

The United Republic of Tanzania



Ministry of Health, Community Development,
Gender, Elderly and Children

Nutrition Assessment, Counselling and Support (NACS)



REFERENCE MANUAL
for Training Health Facility-Based Service Providers
2016

For further information, please contact:

The Managing Director
Tanzania Food and Nutrition Centre
22 Barack Obama Avenue
S.L.P. 977
Dar es Salaam
Tanzania
Tel: +255 (0) 22 2118137/9
Fax: +255 (0) 22 2116713
Email: info@lishe.org
Website: www.lishe.org

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
ANC	antenatal care
ART	antiretroviral therapy
ARV	antiretroviral medication
BMI	body mass index
CD4	cluster of differentiation 4
cm	centimetre(s)
CNAs	Critical Nutrition Actions
COUNSENUTH	Centre for Counselling, Nutrition and Health Care
CTC	care and treatment clinic
ES/L/FS	economic strengthening, livelihood and food security
FANTA	Food and Nutrition Technical Assistance III Project (FHI 360)
FBF	fortified-blended food
g	gram(s)
HBC	home-based care
HIV	human immunodeficiency virus
IP	implementing partner
IU	international unit
IV	intravenous
kcal	kilocalorie(s)
kg	kilogram(s)
l	litre(s)
m	metre(s)
m ²	metre(s) squared
MAM	moderate acute malnutrition
mcg	microgram(s)
mg	milligram(s)
ml	millilitre(s)
MOHCDGEC	Ministry of Health, Community Development, Gender, Elderly and Children
MUAC	mid-upper arm circumference
MVC	most vulnerable child(ren)
NACS	nutrition assessment, counselling and support
NGT	nasogastric tube
OPD	outpatient department
PITC	Provider-initiated (HIV) testing and counselling
PMTCT	prevention of mother-to-child transmission of HIV
RDA	Recommended Dietary Allowance

RUTF	ready-to-use therapeutic food
SAM	severe acute malnutrition
SD	standard deviation(s)
TB	tuberculosis
TFNC	Tanzania Food and Nutrition Centre
URC	University Research Co., LLC
USAID	U.S. Agency for International Development
WHZ	weight-for-height z-score
WHO	World Health Organization

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The *Nutrition Assessment, Counselling and Support (NACS) Reference Manual for Training Facility-Based Service Providers* is part of a set of NACS training materials that is a key component of the commitment of the Ministry of Health, Community Development, Gender, Elderly and Children (MOHCDGEC) to build the capacity of health care providers and health facility managers to integrate quality nutrition services into routine care and treatment.

The Tanzania Food and Nutrition Centre (TFNC) and the Food and Nutrition Technical Assistance III Project (FANTA), managed by FHI 360, were at the forefront in developing these materials. The Ministry would like to extend its appreciation to these organizations for their work in standardising nutrition services in clinical and community settings.

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The following people contributed valuable time and expertise to design and refine the NACS package:

Grey Saga, Program Manager, USAID/Tanzania

Mary Materu, Founder, Centre for Counselling, Nutrition and Health Care (COUNSENUTH)

Helen Semu, Nutrition Focal Person, MOHCDGEC

Dr Eric van Praag, Senior Regional Advisor, FHI 360

Zawadiel Melchior Hillu, PMTCT Coordinator, Kilimanjaro Christian Medical Centre (KCMC)

Dr Fadhili Festo Mlagalila, Lecturer, Tumaini University, and Pediatrician, KCMC

Dr Godfrey Braison Mariki, CTC In-charge, Majengo Health Centre

Zohra Lukmanji, Registered Dietician

Grace Muro, Nutrition Manager, World Education, Inc./Tanzania

Dr David Kombo, National Infant Feeding Trainer and Paediatrician, Muhimbili National Hospital

Dr Athuman Mambo Medical Officer, Lindi Regional Hospital

Dr Selemani Msangi, Regional AIDS Control Coordinator, Tanga Regional Hospital

Vumilia Mbugi Nutrition Officer, Mkuranga Medical Centre

Elias Mwinuka, Health Specialist, Compassion International/Tanzania

Janeth Bushiri, M&E Coordinator, Tunajali/Delloite

Theodora Kiwale, Quality Improvement Advisor, Elizabeth Glaser Pediatric AIDS Foundation/Tanzania

Dr Stella Kasindi, Senior Quality Improvement Advisor, University Research Corporation, LLC/Tanzania

TFNC

Dr Godwin Ndossi, former Managing Director
Dr Sabas Kimboka, Director, Community Health Department
Dr Joyceline Kaganda, Acting Managing Director
Francis Modaha, Senior Research Officer, Food Science
Gelagister Gwarasa, Research Officer, Nutrition Training
Hamida Mbilikila, Research Officer, Nutrition Training, Clinician
Luitfruid Nally, Research Officer
Magret Rwenyagira, Research Officer
Bupe Ntoga, Senior Research Officer
Hilda Missano, Retired Director, Nutrition Training
Jamila Mwankemwa, Research Officer, Nutritionist
Anna John Nzagira, Research Officer, Nutritionist, Clinician
Juliet Shine, Research Officer, Nutritionist

FANTA

Dr Anne Swindale, former Project Director
Sandra Remancus, Project Director
Dr Deborah Ash, Program Manager/Tanzania
Wendy Hammond, Project Manager, Nutrition and Infectious Disease
Tumaini Charles, Technical Advisor/Tanzania
Caroline Mshanga, Program Officer/Tanzania
Dr Robert Mwadime, former Regional Nutrition Advisor
Dr Alison Tumilowicz-Torres, former Technical Advisor, Nutrition
Hedwig Deconinck, former Senior Emergency Nutrition Advisor

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FOREWORD

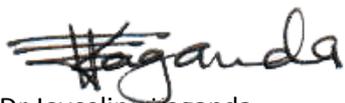
Nutrition has a wide-ranging influence on health. Malnutrition in pregnant and lactating women can lead to irreversible life-long consequences for their infants. Nutrition deficiencies during the first 2 years of life are associated with significant morbidity and mortality and delayed mental and motor development. These deficiencies can impair intellectual performance, reproductive outcomes, overall health status and economic productivity during adolescence and adulthood.

The Tanzanian diet is largely based on cereals, starchy roots and pulses, despite the wide variety of food grown in the country. Rapid urbanisation and imported foods have contributed to higher cereal prices, adding to the economic burden of a large proportion of the population. Various national programmes have been implemented to combat malnutrition and micronutrient deficiencies, but undernutrition is still found in all age groups. In 2014, over one-third of children under 5 were chronically malnourished (stunted) as a result of factors including maternal malnutrition, inadequate infant feeding and poor hygiene and sanitation.¹ At the same time, rising consumption of energy-dense and processed foods in urban areas has increased the prevalence of overweight and obesity.

Malnutrition is closely associated with chronic diseases such as tuberculosis (TB) and HIV, which are significant burdens on health care systems in Tanzania. Although the national HIV prevalence rate among adults decreased from 7.0 percent in 2004 to 5.3 percent in 2014, the country still has approximately 1.5 million people living with HIV.²

Because nutrition is a potential causal factor and an aid to treatment in most illnesses, health care providers need knowledge and skills to help clients improve their nutritional status, manage symptoms and avoid infections. NACS should be a routine component of prevention, care and treatment in health care services.

This training course is an essential step toward the integration of NACS into reproductive and child health services, outpatient departments, paediatric wards and clinics, care and treatment clinics for people with HIV, and TB/HIV clinics in Tanzania. This training complements training in infant and young child feeding, prevention of mother-to-child transmission of HIV, management of acute malnutrition, Essential Nutrition Actions, and quality improvement.



Dr Joyceline Kaganda
Acting Managing Director
Tanzania Food and Nutrition Centre

¹ Tanzania Food and Nutrition Centre (TFNC). 2014. *Tanzania National Nutrition Survey 2014. Final Report*. Dar es Salaam: TFNC.

² Joint United Nations Programme on HIV/AIDS (UNAIDS). 2014. United Republic of Tanzania. Epidemiological Factsheet. Available at <http://www.unaids.org/en/regionscountries/countries/unitedrepublicoftanzania/>.

REFERENCE 1. KEY NUTRITION TERMS

Food is anything edible that provides the body with nutrients.

The role of food in the body:

- Developing, growing, maintaining, replacing and repairing cells and tissues
- Resisting and fighting infections
- Producing energy (warmth), movement and work

Nutrients are chemical substances or components of food that are released during digestion and provide energy to maintain, repair or build body tissues. The body needs six types of nutrients from food: protein, carbohydrates, fat, fibre, vitamins and minerals and water. Nutrients are divided into **macronutrients** (carbohydrates, protein and fat), which are needed in large amounts, and **micronutrients** (vitamins and minerals), which are needed only in small amounts.

Nutrition is the intake of food and drink and the chemical and physical processes that break down the food and release nutrients needed for growth, reproduction, immunity, breathing, work and health.

Malnutrition occurs when food intake does not match the body's needs. Malnutrition includes both undernutrition and overnutrition.

Undernutrition is a result of lack of nutrients caused by an inadequate diet in terms of quantity and quality and/or disease. Undernutrition includes a range of conditions.

- **Acute malnutrition** is caused by a decrease in food consumption and/or illness, resulting in bilateral pitting oedema or wasting. **Wasting** is defined by low mid-upper arm circumference (MUAC) or low weight-for-height z-score (WHZ).
- **Chronic malnutrition** is caused by prolonged or repeated episodes of undernutrition starting before birth, resulting in stunting. **Stunting** is defined by low height-for-age.
- **Micronutrient deficiencies** are a result of reduced micronutrient intake and/or absorption. The most common forms of micronutrient deficiencies are related to iron, vitamin A and iodine deficiency.

Overnutrition is a result of excessive food intake, leading to overweight or obesity.

