place.		
Enter your initials if a message is given (see FOOD INTAKE REFERENCE TOOL, 6-23 MONTHS for the message).		
FOOD INTAKE JOB AID, 6-23 MONTHS		
Child's name		
Date of birth	Age of child at visit	
Feeding practice	Yes / number where relevant	Key Message given
Growth curve rising.		
Child received breast milk.		
How many meals of a thick consistency did the child eat yesterday? (use consistency photos as needed)		
Child ate an animal-source food yesterday. (meat/fish/offal/bird/eggs)		
Child ate a dairy product yesterday.		
Child ate pulses, nuts, or seeds yesterday		

Child ate a dark-green or yellow vegetable or yellow fruit yesterday		
Child ate sufficient number of meals and snacks yesterday, for his/her age		
Quantity of food eaten at main meal yesterday appropriate for child's age		
Mother assisted the child at meals times		
Child took any vitamin or mineral supplements		
Child ill or recovering from an illness		
FOOD INTAKE REFERENCE TOOL, 6-23 MONTHS		
Feeding Practice	Ideal Feeding Practice	Key Messages to help counsel mothers
Growth curve rising		<i>Look at the shape of the growth curve of the child: is the child growing?</i>
Child received breast milk	Yes	Breastfeeding for 2 years of age or longer helps a child to develop and grow strong and healthy
How many meals of a thick consistency did the child eat yesterday? (use consistency photos as needed)	3 meals	Foods that are thick enough to stay in the spoon give more energy to the child
Child ate an animal-source food yesterday (meat/fish/offal/bird/eggs)?	Animal-source foods should be eaten daily	Animal-source foods are especially good for children to help them grow strong and lively
Child ate a dairy product yesterday	Try to give dairy products daily	Animal-source foods are especially good for children to help them grow strong and lively
Child ate pulses, nuts or seeds yesterday	If meat is not eaten pulses or nuts should be eaten daily, with an iron enhancer such as a vitamin C rich food	Peas, beans, lentils, nuts and seeds are good for children
Child ate a dark-green or yellow vegetable or yellow fruit yesterday	A dark-green or yellow vegetable or yellow fruit should be eaten daily	Dark-green leaves and yellow-coloured fruits and vegetables help the child to have healthy eyes and fewer infections

Child ate sufficient number of meals and snacks yesterday, for his/her age	Child 6 – 8 months: 2 – 3 meals plus 1 – 2 snacks if hungry Child 9 – 23 months: 3 – 4 meals plus 1 – 2 snacks if hungry	A growing child needs 2 – 4 meals a day plus 1 – 2 snacks if hungry: give a variety of foods
Quantity of food eaten at main meal yesterday appropriate for child's age	Child 6 – 8 months: gradually increased to approx. ½ cup at each meal Child 9 – 11months: approx. ½ cup at each meal Child 12 – 23 months: approx. ¾ – 1 cup at each meal	A growing child needs increasing amounts of food
Mother assisted the child at meals times	Yes, assists with learning to eat	A young child needs to learn to eat: encourage and give help with lots of patience
Child took any vitamin or mineral supplements	Vitamin and mineral supplements may be needed if child's needs are not met by food intake	Explain how to use vitamin and mineral supplements if they are needed
Child ill or recovering from an illness	Continue to eat and drink during illness and recovery	Encourage the child to drink and eat during illness and provide extra food after illness to help them recover quickly

7: ANNEXES

Annex 7.1: Ministry of Health Guidelines on meetings, trainings and gatherings during COVID 19

- The meeting/training hall must be big enough, with enough aeration to safely accommodate a maximum of 70 individuals sitting 1M apart from each other.
- All individuals accessing the premises must wear a face mask.
- All individuals accessing the premises must undergo temperature screening
- Ensure provision of adequate hand washing facilities with soap and water or alcohol-based hand rub.
- Everyone MUST wash and sanitize before entry to these places and as frequently as possible.
- Handwashing facilities and alcohol based sanitizers should be placed at strategic points like security checks, entrances, bathrooms, toilets, conference/board rooms
- Ensure the tables are clean and hygienic – regularly clean all surfaces with disinfectant (soap and water or JIK) (e.g. chairs, desks and tables, telephones and keyboards) at least three times a day.
- Provide adequate waste management facilities (waste bins and bin-liners, cans)
- Avoid overcrowding and body contact. Keep a distance of one meter between each other.
- Display posters with information and key messages on COVID-19 in different languages in places that are easily visible (notice boards, doors etc).
- Provide guidelines on Do's and Don'ts to every individual who attends meetings, trainings and/or gatherings

These include the following:

- Cover your mouth and nose with tissue or a handkerchief when coughing and sneezing.
- The handkerchief must be washed and ironed daily. In case of use of disposable tissue, ensure it is disposed of in a waste bin or a designated area where it can be burnt on a daily basis. In this way, you protect others from any virus released through cough and sneezing
- Wash your hands with soap and water or use an alcohol-based hand rub immediately after using the tissue or handkerchief.
- Maintain a distance of 1 meter from anyone who is coughing or sneezing and remind them that they need to have a face mask to avoid infecting others
- Avoid touching your eyes, nose and mouth at all times. Hands touch many surfaces including money which can be contaminated with the virus and you can transfer the virus from the surface to yourself.
- AVOID hand-shakes and hugging at all times.
- DO NOT SPIT in public. Identify secluded places like pit latrines or toilets for purposes of spitting and wash your hands immediately with soap and water.

Annex 7.2: Sample Timetable

MIYCAN Course Timetable – held over 6 days

Time	Title/Description	Time allocation proposed	Lead Facilitator
8:00 – 8:30	Registration	30 m	
8:30 – 9:00	Welcome, ground rules and administration	30m	
9:00 – 9:30	Background to the workshop and objectives & Pre-Test	30m	
9:30 – 9:30	Introductory Module	30m	
9:30– 10.30	Session 1.1: Key concepts of nutrition	60 m	
10:30– 11:00	Break	30m	
11:00 – 12:00	Session 1.1 cont'd: Key concepts of nutrition (Nutritional Requirements of infants, young children, adolescents, pregnant, women, breastfeeding mothers)	60m	
12:00 – 13:00	<i>Session 1.2: Malnutrition: Definition, causes and consequences and prevention</i>	60m	

13:00 – 14:00	Lunch Break	60 minutes	
14:00 – 17:30	Session 1.3: Nutritional Assessment	210m	
17:30 – 18:00	Daily evaluation and end of day		

Day 2			
Day 3			
Time	Title/Description	Proposed Time Allocation	Lead Facilitator
8:30 – 9:00	Recap of Day 2 Recap	30 minutes	
9:00 – 10:30	Session 1.5: Communication and Counseling Infant and Young Child feeding	60 minutes	
10:30 – 11:00	Break	30 minutes	
11:00 – 11:30	Session 3.2: Promoting, Protecting, and supporting Breastfeeding Travel to health facility	45 minutes	
11:30 – 13:30	Clinical practice 1: Nutrition Assessment and categorization Break	30 minutes	
13:30 – 14:30	Session 3.2 cont'd: Promoting, Protecting, and supporting Breastfeeding Travel Back	75 minutes	
14:00 – 15:00	Lunch Break	60 minutes	
15:00 – 16:00	Session 2.1: Maternal Nutrition	60 minutes	
14:30-15:30	Session 3.3: Guidance on feeding infants and young children with special needs	60 minutes	
16:00 – 17:00	Session 2.2: Nutrition in Adolescents	60 minutes	
15:30 – 17:30	Session 3.4: Counselling and Supporting Families on Complementary Feeding Practices Daily evaluation and end of day	60 minutes	
17:30 – 18:00	Clinical Practice 2: Food Demonstration	30 minutes	
18:00	Daily evaluation and end of day	30 minutes	

Day 4			
Time	Title/Description	Proposed Time Allocation	Lead Facilitator
8:30-9:00	Session 3.5 Essential Nutrition actions to promote IYCN and the VAS Strategy for children 6-59 months	30 minutes	
9:00-9:10	Introduction to clinical practice 3 and 4	10 minutes	
9:10 – 9:30	Break		
9:30 – 10:00	Travel to health facility	30 minutes	

10.00-12:30	Clinical practice 3: Observing and assessing a breastfeed	90 minutes	
	Clinical practice 4: Breastfeeding Counselling for pregnant woman	60 minutes	
12:30 – 13:00	Travel back		
13:00-14:00	Lunch Break	60 minutes	
14:00 – 14:45	Session 4.1: Making the health facility baby- mother friendly	45 Minutes	
14:45 – 15:30	Session 4.2: Growth monitoring and promotion	45 minutes	
15:30 – 16:00	Session 4.3: Early Childhood Development	30 minutes	
16:00-17:30	Session 5.1: Quality Improvement in the implementation of MIYCAN activities	90 minutes	
17:30 – 18:00	Daily evaluation and end of day	30 minutes	

Day 5			
Time	Title/Description	Proposed Time allocation	Lead Facilitator
8:30 – 9:00	Introduction to Clinical Practice 5 and 6	30 minutes	
9:00 – 9:30	BREAK	30 minutes	
9:30 – 10:00	Travel to Health facility	30 minutes	
10.00 – 12:30	Clinical practice 5: Observing Hand	90 minutes	
	Clinical practice 6: BFHI assessment		
	Clinical Practice 7: Gathering information on complementary feeding	60 minutes	
12:30 – 13:00	Travel Back	30 minutes	
13:00 – 14:00	LUNCH	60 minutes	
14:00 – 15:00	Session 5.2: Linking health Facility to Community	60 minutes	
16:00 – 17:00	Session 5.3: Management of commodities and supplies for MIYCAN	60 minutes	
17:00 – 17:30	Daily evaluation and end of day	30 minutes	

Day 6			
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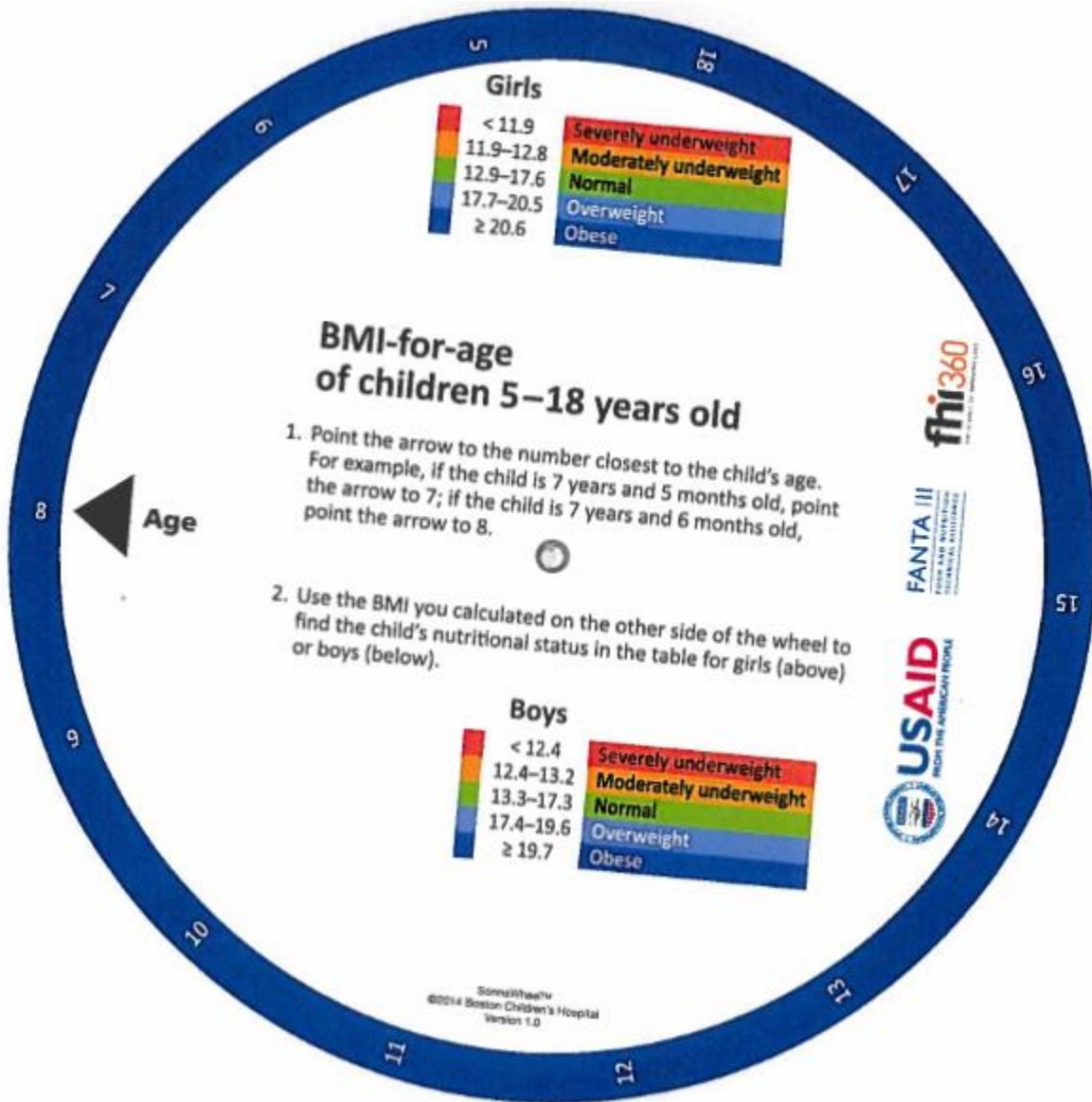
Time	Title/Description	Proposed Time	Lead Facilitator
8:30 – 9:00	Recap Day 5		
9:00 – 11:00	Session 5.4: Monitoring and reporting for MIYCAN	60 minutes	
11:00 – 11:30	BREAK	30 minutes	
11:30 – 12:30	Supportive Supervision for MIYCAN	60 minutes	
12:30 – 13:00	Post Test	60 minutes	
13:00 – 14:00	LUNCH	60 minutes	
14:00 – 14:45	Training Evaluation	15 minutes	
14:45 – 15:00	Closing ceremony	15 minutes	
15:00	Break and Depart		