Nutrition is important for **good health**.

Good nutrition can:

- Help people feel strong physically and mentally and look healthy
- Strengthen the immune system to fight infection
- Help people stay productive and able to do physical activities
- Help prevent wasting
- Improve drug adherence and effectiveness
- Help manage common symptoms of illness and drug side effects

Poor nutrition can:

- Weaken the immune system
- Increase vulnerability to infections
- Reduce the body's ability to recover from infections

REFERENCE 2. NUTRIENT REQUIREMENTS

People should eat a variety of food from the following five food groups every day to increase the chance of getting all the nutrients the body needs:

1. **Cereals, green bananas, roots and tubers** (carbohydrates for energy)
2. **Pulses, nuts and animal-source food** (protein for body building)
3. **Fruits** (vitamins and minerals for protection)
4. **Vegetables** (vitamins and minerals for protection)
5. **Sugar, honey, fats and oils** (extra energy)

Water is also critical for all body functions.

Sugar, honey, fats and oils, as well as salt, should be consumed in moderation to avoid diet-related non-communicable diseases such as diabetes and hypertension).

Energy

Energy needs depend on age, physiological changes such as pregnancy and breastfeeding and level of activity. Energy requirements of different groups are shown in table 1. Table 2 lists foods that provide the required energy.

Table 1. Daily energy requirements (kcal³/day)

Age group	Healthy	HIV positive		
		Asymptomatic	Symptomatic	If losing weight (children)
Children				
		10% more energy	20% more energy (20–30% for children)	50–100% more energy
6–11 months	680	760	830	150–200 kcal/kg of body weight/day
12–23 months	900	990	1,080	150–200 kcal/kg of body weight/day
2–5 years	1,260	1,390	1,510	150–200 kcal/kg of body weight/day

³ A **calorie** is the amount of energy needed to increase the temperature of 1 g of water by 1° Celsius. These units of energy are so small that they are expressed in 1,000 calorie units known as **kilocalories (kcal)**.

6–9 years	1,650	1,815	1,980	75–100 kcal/kg of body weight/day
10 to 14 years	2,020	2,220	2,420	60–90 kcal/kg of body weight/day
15 to 17 years	2,800	3,080	3,360	
Adults				
Non-pregnant/ lactating	2,000– 2,580	2,200–2,838	2,400–3,612	
Pregnant/lactating	2,460– 2,570	2706–2,829	3,444–3,961	

Source: Adapted from WHO. 2009a. *Nutritional Care and Support for People Living with HIV/AIDS: A Training Course. Participant's Manual*. Geneva: WHO.

Table 2. Food equivalents to meet energy needs

Age group	Kcal/day	Sample food equivalents
0–6 months	518–639 (boys) 464–599 (girls)	Breast milk on demand
6–11 months	680	Breast milk on demand AND 2 of any of the following snacks: <ul style="list-style-type: none"> ▪ 2 bowls (250 ml each) of maize porridge with sugar and oil ▪ 1 banana ▪ 1 large serving spoon of mashed boiled squash ▪ 1 boiled egg
12–23 months	900	Breast milk on demand AND all of the following: <ul style="list-style-type: none"> ▪ 1 bowl of porridge with sugar, milk and groundnut paste ▪ 1 boiled egg ▪ 2 bananas ▪ 1 boiled sweet potato ▪ 1 cup (200–250 ml) of mango juice
2–5 years	1,260	All of the following: <ul style="list-style-type: none"> ▪ 3 bowls of maize porridge with margarine and sugar ▪ 1 banana ▪ 1 boiled sweet potato ▪ 2 small serving spoons of boiled pumpkin ▪ 1 cup of milk ▪ 1 slice of bread with margarine and jam

6–9 years	1,650	<p>3 meals of 500 kcal each (example below)</p> <ul style="list-style-type: none"> ▪ Sorghum and millet <i>ugali</i> with boiled kidney beans and cassava leaves <p>AND 2 snacks (examples below)</p> <ul style="list-style-type: none"> ▪ 1 banana ▪ 1 egg ▪ 1 chapati with oil
10–14 years	2,020	<p>3 meals of 600 kcal each (examples below)</p> <ul style="list-style-type: none"> ▪ Banana porridge with dried fish and spinach ▪ Maize and sorghum <i>ugali</i>, pigeon peas and pumpkin <p>AND 2 snacks (examples below)</p> <ul style="list-style-type: none"> ▪ 1 slice bread with margarine and jam ▪ 1 chapati with oil ▪ 1 avocado ▪ 1 handful of groundnuts
15–17 years	2,800	<p>3 meals of 800 kcal each (examples below)</p> <ul style="list-style-type: none"> ▪ <i>Makande</i> ▪ Pumpkin leaf broth with oil, cassava and spinach relish with groundnuts or 1 serving spoon of pigeon peas or 2 sweet potatoes <p>AND 2 snacks (examples below)</p> <ul style="list-style-type: none"> ▪ 1 slice bread with margarine and jam ▪ 1 chapati with oil ▪ 1 avocado ▪ 1 cup of orange juice
≥ 18 years	2,170	<p>3 meals of 650 kcal each (example below)</p> <ul style="list-style-type: none"> ▪ Rice cooked with oil, boiled chicken and cassava leaf relish with groundnuts or 1 egg or 1 serving spoon of cooked lentils <p>AND 2 snacks (examples below)</p> <ul style="list-style-type: none"> ▪ 1 slice of bread with margarine and jam ▪ 1 chapati with oil ▪ 1 avocado ▪ 1 handful of groundnuts
Pregnant/lactating	2,455	<p>3 meals of 700 kcal each (examples below)</p> <ul style="list-style-type: none"> ▪ Banana porridge with meat and spinach ▪ Cassava leaves, sorghum and millet <i>ugali</i> and 1 boiled sweet potato <p>AND 3 snacks (examples below)</p> <ul style="list-style-type: none"> ▪ 1 slice of bread with margarine and jam ▪ 1 chapati with oil

		<ul style="list-style-type: none"> ▪ 1 avocado ▪ 1 handful of groundnuts)
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For people living with HIV, energy requirements are influenced by viral load. Table 3 lists foods that can provide the extra energy requirements for someone with HIV.

Table 3. Food equivalents to meet extra energy needs of people living with HIV

Group	Extra energy needs	Sample food equivalents
HIV-positive child	10% extra (asymptomatic)	Any of the following: <ul style="list-style-type: none"> ▪ Energy-dense, well-mashed or pureed foods twice a day (e.g., at 6 months: 2–3 tablespoons; at 7–8 months: 3–4 tablespoons) ▪ Margarine, butter, oil, cooked eggs or groundnut paste added to foods if no diarrhoea ▪ 1 cup of milk (OR 1 bowl of porridge) AND 1 energy-dense snack (e.g., 1 banana, 1 egg or bread with groundnut paste)
	20–30% extra (symptomatic, with no weight loss)	Any of the following: <ul style="list-style-type: none"> ▪ 2 teaspoons of margarine or oil and 1–2 teaspoons of sugar added to porridge 3 times a day ▪ 1 extra cup of milk ▪ 1 slice of bread with groundnut paste ▪ 1 banana plus 1 avocado or 1 egg
	50–100% extra (symptomatic with weight loss)	Any of the following: <ul style="list-style-type: none"> ▪ 2 teaspoons of margarine or oil and 1–2 teaspoons of sugar added to porridge 4 times a day ▪ 2–3 extra cups of milk ▪ 3 slices of bread with groundnut paste ▪ 2 bananas, avocados or eggs
HIV-positive adult	10% extra (asymptomatic)	Any of the following: <ul style="list-style-type: none"> ▪ 1 mug (250 ml) of porridge ▪ 2 medium sweet potatoes ▪ 2–3 large coffee cups of boiled milk ▪ 2 bananas ▪ 2 small serving spoons of boiled pumpkin ▪ 1 small serving spoon of meat sauce and 1 small serving spoons of vegetables ▪ 1 egg

	20% extra (symptomatic)	Any of the following: <ul style="list-style-type: none"> ▪ 2 mugs (500 ml) of porridge ▪ 4 medium sweet potatoes ▪ 4 bananas ▪ 2 small serving spoons of meat sauce and 2 small serving spoons of vegetables ▪ 4 eggs
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Source: Lukmanji, Zohra, et al. 2008. *Tanzania Food Composition Tables*. Cambridge: Harvard School of Public Health and Dar es Salaam: Muhimbili University of Health and Allied Sciences and Tanzania Food and Nutrition Centre.

Protein

The normal human protein requirement is 12–15 percent of energy intake per day. Below are the requirements per kg of body weight for different groups:

- 1.50 g per kg of body weight per day for infants
- 1.10 g per kg of body weight per day for children 1–3 years, 0.95 g per kg of body weight per day for children 4–13 years, 0.85 g per kg of body weight per day for adolescents 14–18 years, 0.80 g per kg of body weight per day for adults
- 1.10 g per kg of body weight per day for pregnant women (using pre-pregnancy weight) and lactating women

According to the World Health Organization (WHO), people living with HIV should consume the same proportion of protein in their diet as healthy non-infected people of the same age, sex and physical activity level (table 4). People living with HIV should increase their protein intake proportionally as they increase fat and carbohydrate intake to meet their increased energy needs.

Table 4. Protein requirements

Group	Grams per day
0–6 months	9
7–11 months	11
1–3 years	13
4–8 years	19
9–13 years	34
14–18 years	46 (females), 52 (males)
19→ 70 years	46 (females), 56 (males)
Pregnant 14–50 years	71
Lactating 14–50 years	105

Sources: WHO, FAO and United Nations University (UNU). 2001. *Human Energy Requirements: Report of a Joint WHO/FAO/UNU Expert Consultation, 17–24 October, 2001*. Geneva: WHO. U.S. Department of Agriculture. 2011. *Dietary Reference Intakes (DRIs): Recommended Intakes for Individuals*. Washington, DC: U.S. Government.

Fat

The normal fat requirement is no more than 35 percent of total energy needs. There is no evidence that people living with HIV need more fat than the normal requirements, but they may consume additional fat with increased energy intake. People on antiretroviral therapy (ART) or other medications or people with persistent diarrhoea may need to eat less fat.

Vitamins and minerals

Eating a variety of foods from all food groups is the best way to ensure adequate intake of vitamins and minerals. However, if high-risk groups such as children and pregnant and lactating women cannot consume enough vitamins and minerals through diet, they may need multiple micronutrient supplements. The recommended supplements are listed below.

Children under 5 years in resource-limited settings

- 100,000 IU vitamin A every 6 months for infants 6–12 months
- 200,000 IU vitamin A every 6 months for children over 12 months
- Zinc supplement for children with diarrhoea
- There are no data on the efficacy of other micronutrient supplements for HIV-infected children.

Women who are pregnant and up to 6 months post-partum

- 60 mg of elemental iron and 400 µg of folic acid daily for 6 months after the first trimester of pregnancy to prevent anaemia and twice daily to treat severe anaemia
- Single high-dose of vitamin A (200,000 IU) immediately after delivery, plus 200 mg of ferrous sulphate and 5 mg of folic acid
- For HIV-positive pregnant/post-partum women, results from several studies raise concerns that vitamin A, zinc and iron may speed up HIV disease progression rather than improving the immune system.

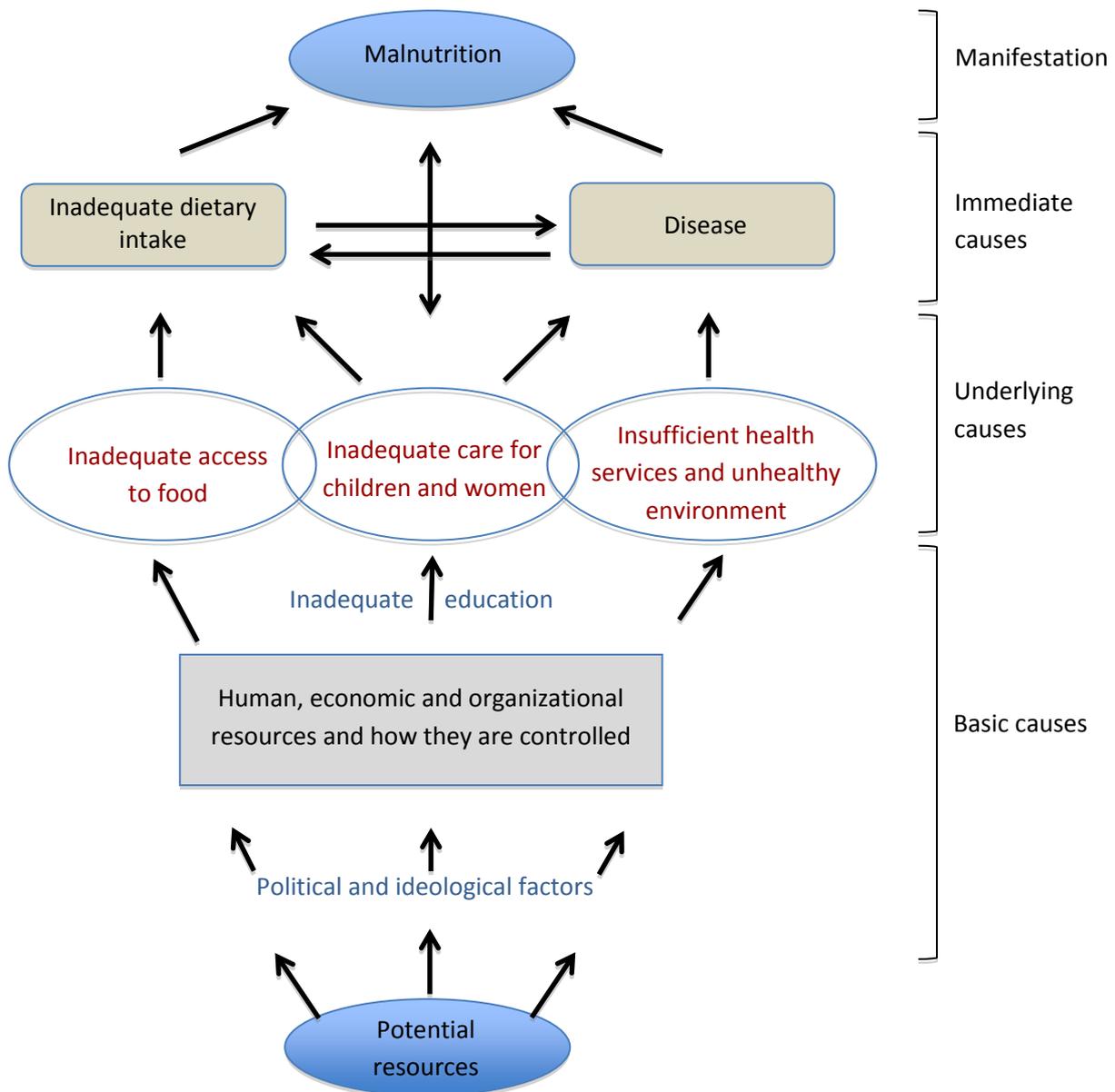
People living with HIV

- As for HIV-negative, non-pregnant/lactating adults, no more than 1 Recommended Dietary Allowance (RDA) of micronutrients

REFERENCE 3. CAUSES OF MALNUTRITION

Figure 1 shows the various causes of malnutrition and how they influence each other.

Figure 1. UNICEF conceptual framework of malnutrition



Source: UNICEF. 1998. *State of the World's Children 1998*. Oxford, U.K.: Oxford University Press.

Immediate causes of malnutrition

1. **Inadequate food intake** because of:
 - **Appetite loss** caused by illness, medications, depression, anxiety, fatigue, taste changes associated with medicines
 - **Nausea or vomiting** caused by illness, medications, inability to eat
 - **Oral problems** (decayed or missing teeth, mouth sores, thrush and problems swallowing caused by tumours in the throat)
 - **Abdominal pain/cramps**
 - **Lack of encouragement to eat** (no active feeding of children by caretakers)
 - **Medication-food interactions** (medications that cannot be taken with certain foods or have to be taken with certain foods)
 - **Food preparation** (destruction of nutrients, not mashing or grating food for people with oral problems or illness)
 - **Illness**, which increases nutrient needs and can reduce appetite
 - **Inadequate breastfeeding**
 - **Food taboos** such as not breastfeeding children with fever or not eating eggs when pregnant
 - **Gender and age inequalities** in food distribution (men eating first or children eating last or from the same plate as adults)
2. **Inability to digest or absorb some nutrients** because of:
 - **Intolerance** (of lactose, fat or carbohydrates; malabsorption of fat leading to poor absorption of fat-soluble vitamins such as vitamins A and E)
 - **Constipation or bloating**
 - **Diarrhoea** (related to contaminated food or water, HIV or drug side effects)
 - **Poor gut integrity**
3. **Inability to utilise food** because of:
 - **Infections** such as HIV and tuberculosis (TB)
 - **Metabolic disorders** (sometimes a side effect of medications)
 - **Digestive malfunction** such as insulin resistance

Underlying causes of malnutrition

1. Poverty and inadequate access to food
2. Poor hygiene and sanitation and lack of access to clean water
3. Lack of knowledge about nutritional needs
4. Incorrect beliefs about food and nutrition
5. Inadequate health care

Basic causes of malnutrition

1. Economic and political structures and policies that do not prioritise health care and food security for vulnerable populations
2. Insufficient resources allocated to health care or food security
3. Inadequate knowledge and understanding of good nutrition

REFERENCE 4. CHILDREN WITH KWASHIORKOR AND MARASMUS

Kwashiorkor and marasmus are clinical signs of acute malnutrition in children. In the Ga language of West Africa, 'kwashiorkor' means 'first-second child' because it affects children who are weaned abruptly when another child is born or fed other foods in addition to breast milk too early. The causes of **kwashiorkor** are debated. **Marasmus** is caused by decreased food intake and/or illness, resulting wasting. Signs of both kwashiorkor and marasmus can appear together in a condition known as **marasmic kwashiorkor** (table 5).

Table 5. Signs of kwashiorkor, marasmus and marasmic kwashiorkor

Signs of kwashiorkor	Signs of marasmus	Marasmic kwashiorkor
Bilateral pitting oedema and no weight loss	Severe weight loss, drawn-in face	Bilateral pitting oedema
Poor appetite	Good appetite	Wasting
Loss of muscle mass	Dry, loose skin on the upper arm	Other signs of marasmus
Vomiting	Fat loss on buttocks and thighs	
Infections, diarrhoea	Strong appetite	
Hair changes	Sometimes hair without pigment	
Flaking skin		
Apathy	Irritability	

Kwashiorkor



Marasmus



Illustrations: URC. 2009. Comprehensive Nutrition Care for People Living with HIV/AIDS: Facility-Based Health Providers Manual. Kampala, Uganda: URC.

REFERENCE 5. WAYS TO PREVENT AND MANAGE MALNUTRITION

Through food

1. Promote consumption of a balanced diet using a variety of locally available foods.
2. Promote optimal feeding of vulnerable groups (infants and young children, adolescent girls, pregnant and lactating women and people with illness).
3. Mash, ferment, germinate, dehull or roast foods to improve nutrient availability.
4. Fortify staple foods (maize flour, sugar, salt, cooking oil and wheat flour).
5. Fortify home foods using multimicronutrient powders.
6. Promote growing vitamin- and mineral-rich vegetables and fruits.
7. Improve household food production, post-harvest handling, preservation and processing.
8. Refer malnourished people to economic strengthening and livelihood initiatives to improve food security.
9. Provide food support.
10. Improve institutional feeding in schools and prisons.