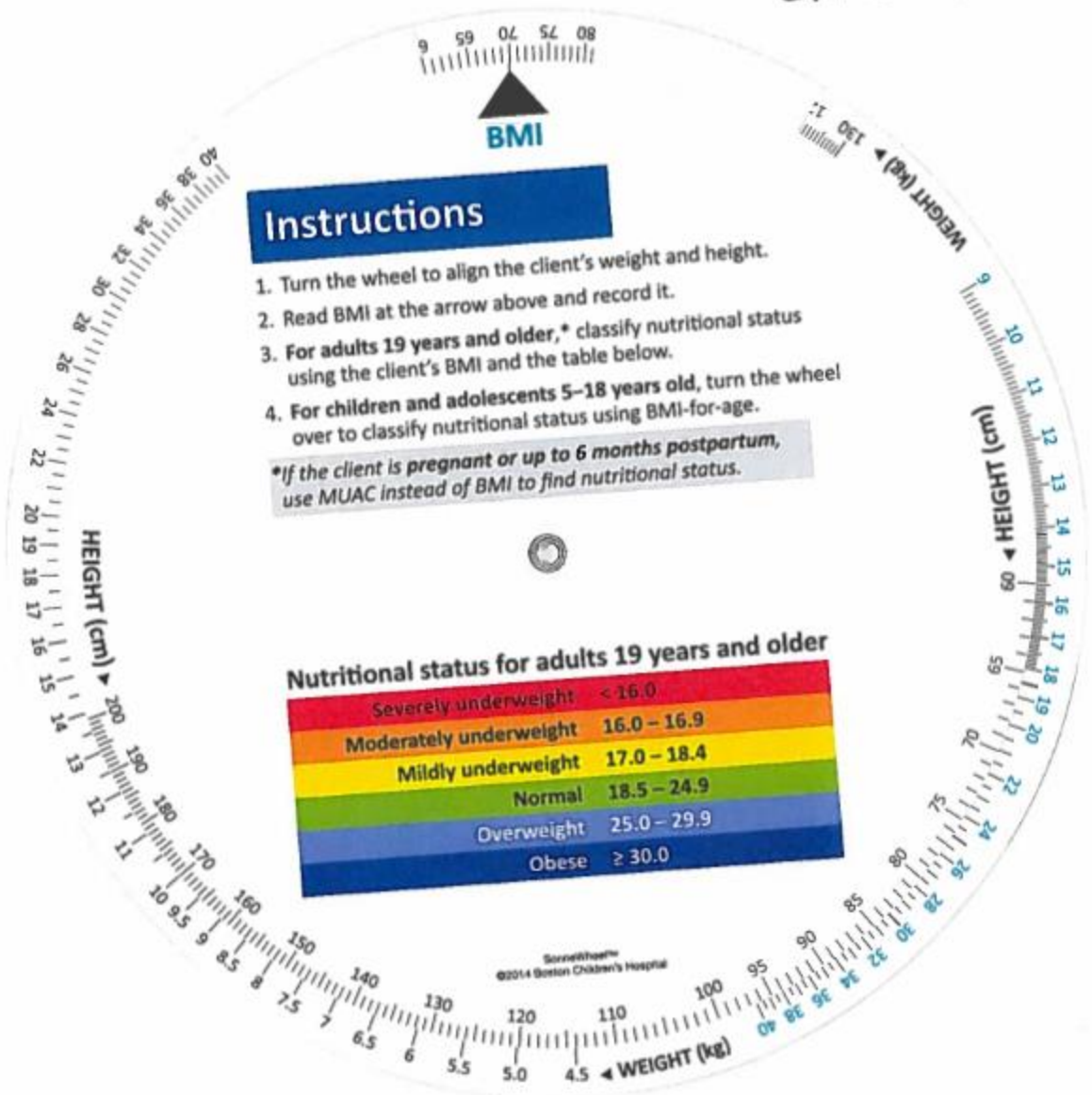
Annex 7.3: Course Evaluation

Title of Session	Very useful	Useful	Somewhat Useful	Not Useful	Comments
Introductory Module					
Session 1.1: Key concepts of nutrition					
Session 1.2: Malnutrition: Definition, causes and consequences and prevention					
Session 1.3: Nutritional Assessment					
Session 1.4: Communication and Counselling					
Clinical practice 1: Nutrition Assessment and categorization					
Session 2.1: Maternal Nutrition					
Session 2.2: Nutrition in Adolescents					
Session 2.3: The role of Health workers in improving maternal and adolescent nutrition at their health facilities					
Session 3.1: National recommendations on Infant and Young Child feeding					
Session 3.2: Promoting, protecting, and supporting Breastfeeding					
Session 3.3: Guidance on feeding in difficult circumstances					
Session 3.4: Counselling and Supporting Families on Complementary Feeding Practices					
Session 4.2: Growth monitoring and promotion					
Clinical practice 2: Observing and assessing a breastfeed					
Clinical practice 3: Breastfeeding Counselling for pregnant woman					
Session 4.1: Making the health facility baby-mother friendly					
Session 4.2: Growth monitoring and promotion					
Session 4.3: Prevention and Control of Micronutrient malnutrition					
Session 4.4: Early Childhood Development					
Session 5.1: Quality Improvement in the implementation of MIYCAN activities					

Clinical practice 4: Observing Hand expression and cup feeding					
Clinical Practice 5: Gathering information on complementary feeding					
Session 5.2: Linking health Facility to Community					
Session 5.3: Supplies and logistics Management for MIYCAN					
Session 4.3: Prevention and control of Micronutrient malnutrition					
Clinical Practice 6: Food Demonstration					

Annex 7.4: BMI Wheel





How the Wheel Works

First

- ✔ Turn the wheel to align the client's weight and height

Next

- ✔ Read/record the BMI displayed

Last

Adults 19 years and over:

- ✔ Classify nutritional status using the reference table on the wheel

Children 5–18 years of age:

- ✔ Turn the wheel over and align the arrow to the number closest to the child's age
- ✔ Classify nutritional status using the reference table on the wheel

Annex 7.5 : BMI Charts

BOYS 0–23 months, weight-for-length

Length (cm)	SAM	MAM	Normal	Overweight	Obesity
	< -3	≥ -3 to < -2	≥ -2 to ≤ +2	> +2 to ≤ +3	> +3
	Weight (kg) →				
45	0–1.8	1.9	2.0–3.0	3.1–3.3	> 3.3
46	0–1.9	2.0–2.1	2.2–3.1	3.2–3.5	> 3.5
47	0–2.0	2.1–2.2	2.3–3.3	3.4–3.7	> 3.7
48	0–2.2	2.3–2.4	2.5–3.6	3.7–3.9	> 3.9
49	0–2.3	2.4–2.5	2.6–3.8	3.9–4.2	> 4.2
50	0–2.5	2.6–2.7	2.8–4.0	4.1–4.4	> 4.4
51	0–2.6	2.7–2.9	3.0–4.2	4.3–4.7	> 4.7
52	0–2.8	2.9–3.1	3.2–4.5	4.6–5.0	> 5.0
53	0–3.0	3.1–3.3	3.4–4.8	4.9–5.3	> 5.3
54	0–3.2	3.3–3.5	3.6–5.1	5.2–5.6	> 5.6
55	0–3.5	3.6–3.7	3.8–5.4	5.5–6.0	> 6.0
56	0–3.7	3.8–4.0	4.1–5.8	5.9–6.3	> 6.3
57	0–3.9	4.0–4.2	4.3–6.1	6.2–6.7	> 6.7
58	0–4.2	4.3–4.5	4.6–6.4	6.5–7.1	> 7.1
59	0–4.4	4.5–4.7	4.8–6.8	6.9–7.4	> 7.4
60	0–4.6	4.7–5.0	5.1–7.1	7.2–7.8	> 7.8
61	0–4.8	4.9–5.2	5.3–7.4	7.5–8.1	> 8.1
62	0–5.0	5.1–5.5	5.6–7.7	7.8–8.5	> 8.5
63	0–5.2	5.3–5.7	5.8–8.0	8.1–8.8	> 8.8
64	0–5.4	5.5–5.9	6.0–8.3	8.4–9.1	> 9.1
65	0–5.6	5.7–6.1	6.2–8.6	8.7–9.4	> 9.4
66	0–5.8	5.9–6.3	6.4–8.9	9.0–9.7	> 9.7
67	0–6.0	6.1–6.5	6.6–9.2	9.3–10.0	> 10.0
68	0–6.2	6.3–6.7	6.8–9.4	9.5–10.3	> 10.3
69	0–6.4	6.5–6.9	7.0–9.7	9.8–10.6	> 10.6
70	0–6.5	6.6–7.1	7.2–10.0	10.1–10.9	> 10.9
71	0–6.7	6.8–7.3	7.4–10.2	10.3–11.2	> 11.2
72	0–6.9	7.0–7.5	7.6–10.5	10.6–11.5	> 11.5
73	0–7.1	7.2–7.6	7.7–10.8	10.9–11.8	> 11.8
74	0–7.2	7.3–7.8	7.9–11.0	11.1–12.1	> 12.1
75	0–7.4	7.5–8.0	8.1–11.3	11.4–12.3	> 12.3
76	0–7.5	7.6–8.2	8.3–11.5	11.6–12.6	> 12.6
77	0–7.7	7.8–8.3	8.4–11.7	11.8–12.8	> 12.8
78	0–7.8	7.9–8.5	8.6–12.0	12.1–13.1	> 13.1
79	0–8.0	8.1–8.6	8.7–12.2	12.3–13.3	> 13.3
80	0–8.1	8.2–8.8	8.9–12.4	12.5–13.6	> 13.6
81	0–8.3	8.4–9.0	9.1–12.6	12.7–13.8	> 13.8
82	0–8.4	8.5–9.1	9.2–12.8	12.9–14.0	> 14.0
83	0–8.6	8.7–9.3	9.4–13.1	13.2–14.3	> 14.3
84	0–8.8	8.9–9.5	9.6–13.3	13.4–14.6	> 14.6
85	0–9.0	9.1–9.7	9.8–13.6	13.7–14.9	> 14.9
86	0–9.2	9.3–9.9	10.0–13.9	14.0–15.2	> 15.2

GIRLS 0–23 months, weight-for-length

Length (cm)	SAM	MAM	Normal	Overweight	Obesity
	< -3	≥ -3 to < -2	≥ -2 to ≤ +2	> +2 to ≤ +3	> +3
	Weight (kg) →				
45	0–1.8	1.9–2.0	2.1–3.0	3.1–3.3	> 3.3
46	0–1.9	2.0–2.1	2.2–3.2	3.3–3.5	> 3.5
47	0–2.1	2.2–2.3	2.4–3.4	3.5–3.7	> 3.7
48	0–2.2	2.3–2.4	2.5–3.6	3.7–4.0	> 4.0
49	0–2.3	2.4–2.5	2.6–3.8	3.9–4.2	> 4.2
50	0–2.5	2.6–2.7	2.8–4.0	4.1–4.5	> 4.5
51	0–2.7	2.8–2.9	3.0–4.3	4.4–4.8	> 4.8
52	0–2.8	2.9–3.1	3.2–4.6	4.7–5.1	> 5.1
53	0–3.0	3.1–3.3	3.4–4.9	5.0–5.4	> 5.4
54	0–3.2	3.3–3.5	3.6–5.2	5.3–5.7	> 5.7
55	0–3.4	3.5–3.7	3.8–5.5	5.6–6.1	> 6.1
56	0–3.6	3.7–3.9	4.0–5.8	5.9–6.4	> 6.4
57	0–3.8	3.9–4.2	4.3–6.1	6.2–6.8	> 6.8
58	0–4.0	4.1–4.4	4.5–6.5	6.6–7.1	> 7.1
59	0–4.2	4.3–4.6	4.7–6.8	6.9–7.5	> 7.5
60	0–4.4	4.5–4.8	4.9–7.1	7.2–7.8	> 7.8
61	0–4.6	4.7–5.0	5.1–7.4	7.5–8.2	> 8.2
62	0–4.8	4.9–5.2	5.3–7.7	7.8–8.5	> 8.5
63	0–5.0	5.1–5.4	5.5–8.0	8.1–8.8	> 8.8
64	0–5.2	5.3–5.6	5.7–8.3	8.4–9.1	> 9.1
65	0–5.4	5.5–5.8	5.9–8.6	8.7–9.5	> 9.5
66	0–5.5	5.6–6.0	6.1–8.8	8.9–9.8	> 9.8
67	0–5.7	5.8–6.2	6.3–9.1	9.2–10.0	> 10.0
68	0–5.9	6.0–6.4	6.5–9.4	9.5–10.3	> 10.3
69	0–6.0	6.1–6.6	6.7–9.6	9.7–10.6	> 10.6
70	0–6.2	6.3–6.8	6.9–9.9	10.0–10.9	> 10.9
71	0–6.4	6.5–6.9	7.0–10.1	10.2–11.1	> 11.1
72	0–6.5	6.6–7.1	7.2–10.3	10.4–11.4	> 11.4
73	0–6.7	6.8–7.3	7.4–10.6	10.7–11.7	> 11.7
74	0–6.8	6.9–7.4	7.5–10.8	10.9–11.9	> 11.9
75	0–7.0	7.1–7.6	7.7–11.0	11.1–12.2	> 12.2
76	0–7.1	7.2–7.7	7.8–11.2	11.3–12.4	> 12.4
77	0–7.3	7.4–7.9	8.0–11.5	11.6–12.6	> 12.6
78	0–7.4	7.5–8.1	8.2–11.7	11.8–12.9	> 12.9
79	0–7.6	7.7–8.2	8.3–11.9	12.0–13.1	> 13.1
80	0–7.7	7.8–8.4	8.5–12.1	12.2–13.4	> 13.4
81	0–7.9	8.0–8.6	8.7–12.4	12.5–13.7	> 13.7
82	0–8.0	8.1–8.7	8.8–12.6	12.7–13.9	> 13.9
83	0–8.2	8.3–8.9	9.0–12.9	13.0–14.2	> 14.2
84	0–8.4	8.5–9.1	9.2–13.2	13.3–14.5	> 14.5
85	0–8.6	8.7–9.3	9.4–13.5	13.6–14.9	> 14.9
86	0–8.8	8.9–9.6	9.7–13.8	13.9–15.2	> 15.2

BOYS 0–23 months, weight-for-length					
Length ↓ (cm)	SAM < -3	MAM ≥ -3 to < -2	Normal ≥ -2 to ≤ +2	Overweight > +2 to ≤ +3	Obesity > +3
	Weight (kg) →				
87	0–9.4	9.5–10.1	10.2–14.2	14.3–15.5	> 15.5
88	0–9.6	9.7–10.4	10.5–14.5	14.6–15.8	> 15.8
89	0–9.8	9.9–10.6	10.7–14.7	14.8–16.1	> 16.1
90	0–10.0	10.1–10.8	10.9–15.0	15.1–16.4	> 16.4
91	0–10.2	10.3–11.0	11.1–15.3	15.4–16.7	> 16.7
92	0–10.4	10.5–11.2	11.3–15.6	15.7–17.0	> 17.0
93	0–10.6	10.7–11.4	11.5–15.8	15.9–17.3	> 17.3
94	0–10.7	10.8–11.6	11.7–16.1	16.2–17.6	> 17.6
95	0–10.9	11.0–11.8	11.9–16.4	16.5–17.9	> 17.9
96	0–11.1	11.2–12.0	12.1–16.7	16.8–18.2	> 18.2
97	0–11.3	11.4–12.2	12.3–17.0	17.1–18.5	> 18.5
98	0–11.5	11.6–12.4	12.5–17.3	17.4–18.9	> 18.9
99	0–11.7	11.8–12.6	12.7–17.6	17.7–19.2	> 19.2
100	0–11.9	12.0–12.8	12.9–18.0	18.1–19.6	> 19.6

BOYS 24–59 months, weight-for-height					
Height ↓ (cm)	SAM < -3	MAM ≥ -3 to < -2	Normal ≥ -2 to ≤ +2	Overweight > +2 to ≤ +3	Obesity > +3
	Weight (kg) →				
65	0–5.8	5.9–6.2	6.3–8.8	8.9–9.6	> 9.6
66	0–6.0	6.1–6.4	6.5–9.1	9.2–9.9	> 9.9
67	0–6.1	6.2–6.6	6.7–9.4	9.5–10.2	> 10.2
68	0–6.3	6.4–6.8	6.9–9.6	9.7–10.5	> 10.5
69	0–6.5	6.6–7.0	7.1–9.9	10.0–10.8	> 10.8
70	0–6.7	6.8–7.2	7.3–10.2	10.3–11.1	> 11.1
71	0–6.8	6.9–7.4	7.5–10.4	10.5–11.4	> 11.4
72	0–7.0	7.1–7.6	7.7–10.7	10.8–11.7	> 11.7
73	0–7.2	7.3–7.8	7.9–11.0	11.1–12.0	> 12.0
74	0–7.3	7.4–7.9	8.0–11.2	11.3–12.2	> 12.2
75	0–7.5	7.6–8.1	8.2–11.4	11.5–12.5	> 12.5
76	0–7.6	7.7–8.3	8.4–11.7	11.8–12.8	> 12.8
77	0–7.8	7.9–8.4	8.5–11.9	12.0–13.0	> 13.0
78	0–7.9	8.0–8.6	8.7–12.1	12.2–13.3	> 13.3
79	0–8.1	8.2–8.7	8.8–12.3	12.4–13.5	> 13.5
80	0–8.2	8.3–8.9	9.0–12.6	12.7–13.7	> 13.7
81	0–8.4	8.5–9.1	9.2–12.8	12.9–14.0	> 14.0
82	0–8.6	8.7–9.2	9.3–13.0	13.1–14.2	> 14.2
83	0–8.7	8.8–9.4	9.5–13.3	13.4–14.5	> 14.5
84	0–8.9	9.0–9.6	9.7–13.5	13.6–14.8	> 14.8
85	0–9.1	9.2–9.9	10.0–13.8	13.9–15.1	> 15.1
86	0–9.3	9.4–10.1	10.2–14.1	14.2–15.4	> 15.4
87	0–9.5	9.6–10.3	10.4–14.4	14.5–15.7	> 15.7
88	0–9.7	9.8–10.5	10.6–14.7	14.8–16.0	> 16.0

GIRLS 0–23 months, weight-for-length					
Length ↓ (cm)	SAM < -3	MAM ≥ -3 to < -2	Normal ≥ -2 to ≤ +2	Overweight > +2 to ≤ +3	Obesity > +3
	Weight (kg) →				
87	0–9.0	9.1–9.8	9.9–14.1	14.2–15.5	> 15.5
88	0–9.2	9.3–10.0	10.1–14.4	14.5–15.9	> 15.9
89	0–9.4	9.5–10.2	10.3–14.7	14.8–16.2	> 16.2
90	0–9.6	9.7–10.4	10.5–15.0	15.1–16.5	> 16.5
91	0–9.8	9.9–10.6	10.7–15.3	15.4–16.9	> 16.9
92	0–10.0	10.1–10.8	10.9–15.6	15.7–17.2	> 17.2
93	0–10.1	10.2–11.0	11.1–15.9	16.0–17.5	> 17.5
94	0–10.3	10.4–11.2	11.3–16.2	16.3–17.9	> 17.9
95	0–10.5	10.6–11.4	11.5–16.5	16.6–18.2	> 18.2
96	0–10.7	10.8–11.6	11.7–16.8	16.9–18.6	> 18.6
97	0–10.9	11.0–11.9	12.0–17.1	17.2–18.9	> 18.9
98	0–11.1	11.2–12.1	12.2–17.5	17.6–19.3	> 19.3
99	0–11.3	11.4–12.3	12.4–17.8	17.9–19.6	> 19.6
100	0–11.5	11.6–12.5	12.6–18.1	18.2–20.0	> 20.0

GIRLS 24–59 months, weight-for-height					
Height ↓ (cm)	SAM < -3	MAM ≥ -3 to < -2	Normal ≥ -2 to ≤ +2	Overweight > +2 to ≤ +3	Obesity > +3
	Weight (kg) →				
65	0–5.5	5.6–6.0	6.1–8.7	8.8–9.7	> 9.7
66	0–5.7	5.8–6.2	6.3–9.0	9.1–10.0	> 10.0
67	0–5.8	5.9–6.3	6.4–9.3	9.4–10.2	> 10.2
68	0–6.0	6.1–6.5	6.6–9.5	9.6–10.5	> 10.5
69	0–6.2	6.3–6.7	6.8–9.8	9.9–10.8	> 10.8
70	0–6.3	6.4–6.9	7.0–10.0	10.1–11.1	> 11.1
71	0–6.5	6.6–7.0	7.1–10.3	10.4–11.3	> 11.3
72	0–6.6	6.7–7.2	7.3–10.5	10.6–11.6	> 11.6
73	0–6.8	6.9–7.4	7.5–10.7	10.8–11.8	> 11.8
74	0–6.9	7.0–7.5	7.6–11.0	11.1–12.1	> 12.1
75	0–7.1	7.2–7.7	7.8–11.2	11.3–12.3	> 12.3
76	0–7.2	7.3–7.9	8.0–11.4	11.5–12.6	> 12.6
77	0–7.4	7.5–8.0	8.1–11.6	11.7–12.8	> 12.8
78	0–7.5	7.6–8.2	8.3–11.8	11.9–13.1	> 13.1
79	0–7.7	7.8–8.3	8.4–12.1	12.2–13.3	> 13.3
80	0–7.8	7.9–8.5	8.6–12.3	12.4–13.6	> 13.6
81	0–8.0	8.1–8.7	8.8–12.6	12.7–13.9	> 13.9
82	0–8.2	8.3–8.9	9.0–12.8	12.9–14.1	> 14.1
83	0–8.4	8.5–9.1	9.2–13.1	13.2–14.5	> 14.5
84	0–8.5	8.6–9.3	9.4–13.4	13.5–14.8	> 14.8
85	0–8.7	8.8–9.5	9.6–13.7	13.8–15.1	> 15.1
86	0–8.9	9.0–9.7	9.8–14.0	14.1–15.4	> 15.4
87	0–9.1	9.2–9.9	10.0–14.3	14.4–15.8	> 15.8
88	0–9.3	9.4–10.1	10.2–14.6	14.7–16.1	> 16.1