Through health care services

1. Integrate nutrition assessment, counselling and support into routine health services.
2. Provide nutrition guidelines, standards, protocols, job aids and essential equipment.
3. Improve district and regional management of nutrition services.
4. Provide micronutrient supplements (vitamin A, iron folate and zinc) according to the national protocol.
5. Provide specialised food products to treat malnutrition according to the national protocol.
6. Provide deworming to prevent iron deficiency anaemia.

Through behaviour change

1. Provide growth monitoring and promotion.
2. Provide nutrition counselling and education, including food demonstrations.

REFERENCE 6. CRITICAL NUTRITION ACTIONS WITH MESSAGES AND EXPLANATIONS

Table 6 lists the Critical Nutrition Actions (CNAs) with messages to give clients for each action, along with the reasons for giving those messages. Messages or explanations specific to people living with HIV are shaded.

Table 6. Critical Nutrition Actions

CNA	Message	Explanation
1. Get weighed regularly and have weight recorded.	<ul style="list-style-type: none"> Keep a record of your weight in a book or on a weight chart. 	<ul style="list-style-type: none"> Periodic weighing tracks weight change to allow early action.
	<ul style="list-style-type: none"> If you are overweight, avoid fatty and sugary foods and get more physical exercise. 	
	<ul style="list-style-type: none"> Seek medical care if you unintentionally lose more than 6 kg of weight in 2–3 months. 	<ul style="list-style-type: none"> Unintentional weight loss or gain may mean poor health and lead to hospitalisation.
<i>For people living with HIV</i>	<ul style="list-style-type: none"> If you have HIV-related symptoms, get weighed every month. If not, get weighed at least every 3 months. 	<ul style="list-style-type: none"> Unintentional weight loss of more than 6 kg in 2–3 months can mean that HIV is progressing fast to AIDS.
2. Eat a variety of foods and increase your intake of nutritious foods.	<ul style="list-style-type: none"> Eat three times a day with at least two snacks between meals. Eat a variety of foods from each food group. Eat energy-rich foods. 	<ul style="list-style-type: none"> A varied diet ensures that your body gets all the nutrients required. Fruits and vegetables help strengthen immunity.
	<ul style="list-style-type: none"> Practice exclusive breastfeeding for 6 months. Introduce complementary foods when the infant reaches 6 months. Continue breastfeeding for 2 years or longer. 	<ul style="list-style-type: none"> Proper feeding improves immunity and child growth and development.

CNA	Message	Explanation
<p><i>For people living with HIV</i></p>	<ul style="list-style-type: none"> ▪ Increase your energy intake by eating more food more often, especially if you are sick. 	<ul style="list-style-type: none"> ▪ People living with HIV need more energy every day than uninfected people of the same age, gender and physical activity. ▪ The extra energy needed is based on the stage of HIV.
	<ul style="list-style-type: none"> ▪ Improve the digestibility of foods by germinating or fermenting them (this requires demonstration). 	<ul style="list-style-type: none"> ▪ HIV infection affects digestion and absorption.
	<ul style="list-style-type: none"> ▪ Seek help to manage depression and stress. 	<ul style="list-style-type: none"> ▪ Stress and depression may interfere with your appetite and therefore reduce food intake.
<p>3. Drink plenty of boiled or treated water.</p>	<ul style="list-style-type: none"> ▪ Treat drinking water by boiling it, adding a hypochlorite (chlorine) solution or using a water filter or solar disinfection. ▪ Store drinking water safely in a covered container with a narrow neck. ▪ Have enough boiled or treated drinking water in the home at all times for drinking, making juice and taking medicine. 	<ul style="list-style-type: none"> ▪ Treating water prevents infections such as diarrhoea.
<p><i>For people living with HIV</i></p>		<ul style="list-style-type: none"> ▪ The body needs water to remove toxins caused by HIV and antiretroviral therapy (ART).
<p>4. Avoid habits that can lead to poor nutrition and poor health.</p>	<ul style="list-style-type: none"> ▪ Practice safer sex, using condoms. 	<ul style="list-style-type: none"> ▪ Safer sex avoids transmission of sexually transmitted infections.
	<ul style="list-style-type: none"> ▪ Avoid alcohol, especially if you are taking medicines. 	<ul style="list-style-type: none"> ▪ Alcohol interferes with digestion, absorption, storage and utilisation of food.
	<ul style="list-style-type: none"> ▪ Avoid smoking cigarettes and taking medications without prescription. 	<ul style="list-style-type: none"> ▪ Smoking interferes with appetite and increases your risk of cancer and respiratory infections, particularly tuberculosis (TB).

CNA	Message	Explanation
	<ul style="list-style-type: none"> ▪ Avoid drinking sweetened, coloured drinks and fried foods sold in shops and on the street. 	<ul style="list-style-type: none"> ▪ These foods have little nutritional value and can even harm your health.
	<ul style="list-style-type: none"> ▪ Get enough rest. 	<ul style="list-style-type: none"> ▪ Too little sleep makes you fatigued and affects your appetite and strength.
5. Maintain good hygiene and sanitation.	<ul style="list-style-type: none"> ▪ Wash your hands with flowing water and soap after using the toilet and before handling, preparing and eating food and giving medicine. 	<ul style="list-style-type: none"> ▪ Food- and water-borne infections cause weakness, vomiting, diarrhoea and appetite loss.
	<ul style="list-style-type: none"> ▪ Avoid buying foods on the street that may be prepared or stored unhygienically. 	<ul style="list-style-type: none"> ▪ Food that is not prepared hygienically may cause diarrhoea and vomiting. Diarrhoea removes essential nutrients from your body.
6. Get exercise as often as possible.	<ul style="list-style-type: none"> ▪ Exercise regularly by doing household chores, walking or running at least 30 minutes a day. 	<ul style="list-style-type: none"> ▪ Regular exercise builds and strengthens muscle, improves appetite, manages stress and improves health and alertness.
7. Prevent infections and seek early treatment of infections and advice on managing symptoms through diet.	<ul style="list-style-type: none"> ▪ Seek immediate clinical help for management of illness. 	<ul style="list-style-type: none"> ▪ Any illness reduces appetite and affects food digestion, absorption and utilisation. Treating illness late worsens nutritional status.
	<ul style="list-style-type: none"> ▪ Always seek advice from a health care provider on traditional remedies or nutrition supplements you are taking. 	<ul style="list-style-type: none"> ▪ Nutrition supplements should not replace food. ▪ Some traditional herbs affect how other medications work and can produce side effects.
	<ul style="list-style-type: none"> ▪ Along with medical care, manage symptoms of illness through an adequate diet at home when possible. 	<ul style="list-style-type: none"> ▪ Dietary management can make symptoms less severe and help you continue eating.
<i>For people living with HIV</i>	<ul style="list-style-type: none"> ▪ Always tell your health care provider if you are taking herbal or other supplements. 	<ul style="list-style-type: none"> ▪ Some supplements claim to treat HIV, but there is no cure for HIV. Supplements may also interfere with the effectiveness of ART or other medications.

CNA	Message	Explanation
8. Manage food and medications interactions and side effects through diet.	<ul style="list-style-type: none"> ▪ Take all medicines as advised by your health care provider. 	<ul style="list-style-type: none"> ▪ If you do miss doses or stop taking them, your body can become resistant. The medications will be less effective, and you may need stronger ones.
	<ul style="list-style-type: none"> ▪ Ask your health care provider to give you a medication-food schedule with times to take medicines in relation to meals. Ask someone to help you keep the schedule. 	<ul style="list-style-type: none"> ▪ Some medications have to be taken with food and some without. If you don't follow these directions, the medicine will not work properly.
	<ul style="list-style-type: none"> ▪ Ask your health care provider about possible side effects of medications you are taking. ▪ Ask how you can medication side effects at home. 	<ul style="list-style-type: none"> ▪ You can manage many medication side effects by changing your diet.

REFERENCE 7. CLINICAL NUTRITION ASSESSMENT

Table 7 explains the steps and principles of clinical nutrition assessment.

Table 7. Assessing clients for signs and symptoms of malnutrition

ASK/LOOK	If YES	Implication
ASK the caregiver, child or client		
Have you noticed any weight change lately?	Look for signs of severe wasting: <ul style="list-style-type: none"> ▪ Significantly reduced fat in buttocks (look at the client from the side) ▪ Loss of muscle bulk around the shoulders, arms, ribs and legs. Is the outline of the ribs clearly visible? Are the hips small compared with the chest and abdomen? ▪ Sagging skin (sometimes looking like baggy pants) 	Unintended weight loss is a sign of illness.
Has the child/have you had any illnesses lately?	Ask whether the client has had: <ul style="list-style-type: none"> ▪ Active tuberculosis (TB), and if so, whether she/he has received the first 3 months of treatment ▪ Chronic diarrhoea (for more than 7 days) ▪ Other chronic opportunistic infections ▪ Oesophageal infections/ tumours 	Illness may be the cause of malnutrition, and may need to be treated first.
Has the child/have you had any symptoms lately?	Ask whether the client has had: <ul style="list-style-type: none"> ▪ Nausea or vomiting ▪ Persistent fatigue ▪ Mouth sores, thrush or difficulty swallowing ▪ Bilateral pitting oedema ▪ Dull, dry, thin or discoloured hair ▪ Dental problems ▪ Dry or flaking skin ▪ Pallor of the palms, nails or mucous membranes ▪ Lack of fat under the skin ▪ Swollen gums ▪ Goitre 	Many of these symptoms can be managed through diet.