BOYS 24–59 months, weight-for-height					
Height ↓(cm)	SAM	MAM	Normal	Overweight	Obesity
	< -3	≥ -3 to < -2	≥ -2 to ≤ +2	> +2 to ≤ +3	> +3
	Weight (kg) →				
89	0–9.9	10.0–10.7	10.8–14.9	15.0–16.3	> 16.3
90	0–10.1	10.2–10.9	11.0–15.2	15.3–16.6	> 16.6
91	0–10.3	10.4–11.1	11.2–15.5	15.6–16.9	> 16.9
92	0–10.5	10.6–11.3	11.4–15.8	15.9–17.2	> 17.2
93	0–10.7	10.8–11.5	11.6–16.0	16.1–17.5	> 17.5
94	0–10.9	11.0–11.7	11.8–16.3	16.4–17.8	> 17.8
95	0–11.0	11.1–11.9	12.0–16.6	16.7–18.1	> 18.1
96	0–11.2	11.3–12.1	12.2–16.9	17.0–18.4	> 18.4
97	0–11.4	11.5–12.3	12.4–17.2	17.3–18.8	> 18.8
98	0–11.6	11.7–12.5	12.6–17.5	17.6–19.1	> 19.1
99	0–11.8	11.9–12.8	12.9–17.9	18.0–19.5	> 19.5
100	0–12.0	12.1–13.0	13.1–18.2	18.3–19.9	> 19.9
101	0–12.2	12.3–13.2	13.3–18.5	18.6–20.3	> 20.3
102	0–12.4	12.5–13.5	13.6–18.9	19.0–20.7	> 20.7
103	0–12.7	12.8–13.7	13.8–19.3	19.4–21.1	> 21.1
104	0–12.9	13.0–13.9	14.0–19.7	19.8–21.6	> 21.6
105	0–13.1	13.2–14.2	14.3–20.1	20.2–22.0	> 22.0
106	0–13.3	13.4–14.4	14.5–20.5	20.6–22.5	> 22.5
107	0–13.6	13.7–14.7	14.8–20.9	21.0–22.9	> 22.9
108	0–13.8	13.9–15.0	15.1–21.3	21.4–23.4	> 23.4
109	0–14.0	14.1–15.2	15.3–21.8	21.9–23.9	> 23.9
110	0–14.3	14.4–15.5	15.6–22.2	22.3–24.4	> 24.4
111	0–14.5	14.6–15.8	15.9–22.7	22.8–25.0	> 25.0
112	0–14.8	14.9–16.1	16.2–23.1	23.2–25.5	> 25.5
113	0–15.1	15.2–16.4	16.5–23.6	23.7–26.0	> 26.0
114	0–15.3	15.4–16.7	16.8–24.1	24.2–26.6	> 26.6
115	0–15.6	15.7–17.0	17.1–24.6	24.7–27.2	> 27.2
116	0–15.9	16.0–17.3	17.4–25.1	25.2–27.8	> 27.8
117	0–16.1	16.2–17.6	17.7–25.6	25.7–28.3	> 28.3
118	0–16.4	16.5–17.9	18.0–26.1	26.2–28.9	> 28.9
119	0–16.7	16.8–18.2	18.3–26.6	26.7–29.5	> 29.5
120	0–17.0	17.1–18.5	18.6–27.2	27.3–30.1	> 30.1

GIRLS 24–59 months, weight-for-height					
Height ↓(cm)	SAM	MAM	Normal	Overweight	Obesity
	< -3	≥ -3 to < -2	≥ -2 to ≤ +2	> +2 to ≤ +3	> +3
	Weight (kg) →				
89	0–9.5	9.6–10.3	10.4–14.9	15.0–16.4	> 16.4
90	0–9.7	9.8–10.5	10.6–15.2	15.3–16.8	> 16.8
91	0–9.9	10.0–10.8	10.9–15.5	15.6–17.1	> 17.1
92	0–10.1	10.2–11.0	11.1–15.8	15.9–17.4	> 17.4
93	0–10.3	10.4–11.2	11.3–16.1	16.2–17.8	> 17.8
94	0–10.5	10.6–11.4	11.5–16.4	16.5–18.1	> 18.1
95	0–10.7	10.8–11.6	11.7–16.7	16.8–18.5	> 18.5
96	0–10.8	10.9–11.8	11.9–17.0	17.1–18.8	> 18.8
97	0–11.0	11.1–12.0	12.1–17.4	17.5–19.2	> 19.2
98	0–11.2	11.3–12.2	12.3–17.7	17.8–19.5	> 19.5
99	0–11.4	11.5–12.4	12.5–18.0	18.1–19.9	> 19.9
100	0–11.6	11.7–12.7	12.8–18.4	18.5–20.3	> 20.3
101	0–11.9	12.0–12.9	13.0–18.7	18.8–20.7	> 20.7
102	0–12.1	12.2–13.2	13.3–19.1	19.2–21.1	> 21.1
103	0–12.3	12.4–13.4	13.5–19.5	19.6–21.6	> 21.6
104	0–12.5	12.6–13.7	13.8–19.9	20.0–22.0	> 22.0
105	0–12.8	12.9–13.9	14.0–20.3	20.4–22.5	> 22.5
106	0–13.0	13.1–14.2	14.3–20.8	20.9–23.0	> 23.0
107	0–13.3	13.4–14.5	14.6–21.2	21.3–23.5	> 23.5
108	0–13.6	13.7–14.8	14.9–21.7	21.8–24.0	> 24.0
109	0–13.8	13.9–15.1	15.2–22.1	22.2–24.5	> 24.5
110	0–14.1	14.2–15.4	15.5–22.6	22.7–25.1	> 25.1
111	0–14.4	14.5–15.7	15.8–23.1	23.2–25.7	> 25.7
112	0–14.7	14.8–16.1	16.2–23.6	23.7–26.2	> 26.2
113	0–15.0	15.1–16.4	16.5–24.2	24.3–26.8	> 26.8
114	0–15.3	15.4–16.7	16.8–24.7	24.8–27.4	> 27.4
115	0–15.6	15.7–17.1	17.2–25.2	25.3–28.1	> 28.1
116	0–15.9	16.0–17.4	17.5–25.8	25.9–28.7	> 28.7
117	0–16.2	16.3–17.7	17.8–26.3	26.4–29.3	> 29.3
118	0–16.5	16.6–18.1	18.2–26.9	27.0–29.9	> 29.9
119	0–16.8	16.9–18.4	18.5–27.4	27.5–30.6	> 30.6
120	0–17.2	17.3–18.8	18.9–28.0	28.1–31.2	> 31.2

BMI-for-Age Tables

BOYS

Age (years: months)	SAM Less than -3 (BMI)	MAM -3 to less than -2 (BMI)	Normal -2 to less than +1 (BMI)	Overweight +1 to +2 (BMI)	Obesity Greater than +2 (BMI)
5:1	< 12.1	12.1-12.9	13.0-16.6	16.7-18.3	> 18.3
5:6	< 12.1	12.1-12.9	13.0-16.7	16.8-18.4	> 18.4
6:0	< 12.1	12.1-12.9	13.0-16.8	16.9-18.5	> 18.5
6:6	< 12.2	12.2-13.0	13.1-16.9	17.0-18.7	> 18.7
7:0	< 12.3	12.3-13.0	13.1-17.0	17.1-19.0	> 19.0
7:6	< 12.3	12.3-13.1	13.2-17.2	17.3-19.3	> 19.3
8:0	< 12.4	12.4-13.2	13.3-17.4	17.5-19.7	> 19.7
8:6	< 12.5	12.5-13.3	13.4-17.7	17.8-20.1	> 20.1
9:0	< 12.6	12.6-13.4	13.5-17.9	18.0-20.5	> 20.5
9:6	< 12.7	12.7-13.5	13.6-18.2	18.3-20.9	> 20.9
10:0	< 12.8	12.8-13.6	13.7-18.5	18.6-21.4	> 21.4
10:6	< 12.9	12.9-13.8	13.9-18.8	18.9-21.9	> 21.9
11:0	< 13.1	13.1-14.0	14.1-19.2	19.3-22.5	> 22.5
11:6	< 13.2	13.2-14.1	14.2-19.5	19.6-23.0	> 23.0
12:0	< 13.4	13.4-14.4	14.5-19.9	20.0-23.6	> 23.6
12:6	< 13.6	13.6-14.6	14.7-20.4	20.5-24.2	> 24.2
13:0	< 13.8	13.8-14.8	14.9-20.8	20.9-24.8	> 24.8
13:6	< 14.0	14.0-15.1	15.2-21.3	21.4-25.3	> 25.3
14:0	< 14.3	14.3-15.4	15.5-21.8	21.9-25.9	> 25.9
14:6	< 14.5	14.5-15.6	15.7-22.2	22.3-26.5	> 26.5
15:0	< 14.7	14.7-15.9	16.0-22.7	22.8-27.0	> 27.0
15:6	< 14.9	14.9-16.2	16.3-23.1	23.2-27.4	> 27.4
16:0	< 15.1	15.1-16.4	16.5-23.5	23.6-27.9	> 27.9
16:6	< 15.3	15.3-16.6	16.7-23.9	24.0-28.3	> 28.3
17:0	< 15.4	15.4-16.8	16.9-24.3	24.4-28.6	> 28.6
17:6	< 15.6	15.6-17.0	17.1-24.6	24.7-29.0	> 29.0
18:0	< 15.7	15.7-17.2	17.3-24.9	25.0-29.2	> 29.2

GIRLS

Age (years: months)	SAM Less than -3 (BMI)	MAM -3 to less than -2 (BMI)	Normal -2 to less than +1 (BMI)	Overweight +1 to +2 (BMI)	Obesity Greater than +2 (BMI)
5:1	< 11.8	11.8-12.6	12.7-16.9	17.0-18.9	> 18.9
5:6	< 11.7	11.7-12.6	12.7-16.9	17.0-19.0	> 19.0
6:0	< 11.7	11.7-12.6	12.7-17.0	17.1-19.2	> 19.2
6:6	< 11.7	11.7-12.6	12.7-17.1	17.2-19.5	> 19.5
7:0	< 11.8	11.8-12.6	12.7-17.3	17.4-19.8	> 19.8
7:6	< 11.8	11.8-12.7	12.8-17.5	17.6-20.1	> 20.1
8:0	< 11.9	11.9-12.8	12.9-17.7	17.8-20.6	> 20.6
8:6	< 12.0	12.0-12.9	13.0-18.0	18.1-21.0	> 21.0
9:0	< 12.1	12.1-13.0	13.1-18.3	18.4-21.5	> 21.5
9:6	< 12.2	12.2-13.2	13.3-18.7	18.8-22.0	> 22.0
10:0	< 12.4	12.4-13.4	13.5-19.0	19.1-22.6	> 22.6
10:6	< 12.5	12.5-13.6	13.7-19.4	19.5-23.1	> 23.1
11:0	< 12.7	12.7-13.8	13.9-19.9	20.0-23.7	> 23.7
11:6	< 12.9	12.9-14.0	14.1-20.3	20.4-24.3	> 24.3
12:0	< 13.2	13.2-14.3	14.4-20.8	20.9-25.0	> 25.0
12:6	< 13.4	13.4-14.6	14.7-21.3	21.4-25.6	> 25.6
13:0	< 13.6	13.6-14.8	14.9-21.8	21.9-26.2	> 26.2
13:6	< 13.8	13.8-15.1	15.2-22.3	22.4-26.8	> 26.8
14:0	< 14.0	14.0-15.3	15.4-22.7	22.8-27.3	> 27.3
14:6	< 14.2	14.2-15.6	15.7-23.1	23.2-27.8	> 27.8
15:0	< 14.4	14.4-15.8	15.9-23.5	23.6-28.2	> 28.2
15:6	< 14.5	14.5-15.9	16.0-23.8	23.9-28.6	> 28.6
16:0	< 14.6	14.6-16.1	16.2-24.1	24.2-28.9	> 28.9
16:6	< 14.7	14.7-16.2	16.3-24.3	24.4-29.1	> 29.1
17:0	< 14.7	14.7-16.3	16.4-24.5	24.6-29.3	> 29.4
17:6	< 14.7	14.7-16.3	16.4-24.6	24.7-29.4	> 29.4
18:0	< 14.7	14.7-16.3	16.4-24.8	24.9-29.5	> 29.5

**Weight-for-age BOYS
Birth to 5 years (z-scores)**



**World Health
Organization**

Year: Month	Months	-3 SD	-2 SD	-1 SD	Median	1 SD	2 SD	3 SD
0: 0	0	2.1	2.5	2.9	3.3	3.9	4.4	5.0
0: 1	1	2.9	3.4	3.9	4.5	5.1	5.8	6.6
0: 2	2	3.8	4.3	4.9	5.6	6.3	7.1	8.0
0: 3	3	4.4	5.0	5.7	6.4	7.2	8.0	9.0
0: 4	4	4.9	5.6	6.2	7.0	7.8	8.7	9.7
0: 5	5	5.3	6.0	6.7	7.5	8.4	9.3	10.4
0: 6	6	5.7	6.4	7.1	7.9	8.8	9.8	10.9
0: 7	7	5.9	6.7	7.4	8.3	9.2	10.3	11.4
0: 8	8	6.2	6.9	7.7	8.6	9.6	10.7	11.9
0: 9	9	6.4	7.1	8.0	8.9	9.9	11.0	12.3
0:10	10	6.6	7.4	8.2	9.2	10.2	11.4	12.7
0:11	11	6.8	7.6	8.4	9.4	10.5	11.7	13.0
1: 0	12	6.9	7.7	8.6	9.6	10.8	12.0	13.3
1: 1	13	7.1	7.9	8.8	9.9	11.0	12.3	13.7
1: 2	14	7.2	8.1	9.0	10.1	11.3	12.6	14.0
1: 3	15	7.4	8.3	9.2	10.3	11.5	12.8	14.3
1: 4	16	7.5	8.4	9.4	10.5	11.7	13.1	14.6
1: 5	17	7.7	8.6	9.6	10.7	12.0	13.4	14.9
1: 6	18	7.8	8.8	9.8	10.9	12.2	13.7	15.3
1: 7	19	8.0	8.9	10.0	11.1	12.5	13.9	15.6
1: 8	20	8.1	9.1	10.1	11.3	12.7	14.2	15.9
1: 9	21	8.2	9.2	10.3	11.5	12.9	14.5	16.2
1:10	22	8.4	9.4	10.5	11.8	13.2	14.7	16.5
1:11	23	8.5	9.5	10.7	12.0	13.4	15.0	16.8
2: 0	24	8.6	9.7	10.8	12.2	13.6	15.3	17.1
2: 1	25	8.8	9.8	11.0	12.4	13.9	15.5	17.5
2: 2	26	8.9	10.0	11.2	12.5	14.1	15.8	17.8
2: 3	27	9.0	10.1	11.3	12.7	14.3	16.1	18.1
2: 4	28	9.1	10.2	11.5	12.9	14.5	16.3	18.4
2: 5	29	9.2	10.4	11.7	13.1	14.8	16.6	18.7

Weight-for-age BOYS
Birth to 5 years (z-scores)



World Health Organization

Year: Month	Months	-3 SD	-2 SD	-1 SD	Median	1 SD	2 SD	3 SD
2: 6	30	9.4	10.5	11.8	13.3	15.0	16.9	19.0
2: 7	31	9.5	10.7	12.0	13.5	15.2	17.1	19.3
2: 8	32	9.6	10.8	12.1	13.7	15.4	17.4	19.6
2: 9	33	9.7	10.9	12.3	13.8	15.6	17.6	19.9
2:10	34	9.8	11.0	12.4	14.0	15.8	17.8	20.2
2:11	35	9.9	11.2	12.6	14.2	16.0	18.1	20.4
3: 0	36	10.0	11.3	12.7	14.3	16.2	18.3	20.7
3: 1	37	10.1	11.4	12.9	14.5	16.4	18.6	21.0
3: 2	38	10.2	11.5	13.0	14.7	16.6	18.8	21.3
3: 3	39	10.3	11.6	13.1	14.8	16.8	19.0	21.6
3: 4	40	10.4	11.8	13.3	15.0	17.0	19.3	21.9
3: 5	41	10.5	11.9	13.4	15.2	17.2	19.5	22.1
3: 6	42	10.6	12.0	13.6	15.3	17.4	19.7	22.4
3: 7	43	10.7	12.1	13.7	15.5	17.6	20.0	22.7
3: 8	44	10.8	12.2	13.8	15.7	17.8	20.2	23.0
3: 9	45	10.9	12.4	14.0	15.8	18.0	20.5	23.3
3:10	46	11.0	12.5	14.1	16.0	18.2	20.7	23.6
3:11	47	11.1	12.6	14.3	16.2	18.4	20.9	23.9
4: 0	48	11.2	12.7	14.4	16.3	18.6	21.2	24.2
4: 1	49	11.3	12.8	14.5	16.5	18.8	21.4	24.5
4: 2	50	11.4	12.9	14.7	16.7	19.0	21.7	24.8
4: 3	51	11.5	13.1	14.8	16.8	19.2	21.9	25.1
4: 4	52	11.6	13.2	15.0	17.0	19.4	22.2	25.4
4: 5	53	11.7	13.3	15.1	17.2	19.6	22.4	25.7
4: 6	54	11.8	13.4	15.2	17.3	19.8	22.7	26.0
4: 7	55	11.9	13.5	15.4	17.5	20.0	22.9	26.3
4: 8	56	12.0	13.6	15.5	17.7	20.2	23.2	26.6
4: 9	57	12.1	13.7	15.6	17.8	20.4	23.4	26.9
4:10	58	12.2	13.8	15.8	18.0	20.6	23.7	27.2
4:11	59	12.3	14.0	15.9	18.2	20.8	23.9	27.6
5: 0	60	12.4	14.1	16.0	18.3	21.0	24.2	27.9

WHO Child Growth Standards

**Weight-for-age GIRLS
Birth to 5 years (z-scores)**



**World Health
Organization**

Year: Month	Months	-3 SD	-2 SD	-1 SD	Median	1 SD	2 SD	3 SD
0: 0	0	2.0	2.4	2.8	3.2	3.7	4.2	4.8
0: 1	1	2.7	3.2	3.6	4.2	4.8	5.5	6.2
0: 2	2	3.4	3.9	4.5	5.1	5.8	6.6	7.5
0: 3	3	4.0	4.5	5.2	5.8	6.6	7.5	8.5
0: 4	4	4.4	5.0	5.7	6.4	7.3	8.2	9.3
0: 5	5	4.8	5.4	6.1	6.9	7.8	8.8	10.0
0: 6	6	5.1	5.7	6.5	7.3	8.2	9.3	10.6
0: 7	7	5.3	6.0	6.8	7.6	8.6	9.8	11.1
0: 8	8	5.6	6.3	7.0	7.9	9.0	10.2	11.6
0: 9	9	5.8	6.5	7.3	8.2	9.3	10.5	12.0
0:10	10	5.9	6.7	7.5	8.5	9.6	10.9	12.4
0:11	11	6.1	6.9	7.7	8.7	9.9	11.2	12.8
1: 0	12	6.3	7.0	7.9	8.9	10.1	11.5	13.1
1: 1	13	6.4	7.2	8.1	9.2	10.4	11.8	13.5
1: 2	14	6.6	7.4	8.3	9.4	10.6	12.1	13.8
1: 3	15	6.7	7.6	8.5	9.6	10.9	12.4	14.1
1: 4	16	6.9	7.7	8.7	9.8	11.1	12.6	14.5
1: 5	17	7.0	7.9	8.9	10.0	11.4	12.9	14.8
1: 6	18	7.2	8.1	9.1	10.2	11.6	13.2	15.1
1: 7	19	7.3	8.2	9.2	10.4	11.8	13.5	15.4
1: 8	20	7.5	8.4	9.4	10.6	12.1	13.7	15.7
1: 9	21	7.6	8.6	9.6	10.9	12.3	14.0	16.0
1:10	22	7.8	8.7	9.8	11.1	12.5	14.3	16.4
1:11	23	7.9	8.9	10.0	11.3	12.8	14.6	16.7
2: 0	24	8.1	9.0	10.2	11.5	13.0	14.8	17.0
2: 1	25	8.2	9.2	10.3	11.7	13.3	15.1	17.3
2: 2	26	8.4	9.4	10.5	11.9	13.5	15.4	17.7
2: 3	27	8.5	9.5	10.7	12.1	13.7	15.7	18.0
2: 4	28	8.6	9.7	10.9	12.3	14.0	16.0	18.3
2: 5	29	8.8	9.8	11.1	12.5	14.2	16.2	18.7


**Weight-for-age GIRLS
Birth to 5 years (z-scores)**




**World Health
Organization**

Year: Month	Months	-3 SD	-2 SD	-1 SD	Median	1 SD	2 SD	3 SD
2: 6	30	8.9	10.0	11.2	12.7	14.4	16.5	19.0
2: 7	31	9.0	10.1	11.4	12.9	14.7	16.8	19.3
2: 8	32	9.1	10.3	11.6	13.1	14.9	17.1	19.6
2: 9	33	9.3	10.4	11.7	13.3	15.1	17.3	20.0
2:10	34	9.4	10.5	11.9	13.5	15.4	17.6	20.3
2:11	35	9.5	10.7	12.0	13.7	15.6	17.9	20.6
3: 0	36	9.6	10.8	12.2	13.9	15.8	18.1	20.9
3: 1	37	9.7	10.9	12.4	14.0	16.0	18.4	21.3
3: 2	38	9.8	11.1	12.5	14.2	16.3	18.7	21.6
3: 3	39	9.9	11.2	12.7	14.4	16.5	19.0	22.0
3: 4	40	10.1	11.3	12.8	14.6	16.7	19.2	22.3
3: 5	41	10.2	11.5	13.0	14.8	16.9	19.5	22.7
3: 6	42	10.3	11.6	13.1	15.0	17.2	19.8	23.0
3: 7	43	10.4	11.7	13.3	15.2	17.4	20.1	23.4
3: 8	44	10.5	11.8	13.4	15.3	17.6	20.4	23.7
3: 9	45	10.6	12.0	13.6	15.5	17.8	20.7	24.1
3:10	46	10.7	12.1	13.7	15.7	18.1	20.9	24.5
3:11	47	10.8	12.2	13.9	15.9	18.3	21.2	24.8
4: 0	48	10.9	12.3	14.0	16.1	18.5	21.5	25.2
4: 1	49	11.0	12.4	14.2	16.3	18.8	21.8	25.5
4: 2	50	11.1	12.6	14.3	16.4	19.0	22.1	25.9
4: 3	51	11.2	12.7	14.5	16.6	19.2	22.4	26.3
4: 4	52	11.3	12.8	14.6	16.8	19.4	22.6	26.6
4: 5	53	11.4	12.9	14.8	17.0	19.7	22.9	27.0
4: 6	54	11.5	13.0	14.9	17.2	19.9	23.2	27.4
4: 7	55	11.6	13.2	15.1	17.3	20.1	23.5	27.7
4: 8	56	11.7	13.3	15.2	17.5	20.3	23.8	28.1
4: 9	57	11.8	13.4	15.3	17.7	20.6	24.1	28.5
4:10	58	11.9	13.5	15.5	17.9	20.8	24.4	28.8
4:11	59	12.0	13.6	15.6	18.0	21.0	24.6	29.2
5: 0	60	12.1	13.7	15.8	18.2	21.2	24.9	29.5