ASK/LOOK	If YES	Implication
ASK the caregiver, child or client		
Has the child/have you had a poor appetite/been eating less than usual?	<p>If the client is a child, ask the caregiver how many meals and snacks or breastfeeds a day the child is getting and list the content and amount of each meal.</p> <p>If the child is an adolescent or adult, do a dietary assessment. Count the number of meals eaten per day and list the content of the meals.</p>	Assess whether poor food intake may be causing malnutrition.
Have you noticed changes in body composition or fat distribution?	Ask whether the changes include thinning limbs and face or enlargement of the face, stomach, breasts or back.	If so, these may be side effects of antiretroviral medications (ARVs) that should be referred to a clinician.
Is the child/are you taking any medication?	<p>Find out what medications the client is taking.</p> <p>Find out whether the client is taking any nutrition supplements or herbal or other remedies.</p>	Medication side effects may affect ability to eat, change body composition and cause anaemia.
EXAMINE AND MEASURE (A nurse or clinician should do medical assessments and record all parameters in the client's record.)		
Assess for bilateral pitting oedema.	<p>Rule out non-nutritional causes of oedema such as pre-eclampsia, severe proteinuria, nephrotic syndrome, nephritis, acute filariasis, heart failure and wet beriberi.</p> <p>No bilateral pitting oedema = Grade 0</p> <p>Bilateral pitting oedema</p> <ul style="list-style-type: none"> ▪ In both feet or ankles = Grade + (mild) ▪ In both feet plus lower legs, both hands or both lower arms = Grade ++ (moderate) ▪ In both feet, legs, arms and face = Grade +++ (severe) 	Bilateral pitting oedema is a sign of severe acute malnutrition (SAM). Fluid is mobilised from the tissues to the vascular space, leading to expanded circulation that can cause heart failure and requiring hospital surveillance.

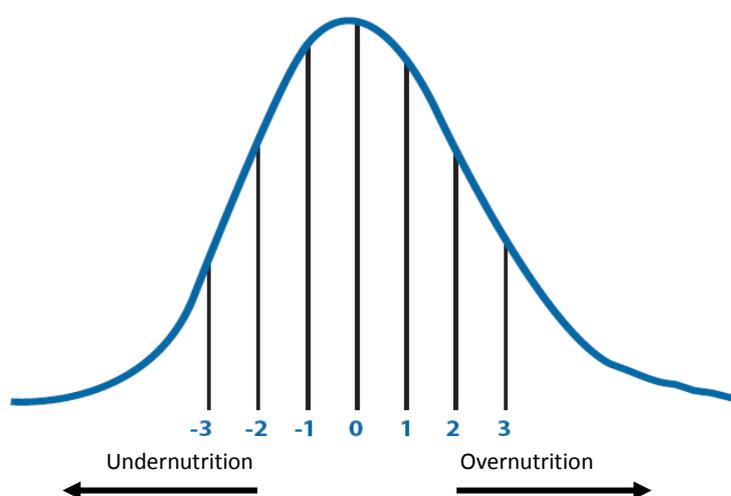
ASK/LOOK	If YES	Implication
EXAMINE AND MEASURE (A nurse or clinician should do medical assessments and record all parameters in the client's record.)		
Check for medical complications.	<p>Medical complications</p> <ul style="list-style-type: none"> ▪ Bilateral pitting oedema ▪ Wasting ▪ Anorexia, poor appetite ▪ Persistent diarrhoea ▪ Nausea or vomiting ▪ Severe dehydration ▪ High fever ($\geq 38.5^{\circ}\text{C}$) ▪ Difficult or rapid breathing or increased pulse rate ▪ Convulsions ▪ Severe anaemia ▪ Mouth sores or thrush ▪ HIV ▪ Hypothermia (temperature $< 35^{\circ}\text{C}$) ▪ Hypoglycaemia ▪ Lethargy or unconsciousness ▪ Extreme weakness ▪ Opportunistic infections ▪ Extensive skin lesions 	<p>Clients with SAM, medical complications and no appetite must be admitted for inpatient treatment of SAM.</p> <p>Clients with SAM, appetite and no medical complications can be treated for SAM as outpatients.</p>

REFERENCE 8. FINDING WEIGHT-FOR-HEIGHT Z-SCORE (WHZ) FOR CHILDREN FROM BIRTH TO 59 MONTHS

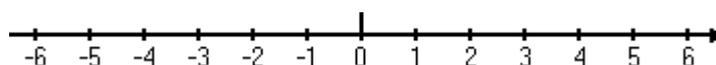
A weight-for-height z-score (WHZ) compares a child's weight to the weight of children of the same age, length/height and sex in the World Health Organization (WHO) Child Growth Standards to classify the child's nutritional status.

Z-scores are measured in standard deviations, which describe how far and in what direction an individual's anthropometric measurement deviates from the median (middle number). The z-score for the median measurement is 0. A measurement lower than the median has a minus sign (e.g., -1). A measurement greater than the median has a plus sign or no sign (e.g., $+2$ or 2). In figure 2, the further a measurement is from the median (0) on either side, the greater the risk of malnutrition.

Figure 2. Measurement of z-score compared with the median



On the number line below, the arrow points in the direction in which the numbers are getting bigger. That means that the numbers get smaller as you move to the left. For example, -5 is smaller than -4 .



The cutoffs for WHZ in table 9 show the range from undernutrition and overnutrition. In the table, -2 is bigger than -3 .

Table 9. WHZ cutoffs

Less than -3	-3 to less than -2	-2 to $+2$	$+2$ to $+3$	Greater than $+3$
Severe acute malnutrition (SAM)	Moderate acute malnutrition (MAM)	Normal nutritional status	Overweight	Obesity
Undernutrition			Overnutrition	

There are separate WHO Child Growth Standards for boys and girls in the tables in **Job Aid 7. How to Find Weight-for-Length/Height for Children from Birth to 59 Months of Age.**

There are two charts, one for length for children 6–23 months and one for height for children 24–59 months. The left-hand column in each table shows length or height in cm. At the top of the columns are ranges of z-scores based on weight which can be used to determine nutritional status.

This z-score indicates how far and in what direction an individual’s anthropometric measurement deviates from the median.

To use the tables:

1. Find the correct table for the child’s age (6–23 months or 24–59 months).
2. Find the figure closest to the child’s length/height in the left-hand column.
3. If the child’s length or height falls between two numbers, round up or down. For example, if the length is 45.2 cm, round down to 45. If the length is 45.6 cm, round up to 46.
4. Run your finger straight across to find the child’s weight.
5. Look at the top of that column to find the child’s nutritional status.

REFERENCE 9. FINDING BODY MASS INDEX (BMI)

BMI is a reliable indicator of body fatness and an inexpensive and simple way to measure malnutrition in **adults**. It does not measure body fat directly, but it correlates with direct measures of body fat. BMI below the World Health Organization (WHO) cutoffs indicates a need for nutrition interventions to slow or reverse weight loss.

BMI is not an accurate indicator of nutritional status in pregnant women or in adults with oedema, whose weight gain is not linked to their nutritional status. Use mid-upper arm circumference (MUAC) for these groups.

BMI is calculated as weight in kg divided by the square of the height in m.

- Convert cm to m (100 cm = 1 m).
- Calculate BMI using the formula below.

$$\frac{\text{weight in kg}}{(\text{height in m})^2}$$

Table 10 lists the BMI cutoffs for determining nutritional status.

Table 10. BMI cutoffs for classification of nutritional status

Group	Severe acute malnutrition (SAM)	Moderate acute malnutrition (MAM)	Normal nutritional status	Overweight	Obesity
Adults	< 16.0	≥ 16.0 to < 18.5	≥ 18.5 to < 25.0	≥ 25.0 to < 30.0	≥ 30.0

Source: WHO. 2015. *Obesity and Overweight*. Fact Sheet No. 311.

<http://www.who.int/mediacentre/factsheets/fs311/en/>

Classifying nutritional status according to BMI

BMI < 16.0	=	SAM
BMI ≥ 16.0 to < 17.0	=	Moderate malnutrition
BMI ≥ 17.0 to < 18.5	=	Mild malnutrition
BMI ≥ 18.5 to < 25.0	=	Normal nutritional status
BMI ≥ 25.0 to < 30.0	=	Overweight
BMI ≥ 30.0	=	Obesity

Source: WHO. 2015. *Obesity and Overweight*. Fact Sheet No. 311.

<http://www.who.int/mediacentre/factsheets/fs311/en/>

Note: Mild and moderate malnutrition are combined as MAM in the BMI cutoffs.

BMI chart

You can also easily find clients' BMI using **Job Aid 10. How to Find Body Mass Index (BMI) for Adults Reference Chart**, which shows BMI according to height (cm) and weight (kg).

1. Find height in the left-hand column (y axis or vertical axis).
2. Find weight in the bottom row (x axis or horizontal axis).
3. Find the point where the two lines meet. This is the BMI.
4. If the height and/or weight is an odd number, then find the point where all the lines Reference 10. Finding Body Mass Index meet (two or four cells) and use an average value.

REFERENCE 10. FINDING BMI-FOR-AGE

Simple body mass index (BMI) can be used as an indicator of nutritional status in non-pregnant/non-postpartum adults because most people over 18 years have completed their physical development. However, children and adolescents are still growing and developing. Therefore, age and sex have to be considered when using BMI to determine their nutritional status. BMI-for-age can be used as an indicator of nutritional status in children and adolescents 5–18 years. It can also be used for children up to 5 years, but weight-for-height z-score (WHZ) and mid-upper arm circumference (MUAC) are more commonly used for this age group.

Like weight-for-height, BMI-for-age is expressed in z-scores. A BMI-for-age z-score tells how many standard deviations a child or adolescent's BMI is away from the median BMI value of that reference population.

To find BMI-for-age, you first need to find BMI on either the BMI look-up tables or the BMI side of a BMI wheel. The BMI look-up tables show height in the left-hand column, or y axis, and weight on the bottom row, or x axis. They are divided by sex and show nutritional status at the top of the columns.