WHO Child Growth Standards

Length-for-age BOYS Birth to 2 years (z-scores)		 World Health Organization						
Year: Month	Months	-3 SD	-2 SD	-1 SD	Median	1 SD	2 SD	3 SD
0: 0	0	44.2	46.1	48.0	49.9	51.8	53.7	55.6
0: 1	1	48.9	50.8	52.8	54.7	56.7	58.6	60.6
0: 2	2	52.4	54.4	56.4	58.4	60.4	62.4	64.4
0: 3	3	55.3	57.3	59.4	61.4	63.5	65.5	67.6
0: 4	4	57.6	59.7	61.8	63.9	66.0	68.0	70.1
0: 5	5	59.6	61.7	63.8	65.9	68.0	70.1	72.2
0: 6	6	61.2	63.3	65.5	67.6	69.8	71.9	74.0
0: 7	7	62.7	64.8	67.0	69.2	71.3	73.5	75.7
0: 8	8	64.0	66.2	68.4	70.6	72.8	75.0	77.2
0: 9	9	65.2	67.5	69.7	72.0	74.2	76.5	78.7
0:10	10	66.4	68.7	71.0	73.3	75.6	77.9	80.1
0:11	11	67.6	69.9	72.2	74.5	76.9	79.2	81.5
1: 0	12	68.6	71.0	73.4	75.7	78.1	80.5	82.9
1: 1	13	69.6	72.1	74.5	76.9	79.3	81.8	84.2
1: 2	14	70.6	73.1	75.6	78.0	80.5	83.0	85.5
1: 3	15	71.6	74.1	76.6	79.1	81.7	84.2	86.7
1: 4	16	72.5	75.0	77.6	80.2	82.8	85.4	88.0
1: 5	17	73.3	76.0	78.6	81.2	83.9	86.5	89.2
1: 6	18	74.2	76.9	79.6	82.3	85.0	87.7	90.4
1: 7	19	75.0	77.7	80.5	83.2	86.0	88.8	91.5
1: 8	20	75.8	78.6	81.4	84.2	87.0	89.8	92.6
1: 9	21	76.5	79.4	82.3	85.1	88.0	90.9	93.8
1:10	22	77.2	80.2	83.1	86.0	89.0	91.9	94.9
1:11	23	78.0	81.0	83.9	86.9	89.9	92.9	95.9
2: 0	24	78.7	81.7	84.8	87.8	90.9	93.9	97.0

WHO Child Growth Standards

Length-for-age GIRLS Birth to 2 years (z-scores)		 World Health Organization						
Year: Month	Months	-3 SD	-2 SD	-1 SD	Median	1 SD	2 SD	3 SD
0: 0	0	43.6	45.4	47.3	49.1	51.0	52.9	54.7
0: 1	1	47.8	49.8	51.7	53.7	55.6	57.6	59.5
0: 2	2	51.0	53.0	55.0	57.1	59.1	61.1	63.2
0: 3	3	53.5	55.6	57.7	59.8	61.9	64.0	66.1
0: 4	4	55.6	57.8	59.9	62.1	64.3	66.4	68.6
0: 5	5	57.4	59.6	61.8	64.0	66.2	68.5	70.7
0: 6	6	58.9	61.2	63.5	65.7	68.0	70.3	72.5
0: 7	7	60.3	62.7	65.0	67.3	69.6	71.9	74.2
0: 8	8	61.7	64.0	66.4	68.7	71.1	73.5	75.8
0: 9	9	62.9	65.3	67.7	70.1	72.6	75.0	77.4
0:10	10	64.1	66.5	69.0	71.5	73.9	76.4	78.9
0:11	11	65.2	67.7	70.3	72.8	75.3	77.8	80.3
1: 0	12	66.3	68.9	71.4	74.0	76.6	79.2	81.7
1: 1	13	67.3	70.0	72.6	75.2	77.8	80.5	83.1
1: 2	14	68.3	71.0	73.7	76.4	79.1	81.7	84.4
1: 3	15	69.3	72.0	74.8	77.5	80.2	83.0	85.7
1: 4	16	70.2	73.0	75.8	78.6	81.4	84.2	87.0
1: 5	17	71.1	74.0	76.8	79.7	82.5	85.4	88.2
1: 6	18	72.0	74.9	77.8	80.7	83.6	86.5	89.4
1: 7	19	72.8	75.8	78.8	81.7	84.7	87.6	90.6
1: 8	20	73.7	76.7	79.7	82.7	85.7	88.7	91.7
1: 9	21	74.5	77.5	80.6	83.7	86.7	89.8	92.9
1:10	22	75.2	78.4	81.5	84.6	87.7	90.8	94.0
1:11	23	76.0	79.2	82.3	85.5	88.7	91.9	95.0
2: 0	24	76.7	80.0	83.2	86.4	89.6	92.9	96.1

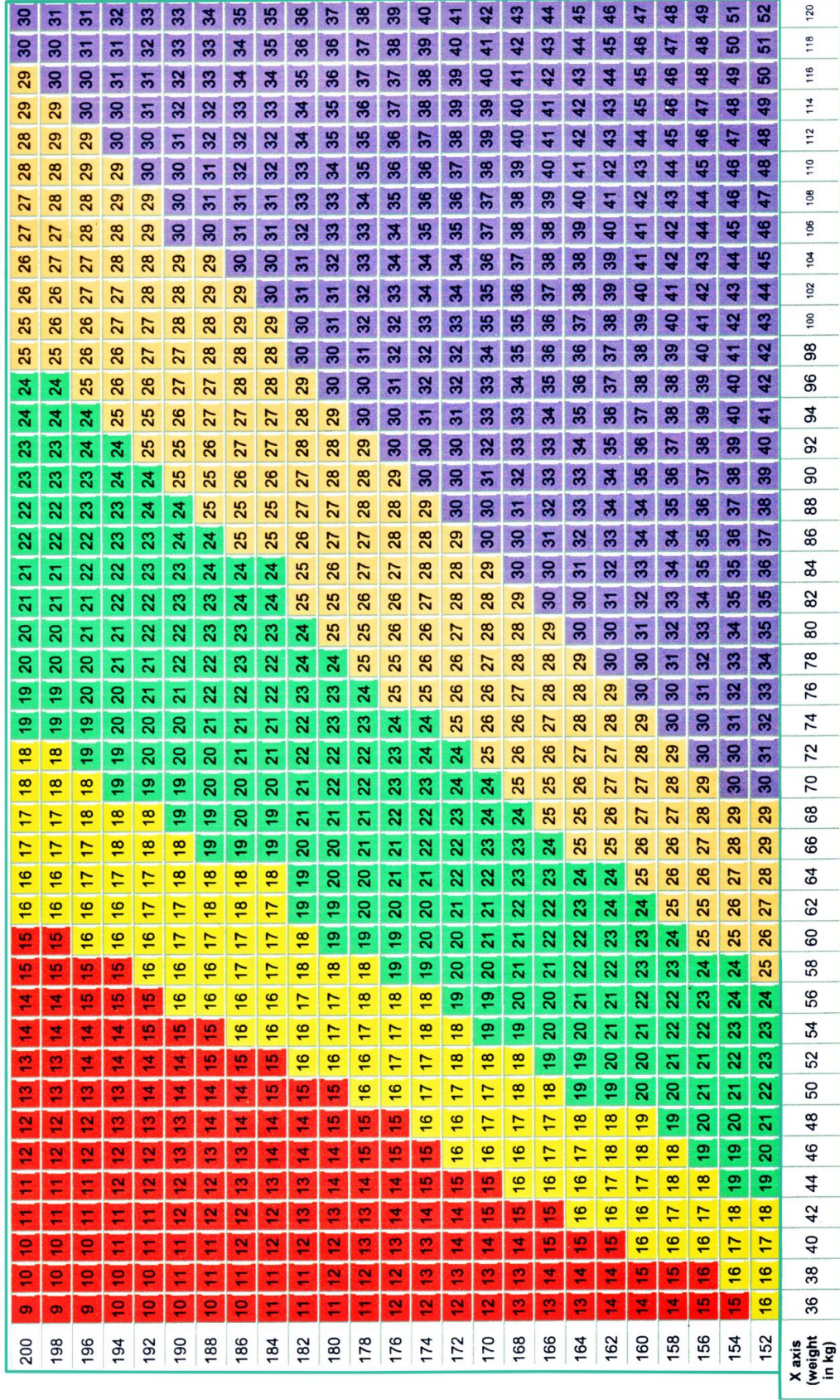
WHO Child Growth Standards

Body mass index (BMI) = Weight (kg) / Height (m)²


- Red shows severe acute malnutrition (BMI < 16.0).
- Yellow shows moderate acute malnutrition (BMI 16.0–18.5).
- Green shows adequate weight for height (BMI 18.5–24.9).
- Orange shows overweight (BMI 25.0–29.9).
- Purple shows obesity (BMI > 30).

1. Find the client's height in the left-hand column, or y axis (1 metre = 100 cm).
2. Find the client's weight in the bottom row (x axis).
3. Find the point where the two lines meet. This is the client's BMI for that height and weight.

Y axis (height in cm)



Algorithm of Malnutrition for Adults, Pregnant and Postpartum Mothers

ASK	LOOK, FEEL & ASSESS	CATEGORY OF MALNUTRITION	CLASSIFICATION	TREATMENT/CARE PLAN
<ul style="list-style-type: none"> Active TB on treatment? Diarrhea for more than 14 Days? Other chronic OI or Malignancy? <p>Ask (or check records):</p> <ol style="list-style-type: none"> Has client lost weight in the past month/past visit? Has the client had: <ul style="list-style-type: none"> Active TB (on treatment)? Diarrhoea for more than 14 days? Other chronic OI or malignancy? (e.g. oesophageal infections) Mouth sore/oral thrush Has the client had noticeable changes on body composition/ fat distribution Thinning of limbs and face Fat distribution on the limbs, breasts, stomach region, back/hump Has the client experienced the following? <ul style="list-style-type: none"> Nausea/vomiting Diarrhea Persistent fatigue Poor appetite 	<p>LOOK, FEEL & ASSESS</p> <ol style="list-style-type: none"> Check for oedema on both feet. In adults, rule out other causes of symmetrical oedema (pre-eclampsia, severe proteinuria [nephritic syndrome], nephritis, acute filariasis, heart failure & wet beri- beri). Measure weight (kg) & height (cm). <ul style="list-style-type: none"> Compute BMI (adults) Compute BMI Z-score (adolescents) <p>OR</p> <ul style="list-style-type: none"> Measure MUAC (adults/adolescents) <ol style="list-style-type: none"> Use MUAC only for pregnant/lactating women and/or adults who cannot stand straight. Examine for conditions that cause secondary malnutrition Examine/observe: <ul style="list-style-type: none"> Severe anemia Severe dehydration Vomiting Bilateral oedema+++ High/low body temperature Acute respiratory infection (e.g. TB) Severe diarrhea Extensive infection Altered mental status Very weak, apathetic unconscious 	<p>Severe Acute Malnutrition (SAM)</p> <p>OR</p> <p>Moderate Acute Malnutrition (MAM)</p> <p>SEVERE ANAEMIA</p>	<p>WITH MEDICAL COMPLICATION</p> <p>AND/OR</p> <p>FAILS APPETITE TEST</p>	<p>INPATIENT THERAPEUTIC CARE (ITC)</p>
		<p>Severe Acute Malnutrition (SAM)</p> <p>OR</p> <p>Moderate Acute Malnutrition (MAM)</p>	<p>NO MEDICAL COMPLICATION</p> <p>AND</p> <p>PASSES APPETITE TEST</p>	<p>OUTPATIENT THERAPEUTIC CARE (OTC)</p>
		<p>At Risk (Mild) or Normal Nutrition</p>	<p>No Medical Complication</p> <p>NORMAL Nutritional Status</p>	<p>NUTRITION CONSELING/EDUCATION</p>

RUTF dosing chart

Acute Malnutrition SAM OR MAM			
Weight (kg)	Sachets /day	Sachets /week	Sachets/ two weeks
3.0-3.4	1¼	9	18
3.5-3.9	1½	11	22
4.0-5.4	2	14	28
5.5-6.9	2 ½	18	36
7.0-8.4	3	21	42
8.5-9.4	3½	25	50
9.5-10.4	4	28	56
10.5-11.9	4½	32	64
≥ 12.0	5	35	70
14 years & above	6	42	84

Annex 7.6: Instructions to make a cloth breast model

Use two socks: one sock in a light brown or other colour resembling skin to show the outside of the breast, and the other sock white to show the inside of the breast.