Table 11 lists the BMI-for-age cutoffs for classification of nutritional status.

Table 11. BMI-for-age cutoffs for classification of nutritional status

Group	Severe acute malnutrition (SAM)	Moderate acute malnutrition (MAM)	Normal nutritional status	Overweight	Obesity
Children 5–18 years	< -3	≥ -3 to < -2	≥ -2 to ≤ +1	> +1 to ≤ +2	> +2

Source: World Health Organization (WHO). 2007. "Growth Reference Data for 5–19 Years." Available at: <http://www.who.int/growthref/en/>.

REFERENCE 11. MEASURING MID-UPPER ARM CIRCUMFERENCE (MUAC)

MUAC is the circumference of the left upper arm, measured at the mid-point between the tip of the shoulder and the tip of the elbow using a measuring or MUAC tape.

Use MUAC to measure:

- Children as an alternative to weight-for-height z-score (WHZ)
- Adolescents 15–17 years and adults
- Pregnant women, women up to 6 months post-partum and people with non-nutritional oedema (whose weight does not necessarily indicate their nutritional status)
- Clients who are unable to stand up to have weight and height measured

How to measure MUAC

1. If the client is a very young child, sit down so you can measure at eye level. Ask the caregiver to hold the child.
2. Ask the caregiver or client to remove any clothing covering the client's left arm.
3. Bend the elbow to make a right angle. Keep the tape at eye level and place it at zero on the tip of the shoulder (end-point). Pull the tape straight down past the tip of the elbow. Read the number at the tip of the elbow to the nearest cm. Then either divide this figure in two or fold the end-point to the top of the tape to find the mid-point. Mark the mid-point with a pen on the arm.
4. The mid-point is the mid-line of the posterior aspect of the arm (over the shoulder top) over the triceps muscle, mid-way between the lateral projection of the acromion process at shoulder and the olecranon process of the ulna (at the point of the elbow).
5. Straighten the client's arm so it is hanging loosely and comfortably at the side (unless the client is an infant or disabled). Wrap the MUAC tape around the arm where the mid-point is marked. Make sure the numbers are right side up and the tape is flat around the skin.
6. Place the tape through the window and correct the tension so the tape is not too tight or too loose.
7. Read the measurement to the nearest 0.1 cm in the window where the arrows point inward.
8. Record the measurement immediately. Table 12 lists the cutoffs for classification of nutritional status using MUAC.

Table 12. MUAC cutoffs for classification of nutritional status

Group	Severe acute malnutrition (SAM)	Moderate acute malnutrition (SAM)	Normal
Children			
6 to 59 months	< 11.5 cm	≥ 11.5 to < 12.5 cm	≥ 12.5 cm
5 to 9 years	< 13.5 cm	≥ 13.5 to < 14.5 cm	≥ 14.5 cm
10 to 14 years	< 16.0 cm	≥ 16.0 to < 18.5 cm	≥ 18.5 cm
Adolescents 15 to 17 years and adults	< 18.5 cm	≥ 18.5 to < 22.0 cm	≥ 22.0 cm
Women who are pregnant and up to 6 months post-partum	< 19.0 cm	≥ 19.0 to < 23.0 cm	≥ 23.0 cm

REFERENCE 12. TAKING A DIETARY HISTORY

Two common ways to find out what and how much a client is eating are **24-hour dietary recall** and a **food frequency questionnaire**. These can be used to assess eating habits, food allergies and intolerances and reasons for inadequate food intake during illness. The use of both of these tools is outlined below.

24-hour dietary recall

Explain to the client the purpose of the 24-hour dietary recall. Inform the client that you will use the information to evaluate his or her diet and then counsel on how to improve it, if necessary. Reassure him or her that the information will be kept confidential and used only to assess his or her nutritional needs. Stress that there are no 'good' or 'bad' foods.

Do not show in words or facial expressions that you approve or disapprove of any food or drink the client mentions.

Do not ask questions that would lead the client to think he or she should mention any particular food or drink.

Photocopy the form on the next page for use with clients. List everything the client reports eating or drinking, including snacks, beverages, condiments and all foods eaten at home or away from home *during the past 24 hours*.

*Include both foods eaten alone and foods combined in a dish (e.g., soup or stew).

Ask questions such as the following to probe for information:

- What was the first thing you ate or drank when you got up in the morning?
- Do you remember anything else you ate or drank?
- Did you eat the food plain or put something else on it?
- While you were working, did you take a break to eat or drink something?
- What foods do you especially like or dislike?
- If you were sick during the past 24 hours, did you feel hungry?
- Did you crave any particular food in the past 24 hours?

Now go back and ask the client to estimate the size of the portions of each item.

Do not label the meals 'breakfast', 'lunch' or 'dinner'.

After the client has mentioned all the foods and amounts for the past 24 hours, read the list back to the client and ask whether there is anything he or she may have forgotten.

Thank the client for his or her cooperation.

Remember that it can be difficult for clients to remember everything they ate and drank over the previous 24 hours. Also, this one day may not represent the client's usual food intake.

Assess whether the client's reported food intake included foods from all the food groups. If not, counsel the client to add foods from the missing food groups to meals if possible.

Food frequency questionnaire

Explain to the client the purpose of the food frequency questionnaire. Inform the client that you will use the information to evaluate his or her diet and then counsel on how to improve it, if necessary.

Ask the client to try to remember what he or she ate or drank *during the past day and the past week*, including snacks, meals, beverages and any foods eaten outside the home.

Photocopy the form on the next page. Use the client's answers to fill in the questionnaire.

Food frequency questionnaire

Food item	Average number of servings		Serving size (large, medium, small)
	Per day	Per week	
Meat or chicken			
Fish or seafood			
Eggs			
Milk or milk products			
Fruit or fruit juice			
Green, leafy vegetables			
Yellow or orange vegetables or fruits (sweet potatoes, mangoes, oranges, pawpaw, pumpkin, carrots, yams)			
Other vegetables			
Roots or tubers (potatoes, cassava)			
Cereals (<i>ugali</i> , bread, rice, biscuits)			
Beans or nuts			
Sugar or honey			
Alcohol			
Sweetened beverages			
Oils or fats			
Coffee or tea			
Other			

REFERENCE 13. NUTRITION CARE PLAN CRITERIA

Table 13 lists anthropometric and clinical criteria for each Nutrition Care Plan.

Table 13. Nutrition Care Plan criteria by nutritional status

Nutritional status	Nutrition Care Plan	Cutoffs	
		Infants and children 0 months –14 years of age	Adolescents 15–17 years of age and adults
Severe acute malnutrition (SAM) with no appetite or with medical complications	C1	Bilateral pitting oedema OR weight-for-height z-score (WHZ) < -3 OR body mass index (BMI)-for-age (5–14 years) < -3 OR mid-upper arm circumference (MUAC) 6–59 months: < 11.5 cm 5–9 years: < 13.5 cm 10–14 years: < 16.0 cm AND no appetite AND/OR medical complications	Bilateral pitting oedema OR confirmed unintentional weight loss of > 10% since the last visit OR BMI (18 years and older, non-pregnant/up to 6 months post-partum): < 16 OR BMI-for-age (15–18 years) < -3 OR MUAC Non-pregnant/up to 6 months post-partum: < 18.5 cm Pregnant/up to 6 months post-partum: < 19.0 cm AND no appetite AND/OR medical complications
SAM with appetite and no medical complications	C2	WHZ < -3 OR BMI-for-age (5–14 years) < -3 OR MUAC 6–59 months: < 11.5 cm 5–9 years: < 13.5 cm 10–14 years: < 16.0 cm AND appetite AND no medical complications	Confirmed unintentional weight loss of > 10% since the last visit OR BMI (non-pregnant/up to 6 months post-partum): < 16 OR BMI-for-age (15–18 years) < -3 OR MUAC Non-pregnant/up to 6 months post-partum: < 18.5 cm Pregnant/up to 6 months post-partum: < 19.0 cm AND appetite AND no medical complications

Moderate acute malnutrition (MAM)	B	<p>Confirmed weight loss > 5% since last visit</p> <p>OR growth curve flattening</p> <p>OR WHZ ≥ -3 to < -2</p> <p>OR BMI-for-age (5–14 years) ≥ -3 to < -2</p> <p>OR MUAC</p> <p>6–59 months: ≥ 11.5 to < 12.5 cm</p> <p>5–9 years: ≥ 13.5 to < 14.5 cm</p> <p>10–14 years: ≥ 16.0 to < 18.5 cm</p>	<p>Confirmed unintentional weight loss > 5% since last visit</p> <p>OR BMI (non-pregnant/up to 6 months post-partum): ≥ 16.0 to < 18.5</p> <p>OR BMI-for-age (15–18 years) ≥ -3 to < -2</p> <p>OR MUAC</p> <p>Non-pregnant/up to 6 months post-partum: ≥ 18.5 to < 22.0 cm</p> <p>Pregnant/up to 6 months post-partum: ≥ 19.0 to < 23.0 cm</p>
Normal nutritional status	A	<p>Weight gain parallel to/higher than median growth curve</p> <p>WHZ ≥ -2 to $\leq +2$</p> <p>OR BMI-for-age (5–14 years) ≥ -2 to $\leq +1$</p> <p>OR MUAC</p> <p>6–59 months: ≥ 12.5 cm</p> <p>5–9 years: ≥ 14.5 cm</p> <p>10–14 years: ≥ 18.5 cm</p>	<p>BMI ≥ 18.5 to < 25.0 (non-pregnant/up to 6 months post-partum)</p> <p>OR BMI-for-age (15–18 years) ≥ -2 to $\leq +1$</p> <p>OR MUAC</p> <p>Non-pregnant/up to 6 months post-partum: ≥ 22.0 cm</p> <p>Pregnant/up to 6 months post-partum: ≥ 23.0 cm</p>
Overweight and obesity	D	<p>WHZ (6–59 months) $> +2$ to $\leq +3$</p> <p>OR BMI-for-age (5–14 years) $\geq +1$ to $\leq +2$</p>	<p>BMI ≥ 25.0 to < 30.0</p> <p>OR BMI-for-age (15–17 years) $\geq +1$ to $\leq +2$</p>
Obesity		<p>WHZ (6–59 months) $> +3$</p> <p>OR BMI-for-age (5–14 years) $> +2$</p>	<p>BMI ≥ 30.0</p> <p>OR BMI-for-age (15–17 years) $> +2$</p>

REFERENCE 14. DOING AN APPETITE TEST

Give all clients with severe acute malnutrition (SAM) an appetite test on admission and on every follow-up visit to find out whether they should be treated as inpatients or outpatients.

1. Ask the client (or caregiver if the client is a child) to wash his or her hands with soap and running water.
2. Take the client (and caregiver if the client is a child) to a quiet, private area.
3. Give the client or caregiver a packet of ready-to-use therapeutic food (RUTF) and show how to open it and eat it from the packet or on a spoon.
4. Do not force the client to eat the RUTF. Children may need gentle encouragement to eat, especially if they are sick.
5. Offer plenty of boiled or treated drinking water to the client while eating the RUTF.
6. Watch to see how much the client eats (or ask the caregiver to give it to the child and watch how much the child eats). The test should take a short time but may take up to 30 minutes (table 8).

Table 8. Minimum amount of RUTF the client should eat to pass the appetite test

Client weight (kg)	Packets
< 4.0	$\frac{1}{8}$ – $\frac{1}{4}$
4.0–6.9	$\frac{1}{4}$ – $\frac{1}{3}$
7.0–9.9	$\frac{1}{3}$ – $\frac{1}{2}$
10.0–14.9	$\frac{1}{2}$ – $\frac{3}{4}$
15.0–29.0	$\frac{3}{4}$ –1
≥ 30.0	> 1

7. Refer clients with SAM and no appetite for inpatient care if they cannot eat the minimum amount of the RUTF. If they pass the appetite test, treat them as outpatients.

REFERENCE 15. NUTRITION CARE PLAN C FOR CHILDREN FROM BIRTH TO 14 YEARS OF AGE WITH SEVERE ACUTE MALNUTRITION (SAM)

C1: Inpatient treatment of SAM with medical complications or no appetite

I. INFANTS UNDER 6 MONTHS AND INFANTS AND CHILDREN OVER 6 MONTHS WEIGHING LESS THAN 4 KG

ADMISSION CRITERIA

Bilateral pitting oedema (any grade is sufficient criterion for admission)

OR

Weight loss or failure to gain weight

OR

Weight-for-height z-score (WHZ) < -3

OR

Body mass index (BMI)-for age (5–14 years) < -3

AND

Breastfeeding infant too weak to suckle effectively

ON ADMISSION

1. If possible, admit infants with SAM into a separate section away from older children with SAM to prevent cross-infection.
2. Do emergency triage assessment and treatment of emergency or priority signs.
3. Give 50 ml of 10 percent sugar water or 10 percent dextrose orally to avoid hypoglycaemia.
4. Take a medical history.
5. Keep the child warm with head covered and airway free to prevent hypothermia.

6. Identify and begin treatment of medical complications (e.g., persistent vomiting, high fever, shock, septic shock, severe dehydration, severe anaemia, hypoglycaemia, hypothermia, skin infections, respiratory or urinary tract infections).
7. Give parenteral (intramuscular [IM] or intravenous [IV]) antibiotics to children with SAM and medical complications such as septic shock, hypoglycaemia, hypothermia, skin infections, respiratory or urinary tract infections or lethargy.
8. Give children with SAM, no signs of infection and no complications an oral antibiotic.
9. Assess the results of lab tests (blood slide/RDT for malaria, full blood count + erythrocyte sedimentation rate, random blood glucose, Mantoux test, septic screening [urine, blood and swab cultures], HIV test, chest x-ray, serum electrolytes).
10. Register the child using a unique registration number.
11. Explain the treatment and ward procedures to the mother or caregiver.
12. Ensure provider-initiated HIV testing and counselling (PITC) for the mother. If she is seropositive, arrange escorted referral for her and the infant for antiretroviral therapy (ART) (option MTCT B+).

TREATMENT

Infants who can be breastfed

Supplement the child while stimulating production of breast milk in the mother.

1. Give infants with bilateral pitting oedema commercial infant formula or F-75 to supplement breast milk.
2. Give infants with no bilateral pitting oedema commercial infant formula, F-75 or F-100-Diluted to supplement breast milk.
3. Advise the mother to breastfeed the infant at least 8 times a day for at least 20 minutes each time (longer if the infant cries or demands more).
4. Instruct the mother to use the supplementary suckling technique while feeding the infant maintenance amounts of infant formula, F-75 or F-100-Diluted.

How to prepare F-75

- Add boiled and cooled water or bottled water to F-75 or F-100 sachets according to the manufacturer's instructions (e.g., add 500 ml of boiled, cooled water to 1 packet of F-75 powder).

How to prepare F-100-Diluted

Dilute one 114 g packet of F-100 in 675 ml of boiled and cooled water **OR** Add 35 ml of water to 100 ml of already prepared F-100.

In this technique, the infant suckles at the breast while taking the infant formula, F-75 or F-100-Diluted from a cup through a tube running alongside the nipple. The infant is nourished by the supplement while suckling stimulates the breast to produce more milk.



Instruct the mother to hold a cup with the infant formula, F-75 or F-100-Diluted 5–10 cm below her nipple. When the child suckles more strongly, lower the cup to 30 cm. Put the end of a no. 8 nasogastric tube into the cup and the tip of the tube at the nipple.

Instruct the mother to offer the breast using correct positioning and attachment. The suckling infant sucks the F-100-Diluted from the cup while suckling on the breast.

It may take 1–2 days for the infant to get used to this technique. In the meantime, feed the F-100-Diluted by spoon.

After feeding is completed, flush the tube with clean, safe (boiled or treated) water using a syringe and spin it rapidly to remove the water from the tube.

If the mother has no breast milk after attempting the supplementary suckling technique, assess whether she has access to a sufficient supply of infant formula to last until the infant is 6 months of age. If so, counsel the mother on safe formula feeding. If not, counsel the mother on early weaning and follow up to ensure the infant continues to gain weight.

5. Monitor the infant's daily weight.

As the infant starts to gain weight, do not increase the quantity of F-100-Diluted. If the infant grows regularly with the same quantity of milk, it means the quantity of breast milk is increasing.

If the infant does not finish all the supplemental feed but continues to gain weight, the intake of breast milk is increasing enough to meet the infant's needs.

If the infant loses weight over 3 consecutive days but continues to be hungry and is taking all the F-100-Diluted, add 5 ml extra to each feed.

When the infant is gaining 20 g per day, decrease the amount of infant formula, F-75 or F-100-Diluted by half so that the infant gets more breast milk.

If the infant does not gain at least 10 g per day, increase the amount infant formula, F-75 or F-100-Diluted by 75 percent for 2–3 days and reduce it again if weight gain is maintained.

When the infant is gaining 10 g per day on breast milk, discharge the infant and ask the mother to continue breastfeeding exclusively.

6. Monitor daily:

- Weight at the same time every day (before or after feeds)
- Grade of bilateral pitting oedema
- Other clinical signs: Stool, vomiting, dehydration, cough, respiration and liver size
- Full medical examination
- Body temperature twice a day
- Fluid intake and source (oral, nasogastric tube [NGT] or IV). Record if the infant is absent, vomits or refuses a feed.
- Length or height every 3 weeks

Infants with no prospects of being breastfed

These infants may have been abandoned or orphaned or have terminally ill mothers or a medical condition such as multidrug-resistant tuberculosis. Inpatient treatment of SAM has three phases: Stabilisation, transition and rehabilitation.

1. Stabilisation phase

- a. Give commercial infant formula as per manufacturer's instructions, F-75 (100ml/kg/day) or F-100-Diluted (130 ml/kg/day) every 2 hours (12 times a day).
- b. Criteria to move to the transition stage:
 - Appetite
 - No bilateral pitting oedema

1. Transition phase

- a. Once the infant has appetite and no oedema, feed commercial infant formula, F-75 or Diluted F-100 according to body weight every 3 hours (8 times a day), following the *Integrated Management of Acute Malnutrition: National Guidelines*.
- b. Criteria to move to the rehabilitation stage:
 - Appetite
 - No bilateral pitting oedema
 - No other medical problems
 - At least 2 days in the transition phase (for wasted infants)

2. Rehabilitation Phase

- a. Feed the infant formula or F-100-diluted according to body weight every 3 hours (8 times a day)
- b. Monitor the same as for infants who can be breastfed.

II. CHILDREN 6–59 MONTHS

ADMISSION CRITERIA

Bilateral pitting oedema (any grade is sufficient criterion for admission)

OR

Mid-upper arm circumference (MUAC): < 11.5 cm

OR

Weight-for-height z-score (WHZ) < -3

AND

No appetite

AND/OR

- Medical complications (child not alert, lethargy, severe anaemia, high fever, persistent diarrhoea, convulsions, lower respiratory tract infection, dehydration, hypoglycaemia, hypothermia)

ON ADMISSION

1. Do emergency triage assessment and treatment. Examine and treat the child for emergency signs (obstructed breathing, severe respiratory distress, central cyanosis, shock, coma, convulsions, severe dehydration if diarrhoea, severe pneumonia, lethargy, blinding eye problems). If the child shows no emergency signs, assess for and immediately treat priority signs (bilateral pitting oedema, high fever, trauma or other urgent surgical condition, severe palmar pallor, poisoning, severe pain, respiratory distress, irritability or lethargy, visible severe wasting).
2. Take a medical history of the child (and the mother if the child is under 24 months of age).
3. Do a physical examination, including assessment for bilateral pitting oedema and anthropometric measurements (weight, length/height, MUAC).
4. Assess the results of lab tests if available to diagnose specific problems.
5. Register the child using a unique registration number.
6. Explain the treatment and ward procedures to the mother or caregiver.
7. If the child is 6–17 months of age, ensure provider-initiated HIV testing and counselling (PITC) for the mother. If she is seropositive and not on ART, provide a written referral slip to an HIV care and treatment clinic (CTC) or reproductive and child health (RCH)/prevention of mother-to-child transmission of HIV (PMTCT) site

for her and the child for eligibility assessment for ART (option MTCT B+). Follow up to ensure the mother and child were assessed.