Skin-colour sock

Around the heel of the sock, sew a circular running stitch (= purse string suture) with a diameter of 4 cm. Draw it together to 16 cm diameter and stuff it with paper or other substance to make a "nipple". Sew a few stitches at the base of the nipple to keep the paper in place. Use a felt tip pen to draw an areola around the nipple.

White sock

On the heel area of the sock, use a felt tip pen to draw a simple structure of the breast: alveoli, ducts, and nipple pores. Be sure the main ducts will be in the areola area.

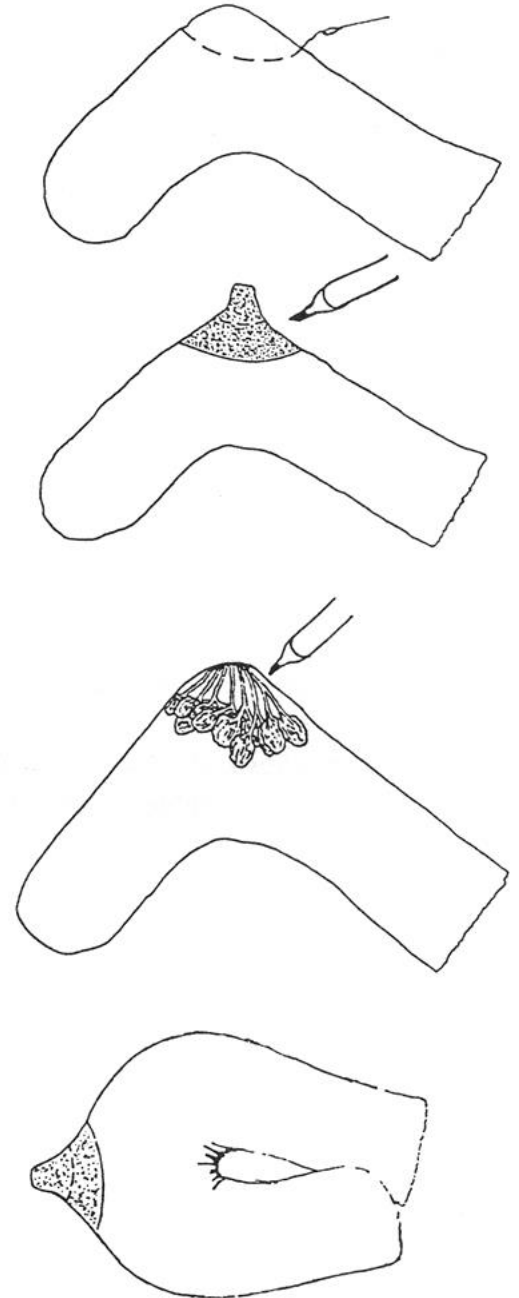
Putting the two socks together

Stuff the heel of the white sock with anything soft. Hold the two ends of the sock together at the back and form the heel to the size and shape of a breast. Various shapes of breasts can be shown.

Pull the brown sock over the formed breast so that the nipple is over the pores.

Making two breasts

If two breasts are made, they can be worn over clothing to demonstrate positioning and attachment. Hold them in place with an old nylon stocking tied around the chest. The correct position of the fingers for hand expression and massage can also be demonstrated.



Annex: 7.7 Quality Improvement Tools

Sample Documentation Journal for QI Activities

Name of the facility: _____ District: _____ Region: _____

Team leader: _____ Team members: _____

Start date for improvement project: _____ End date: _____

Part 1: Description of situation

Improvement objective _____ _____	Indicator for the objective
--	------------------------------------

Description of problem

Briefly describe the problem being addressed and gaps between the current situation and your improvement objectives. State the differences between the MOH standard of care and the current practices. Also describe some of the challenges with the current situation.

Part 2: Changes Worksheet — QI Team Activities

Please list below the changes that the team has tried in order to achieve the improvement objective. Write all changes, whether effective or not. Also note when each change was started and when it ended (where applicable) to enable you to annotate the results.

Planned and tested changes In the space below, list all of the changes that you are implementing to address the improvement objective. Write one to two sentences to briefly describe the tested change.	Start date DD/MM/YY	End date (if applicable) DD/MM/YY	Was any improvement registered? (Yes/No)	Comments Note any potential reasons why the change did or did not yield improvement; also note any change in indicator value observed related to this change.
1.				
2.				
3.				
4.				

Part 3: Graph Template – Annotated Results

Use the graph below to document your progress. Indicate the value of the numerator and denominator.

TITLE

Indicator Value

Time	0	1	2	3	4	5	6	7	8	9	10	11	12
Numerator													
Denominator													
%													

Notes on the indicators. Write down any additional comments you may have on the performance of indicators. Write anything derived from the change's worksheet and the graph template that might explain the performance trends of the improvement objective.

Notes on other observed effects (lessons learnt). Please write here any effects (positive or negative) you are currently observing as a result of the quality improvement effort, such as comments from patients, changes in your performance or motivation, improved efficiency, or the survival story of a sick patient. You may use your notes to tell the complete story at the next learning session(s).

Action Plan Template

Action Plan for Integrating NACS into Routine Health Services

Facility _____

Date prepared _____

NO	Improvements or Next Steps	Activities to Achieve the Improvement	Responsible Person(s)	Dates

Template PDSA worksheet

Template: PDSA Worksheet

Objective:

.....
.....
.....



1. Plan: Plan the test, including a plan for collecting data.

Questions and predictions:

-
-

Who, what, where, when:

Plan for collecting data:



2. Do: Run the test on a small scale.

Describe what happened. What data did you collect? What observations did you make?



3. Study: Analyze the results and compare them to your predictions.

Summarize and reflect on what you learned:



4. Act: Based on what you learned from the test, make a plan for your next step.

Determine what modifications you should make – adapt, adopt, or abandon:

Annex 7.8: Checklists for clinical practices and Food Demos

7.8.1 Antenatal Checklist

All the following should be discussed with all pregnant women by 32 weeks of pregnancy. The health worker discussing the information should sign and date the form.

Name

Expected date of birth

Topic	Discussed or note if mother declined discussion	Signed	Date
Importance of exclusive breastfeeding to the baby (protects against many illnesses such as chest infections, diarrhoea, ear infections; helps baby to grow and develop well; all baby needs for the first six months, changes with baby's needs, babies who are not breastfed are at higher risk of illness)			
Importance of breastfeeding to the mother (protects against breast cancer and hip fractures in later life, helps mother form close relationship with the baby, artificial feeding costs money)			
Importance of skin-to-skin contact immediately after birth (keeps baby warm and calm, promotes bonding, helps breastfeeding get started)			
Importance of good positioning and attachment (good positioning and attachment helps the baby to get lots of milk, and for mother to avoid sore nipples and sore breasts. Help to learn how to breastfeed is available from)			
Getting feeding off to a good start – baby-led feeding; – knowing when baby is getting enough milk; – importance of rooming-in/keeping baby nearby; - problems with using artificial teats, pacifiers.			
No other food or drink needed for the first 6 months – only mother's milk Importance of continuing breastfeeding after 6 months while giving other foods			
Risks and hazards of not breastfeeding – loss of protection from illness and chronic diseases; – contamination, errors of preparation; – costs; – difficulty in reversing the decision not to breastfeed			

7.8.2 Breastfeed Observation Aid and instructions

Mother's name: _____ Date: _____

Baby's name: _____ Baby's age: _____

Signs that breastfeeding is going well

GENERAL

Mother:

- Mother looks healthy
- Mother relaxed and comfortable
- Signs of bonding between mother and baby

Baby:

- Baby looks healthy
- Baby calm and relaxed
- Baby reaches or roots for breast if hungry

BREASTS

- Breasts look healthy
- No pain or discomfort
- Breast well supported with fingers away from nipple
- Nipple protractile

BABY'S POSITION

- Baby's head and body in line
- Baby held close to mother's body F Baby's whole body supported
- Baby approaches breast, nose to nipple

BABY'S ATTACHMENT

- More areola seen above baby's top lip F Baby's mouth open wide
- Lower lip turned outwards
- Baby's chin touches breast

SUCKLING

- Slow, deep sucks with pauses
- Cheeks round when suckling
- Baby releases breast when finished
- Mother notices signs of oxytocin reflex

Signs of possible difficulty

Mother:

- Mother looks ill or depressed
- Mother looks tense and uncomfortable
- No mother/baby eye contact

Baby:

- Baby looks sleepy or ill
- Baby is restless or crying
- Baby does not reach or root

- Breasts look red, swollen, or sore
- Breast or nipple painful
- Breasts held with fingers on areola
- Nipple flat, not protractile

- Baby's neck and head twisted to feed
- Baby not held close
- Baby supported by head and neck only
- Baby approaches breast, lower lip/chin to nipple

- More areola seen below bottom lip
- Baby's mouth not open wide
- Lips pointing forward or turned in
- Baby's chin not touching breast

- Rapid shallow sucks
- Cheeks pulled in when suckling
- Mother takes baby off the breast
- No signs of oxytocin reflex noticed

The breastfeed observation instructions

- The Breastfeed Observation Aid can help health workers remember what to look for when observing and can help to recognize difficulties.
- The aid is divided into sections, each of which lists signs that breastfeeding is going well or signs of possible difficulty.
- A tick can be marked if the sign is observed.
- If all the ticks are on the left-hand side, then breastfeeding is probably going well. If there are ticks on the right-hand side, there may be a difficulty that needs to be addressed.

Look at the mother in general:	<ul style="list-style-type: none"> ▪ What do you notice about the mother – her age, general appearance, if she looks healthy or ill, happy or sad, comfortable or tense? ▪ Do you see signs of bonding between mother and baby ▪ Eye contact, smiling, held securely with confidence, or no eye contact and a limp hold?
Look at the baby in general: How does the baby respond	<ul style="list-style-type: none"> ▪ What do you notice about the baby ▪ general health, alert or sleepy, calm or crying, and any conditions that could affect feeding such as a blocked nose or cleft palate? ▪ looking for the breast when hungry, close to mother or pulling away?
As the mother prepares to feed her baby, what do you notice about her breasts?	<ul style="list-style-type: none"> ▪ How do her breasts and nipples look ▪ healthy or red, swollen or sore? ▪ Does she say that she has pain or act as if she is afraid to feed the baby? ▪ How does she hold her breast for a feed? Are her fingers in the way of the baby taking a large mouthful of the breast?
Look at the position of the baby for breastfeeding:	<ul style="list-style-type: none"> ▪ How is the baby positioned ▪ head and body (spine) in line, body held close, body supported, facing the breast, and approaching nose to nipple? ▪ the baby's body twisted, not close, unsupported, and chin to nipple?
Observation	<ul style="list-style-type: none"> ▪ more areola above the baby's top lip than below, mouth open wide, ▪ lower lip turned out, and ▪ chin touching the breast?
Observe the baby's suckling:	<ul style="list-style-type: none"> ▪ Can you see slow deep sucks? You may hear gentle swallowing or clicks and gulps and see the baby's cheeks are rounded and not drawn inward during a feed. ▪ Notice how the feed finishes - does baby releases the breast by himself or herself and look contented?
Ask the mother how breastfeeding feels to her:	<ul style="list-style-type: none"> ▪ Can she feel any signs of oxytocin reflex, e.g. leaking or tingling? ▪ Is there any discomfort or pain?
Signs that you can see are:	<ul style="list-style-type: none"> ▪ The mother is looking in a loving way at her baby ▪ The baby looks healthy, calm, and relaxed. ▪ Her breasts look healthy. ▪ She is not supporting her breast. Her breast may be pushed out of line by her bra or a top that does not open wide.

Baby's position:	<ul style="list-style-type: none"> ▪ Baby's head and body are in a line. ▪ Baby is not held close ▪ Baby is not well supported. ▪ Baby is facing mother.
Baby's attachment:	<ul style="list-style-type: none"> ▪ This mother has a large areola. However, it looks like the baby does not have a large mouthful of breast. ▪ The baby's mouth is open wide but not wide enough. ▪ The baby's lower lip is turned out. ▪ The baby's chin does not touch the breast.
<p>When talking to the mother remember to say something positive before suggesting changes. Examples of positive signs you could point out to the mother:</p>	<ul style="list-style-type: none"> ▪ Her baby looks thriving and happy breastfeeding. ▪ She is looking lovingly at her baby. ▪ Baby's body is held in a line and facing mother.
<p>Some suggestions you could offer to the mother:</p>	<ul style="list-style-type: none"> ▪ You could suggest that the mother re-position and attach her baby again for more effective suckling. ▪ It may help if she takes off her top and bra so that the breast is less constrained.
<p>She can then easily support her breast with her one hand, use the other hand, and arm to hold the baby close, so that the baby can take a large mouthful of breast.</p>	<ul style="list-style-type: none"> ▪ Yes ▪ No

7.8.3 Counselling skills checklist

Name of counsellor:

Name of observer:

Date of visit:

Did the counsellor	<i>(√ for Yes and × for No)</i>
<p><i>Use listening and learning skills</i></p> <ul style="list-style-type: none"> → Keep the head level with mother/parent/caregiver? → Pay attention (eye contact)? → Remove barriers (tables and notes)? → Take time? Allow the mother/parent/caregiver time to talk? → Use appropriate touch? → Ask open questions? → Use responses and gestures that showed interest? → Reflect back what the mother/parent/caregiver said? → Empathize – showing that he or she understood how the mother/parent/caregiver feels? → Avoid using words that sound judging? 	
<p><i>Use skills for building confidence and giving support</i></p> <ul style="list-style-type: none"> → Accept what the mother/parent/caregiver thinks and feels? → Recognize and praise what the mother/parent/caregiver and baby are doing well? → Give practical help? → Give a little, relevant information? → Use simple language? → Make one or two suggestions, not commands? 	
<p>COUNSELLING SKILLS</p> <p><i>Listening and learning skills</i></p> <ul style="list-style-type: none"> • <i>Use helpful non-verbal communication</i> • <i>Ask open questions</i> • <i>Use responses and gestures showing interest</i> • <i>Reflect back what the mother/parent/caregiver says</i> • <i>Empathize – show you understand how the mother/parent/caregiver feels</i> • <i>Avoid using judging words</i> <p><i>Building confidence and giving support skills</i></p> <ul style="list-style-type: none"> • <i>Accept what a mother/parent/caregiver thinks and feels</i> • <i>Recognize and praise what a mother/parent/caregiver and baby are doing well</i> • <i>Give practical help</i> • <i>Give specific, relevant information</i> • <i>Use simple language</i> • <i>Make one or two suggestions, not commands</i> 	

7.8.4: Dietary Diversity Form (Food Groups)

FOOD GROUP	EXAMPLES
Breast milk	Breast milk (breastfeeding, expressed breast milk or breast milk from banks)
Grains, roots and tubers	Millet, Sorghum, Rice, Wheat, Maize, Cassava, Potatoes, yams
Legumes and nuts	Beans, Peas, Soya beans, Groundnuts, Cashew nuts, chickpeas, lentils
Dairy and dairy products	Milk, cheese, yoghurt, butter, ghee
Meat and meat products	Beef, fish, poultry, pork, liver and other organ meats
Eggs and egg products	Eggs for; chicken, ducks, pigeons and turkeys
Vitamin A rich fruits and vegetables	Carrots, paw paws, mangoes, oranges, tangerines, Kale, spinach, Broccoli
Other fruits And vegetables	Passion fruits, pineapples, guavas, lemons, amaranths, Cabbages, dark green leafy vegetables etc.

7.8.5: Birth Practices Checklist

Birth Practices Checklist

Mother's name: _____

Date and time of infant's birth: _____

Type of birth: _____

___ Vaginal : Natural ___ Vacuum ___ Forceps ___

___ C-section with epidural/spinal

___ C-section with general anaesthetic

Skin-to-skin contact:

Time started: _____ Time ended: _____

Total duration _____

Time of baby's first breastfeed:

Notes:

Skin to skin contact immediately after birth:

- keeps the baby warm;
- calms mother and baby and regulates breathing and heart rate;
- colonises the baby with the mother's normal body bacteria;
- reduces infant crying, thus reducing stress and energy use;
- allows the baby to find the breast and self-attach to start feeding;
- facilitates bonding between the mother and her baby.

No additional foods or fluids are needed by the newborn baby
- just breast milk

7.8.6: Milk Expression Hand-out

Milk Expression hand out

Your milk is very important to your baby. It is useful to express your milk if: - your baby cannot feed at the breast:

- you are away from your baby;
- you want drops of milk to encourage your baby to suck;
- your breasts are overfull or you have a blocked duct;
- you want some hind milk to rub on sore nipples, and other reasons.

You can help your milk to flow by:

- sitting comfortably, relaxed and thinking about your baby;
 - warming your breast;
 - massaging or stroking your breast, and rolling your nipple between your fingers;
- having your back massaged.

Feel back from your nipple to find a place where your breast feels different. This may feel like knots on a string or like peas in a pod. This is usually a good place to put pressure when expressing. Put your thumb on one side of the breast and 2-3 fingers opposite.

Compress the breast over the ducts. Try pressing your thumb and fingers back towards your chest, and then press your thumb and fingers towards each other, moving the milk towards the nipple. Release and repeat the pressure until the milk starts to come.

Repeat in all parts of the breast. Move your fingers around the breast to compress different ducts. Move to the other breast when the milk slows. Massage your breast occasionally as you move your hand around. If you are expressing to clear a blocked duct, you only need to express in the area that is blocked.

It takes practice to get large volumes of milk. First milk (colostrum) may only come in drops. These are precious to your baby.

How often to express depends on the reason for expressing. If your baby is very young and not feeding at the breast, you will need to express every 2-3 hours.

It is important to have clean hands and clean containers for the milk. Discuss milk storage if needed.

These points are suggestions not rules.

- Find what works best for you.
- Expressing should not hurt and to ask for help if it does.
- Ask if you have any questions.

7.8.7: How to feed a baby by Cup

Why cup feeding is recommended:

- It is pleasant for the baby – there are no invasive tubes in his or her mouth. - It allows the baby to use his or her tongue and to learn tastes.
- It stimulates the baby's digestion.
- It encourages coordinated breathing/suck/swallow.
- The baby needs to be held close and eye-contact is possible.
- It allows baby to control the amount and rate of feeding.
- A cup is easier to keep clean than a bottle and teat.
- It may be seen as a transitional method on the way to breastfeeding rather than as a 'failure' of breastfeeding.

HOW TO FEED A BABY BY CUP

Sit the baby upright or semi-upright on your lap; support the baby's back, head and neck. It helps to wrap the baby firmly with a cloth, to help support his or her back, and to keep his or her hands out of the way.

Hold the small cup of milk to the baby's lips.

The cup rests lightly on the baby's lower lip, and the edges of the cup touch the outer part of the baby's upper lip.

Tip or tilt the cup so that the milk just reaches the baby's lips.

The baby becomes alert, and opens his or her mouth and eyes.

- A preterm baby starts to take the milk into his or her mouth with his or her tongue.
- A full term or older baby sucks the milk, spilling some of it.

DO NOT POUR the milk into the baby's mouth. Just hold the cup to the baby's lips and let him or her take it himself or herself.

When the baby has had enough, the baby closes his or her mouth and will not take any more. If the baby has not taken the calculated amount, he or she may take more next time, or you may need to feed the baby more often.

Measure the baby's intake over 24 hours - not just at each feed.

7.8.8: Regulations checklist

#	Observation	Response Yes/No
1	Is there any observable/written hospital policy prohibiting giving free formula samples to mothers?	
2	Did you find evidence of any promotional materials from infant and child food (BMS) manufacturers?	
3	Ask any of the health facility staff if they have seen an infant formula (BMS) company representative visiting their facility in the last 5 years or since they have been there. Whichever is the longer period)	
4	On the maternity ward, did you observe any baby being given a feeding bottle or teat?	
5	Did you find any evidence of use of infant formula or other artificial feeds in any part of the health facility?	
6	Ask any staff member: if a baby/child in hospital requires infant formula how is it obtained or procured. Write answer in the space on the right here.	
7	Is the staff member you talked to aware about the Uganda Regulations on Marketing of Infant and Young Child Foods?	
8	In your view, does this health facility comply with the Regulations?	
Comments		

7.8.9: Food Intake job aid and reference tool

Enter in the Yes column if the practice is in place.

Enter your initials if a message is given (see FOOD INTAKE REFERENCE TOOL, 6-23 MONTHS for the message).

FOOD INTAKE JOB AID, 6-23 MONTHS

Child's name

Date of birth

Age of child at visit

Feeding practice

Yes / number where relevant

Key Message given

Growth curve rising

Child received breast milk

How many meals of a thick consistency did the child eat yesterday? (use consistency photos as needed)

Child ate an animal-source food yesterday (meat/fish/offal/bird/eggs)?

Child ate a dairy product yesterday

Child ate pulses, nuts or seeds yesterday

Child ate a dark-green or yellow vegetable or yellow fruit yesterday

Child ate sufficient number of meals and snacks yesterday, for his/her age

Quantity of food eaten at main meal yesterday appropriate for child's age

Mother assisted the child at meals times

Child took any vitamin or mineral supplements

Child ill or recovering from an illness

FOOD INTAKE REFERENCE TOOL, 6-23 MONTHS

Feeding Practice

Ideal Feeding Practice

Key Messages to help counsel mothers

Growth curve rising

Look at the shape of the growth curve of the child: is the child growing?

Child received breastmilk

Yes

Breastfeeding for 2 years of age or longer helps a child to develop and grow strong and healthy

How many meals of a thick consistency did the child eat yesterday (use consistency photos as needed)	3 meals	Foods that are thick enough to stay in the spoon give more energy to the child
Child ate an animal-source food yesterday (meat/fish/offal/bird/eggs)?	Animal-source foods should be eaten daily	Animal-source foods are especially good for children to help them grow strong and lively
Child ate a dairy product yesterday	Try to give dairy products daily	Animal-source foods are especially good for children to help them grow strong and lively
Child ate pulses, nuts or seeds yesterday	If meat is not eaten pulses or nuts should be eaten daily, with an iron enhancer such as a vitamin C rich food	Peas, beans, lentils, nuts and seeds are good for children
Child ate a dark-green or yellow vegetable or yellow fruit yesterday	A dark-green or yellow vegetable or yellow fruit should be eaten daily	Dark-green leaves and yellow-coloured fruits and vegetables help the child to have healthy eyes and fewer infections
Child ate sufficient number of meals and snacks yesterday, for his/her age?	Child 6 – 8 months: 2 – 3 meals plus 1 – 2 snacks if hungry Child 9 – 23 months: 3 – 4 meals plus 1 – 2 snacks if hungry	A growing child needs 2 – 4 meals a day plus 1 – 2 snacks if hungry: give a variety of foods
Quantity of food eaten at main meal yesterday appropriate for child's age	Child 6 – 8 months: gradually increased to approx. ½ cup at each meal Child 9 – 11months: approx. ½ cup at each meal Child 12 – 23 months: approx. ¾ – 1 cup at each meal	A growing child needs increasing amounts of food
Mother assisted the child at meals times	Yes, assists with learning to eat	A young child needs to learn to eat: encourage and give help... with lots of patience
Child took any vitamin or mineral supplements	Vitamin and mineral supplements may be needed if child's needs are not met by food intake	Explain how to use vitamin and mineral supplements if they are needed
Child ill or recovering from an illness	Continue to eat and drink during illness and recovery	Encourage the child to drink and eat during illness and provide extra food after illness to help them recover quickly