8. If the child is 18 months of age or older, obtain mother or guardian consent for PITC and ensure the child is tested. If the child is seropositive, arrange escorted inpatient referral to a CTC for ART eligibility assessment. Follow up to ensure the mother and child were assessed.

III. CHILDREN 5–14 YEARS

ADMISSION CRITERIA

Bilateral pitting oedema (any grade is sufficient criterion for admission)

OR

MUAC

- 5–9 years: < 13.5 cm
- 10–14 years: < 16.0 cm

OR

WHZ

OR

Body mass index (BMI)-for-age z-score < -3

AND

No appetite

AND/OR

Medical complications (child not alert, lethargy, severe anaemia, high fever, persistent diarrhoea, convulsions, lower respiratory tract infection, dehydration, hypoglycaemia, hypothermia)

ON ADMISSION

1. Do emergency triage assessment and treatment. Examine and treat the child for emergency signs (obstructed breathing, severe respiratory distress, central cyanosis, shock, coma, convulsions, severe dehydration if diarrhoea, severe pneumonia, lethargy, blinding eye problems). If the child shows no emergency signs, assess for and immediately treat priority signs (bilateral pitting oedema, high fever, trauma or other urgent surgical condition, severe palmar pallor, poisoning, severe pain, respiratory distress, irritability or lethargy, visible severe wasting).
2. Take a medical history of the child (and the mother if the child is under 24 months of age).

3. Do a physical examination, including assessment for bilateral pitting oedema and anthropometric measurements (weight, length/height, MUAC).
4. Do a clinical examination of the child (and the mother if the child is under 24 months of age).
5. Assess the results of lab tests if available to diagnose specific problems.
6. Register the child using a unique registration number.
7. Explain the treatment and ward procedures to the mother or caregiver.
8. If the child is 6–17 months of age, ensure provider-initiated HIV testing and counselling () for the mother. If she is seropositive and not on ART, provide a written referral slip to a CTC or RCH/PMTCT site for her and the child for eligibility assessment for ART (option MTCT B+). Follow up to ensure the mother and child were assessed.
9. If the child is 18 months or older, obtain mother or guardian consent for PITC and ensure the child is tested. If the child is seropositive, arrange escorted inpatient referral to a CTC for ART eligibility assessment. Follow up to ensure the mother and child were assessed.

PHASES OF TREATMENT

Three phases of inpatient treatment of SAM:

1. Stabilisation phase (first 2–7 days)

The aim of this phase is to treat infections, correct electrolyte imbalances, eliminate bilateral pitting oedema and stabilise basic physiological processes. Stabilisation should start as soon as the child is seen at the health facility. Children do not gain weight during this phase. They remain in the stabilisation phase until their medical complications stabilise and appetite improves.

- a. Identify and begin treatment of medical complications (e.g., persistent vomiting, high fever, shock, severe dehydration, severe anaemia, hypoglycaemia, hypothermia, skin infections, respiratory or urinary tract infections).
- b. Immediately feed the child F-75 (containing 75 kcal and 0.9 g of protein per 100 ml) to avoid death from hypoglycaemia. Feed children without oedema 130 ml/kg of admission weight/day and children with oedema 100 ml/kg of admission weight/day (do not increase the volume). If diarrhoea is secondary to lactose intolerance, which can develop when a child is on F-75, stop giving F-75 and give cereal based F-75.
- c. Feed the child every 2 hours, day and night, for the first 2 days.

- d. If the child is breastfed, continue breastfeeding.
- e. Keep the child warm with head covered and airway free to prevent hypothermia.
- f. Immediately give a course of a first-line broad spectrum antibiotic according to national treatment protocols. If the child fails to improve within 48 hours, add a second-line antibiotic.
- g. If the child is on ART and losing weight, refer as needed for ART adherence counselling, side effects, opportunistic infections, immune reconstitution syndrome, late ART-related side effects, treatment failure if on ART more than 6 months (check CD4) and lipodystrophy.
- h. Counsel HIV-positive mothers on infant feeding in the context of HIV.
- i. Give a single dose of 5 mg folic acid on admission.
- j. Give children with either eye signs of vitamin A deficiency or recent measles a single dose of vitamin A (50,000 IU for infants < 6 months, 100,000 IU for children 6–11 months and 200,000 IU for children 12–59 months) on day 1, day 2 and day 15 (or at discharge). Do not give vitamin A to children consuming F-75, F-100 or ready-to-use therapeutic food (RUTF), which contain enough vitamin A to correct mild vitamin A deficiency. Giving high-dose vitamin A to children with SAM may be dangerous. If the child has bilateral pitting oedema, do not give vitamin A unless there are signs of deficiency.
- k. During the first 24 hours after admission, treat children with severe anaemia with a blood transfusion if haemoglobin (Hb) is < 4 g/dl (or 4–6 g/dl with respiratory distress). Therapeutic treatment is often associated with a drop in Hb concentration after 24 hours that should not be treated with a transfusion. Give 10 ml of packed red cells or whole blood per kg of body weight slowly over 3 hours. Ensure that the child fasts during and for at least 3 hours after a blood transfusion. If feasible, an exchange transfusion is preferable for children with SAM and severe anaemia.
- l. If it is not possible to test for HIV, give a transfusion only when the child's haemoglobin concentration is < 4 g/dl or the child has signs of life-threatening heart failure. Do not give iron during the initial phase of treatment, as it can have toxic effects and may reduce resistance to infection.
- m. If the child vomits during or after feeding, estimate the amount vomited and reoffer. If vomiting continues, offer one-half the amount twice as often (e.g., if feeding F-75 every 2 hours, offer 20 ml every hour until vomiting stops).
- n. Do not give any food other than F-75 and breast milk during stabilisation.

- o. Use a nasogastric tube (NGT) if the child cannot take sufficient F-75 by mouth (less than 75 percent of milk). Do not use a NGT longer than 3 days. Try to give F-75 by mouth every time before giving NGT.
- p. Never use IV fluids unless the child is in shock.
- q. Monitor and record each feed daily.
- r. Monitor respiratory rate and pulse rate every 4 hours and temperature twice a day.
- s. Monitor weight and oedema daily.

Criteria for moving from the stabilisation phase to the transition phase

- Appetite improved
- Bilateral pitting oedema reducing (from Grade +++ to Grade ++ or from Grade ++ to Grade +)
- Treatment of medical complications has begun and child is improving
- IV fluids (if any) and NGT feeding completed

2. Transition phase (2–3 days)

The aim of this phase is to prepare the child for the rehabilitation phase. The child gradually increases calorie intake, moving from low-energy F-75 to high-energy, high-protein F-100 (providing 100 kcal/100 ml and 2.9 g of protein/100 ml) or RUTF.

- a. For the first 48 hours (2 days), give F-100 every 3 hours (the same amount as the F-75 last given to the child).
- b. Beginning on the 3rd day, increase each feed by 10 ml as long as the child finishes the feeds, but do not exceed the maximum feed per day (220ml/kg/day) (see the F-100 reference card in Appendix 4. Target weight for discharge from OTC or rehabilitation phase of ITC' in the *Integrated Management of Acute Malnutrition: National Guidelines*.
- c. Monitor the child every 4 hours for the first 3 days for signs of fluid overload. Children are vulnerable to fluid overload and cardiac failure during this phase and should be transitioned carefully to avoid death.
 - a. If RUTF is used instead of F-100 (table 14), give the child an appetite test. If the child passes the appetite test, feed RUTF every 4 hours, day and night, according to weight in table 7. Offer drinking water freely with the RUTF.

Table 14. Amount of RUTF per day for inpatient SAM treatment, by weight of children 6–14 years of age

Child's weight (kg)	<i>No. of 92 g packets per day</i>
4.0–4.9	1.5
5.0–6.9	2.1
7.0–8.4	2.5
8.5–9.4	2.8
9.5–10.4	3.1
10.5–11.9	3.6
≥ 12.0	4.0

- b. To avoid the risk of bacterial proliferation, do not mix RUTF and F-75/F-100 or water together into a single food.

How to prepare F-100

- Dissolve one 114 g packet of F-100 powder in 500 ml of boiled and cooled water to make 600 ml of liquid F-100.

Criteria for moving back to the stabilisation phase

- Loss of appetite (taking less than 80 percent of feeds)
- Worsening oedema
- Medical conditions not improving or deteriorating
- Weight loss from significant refeeding diarrhoea
- Weight gain greater than 10g/kg/day (excess fluid retention)
- Signs of fluid overload (rapid increase in respiration rate, pulse rate, size of liver)
- Tense abdominal distension
- Any complication that requires IV infusion
- NGT needed for feeding

Criteria for moving to the rehabilitation phase (all of the following)

- Appetite (takes at least 90 percent of F-100)
- Complete loss of oedema
- Minimum stay of 2 days in the transition phase
- Resolving or no medical complications
- Child clinically well and alert

3. Rehabilitation phase (2–6 weeks)

The aim of this phase is to rebuild wasted tissue and gain weight. The child receives intensive feeding with F-100 or peanut-based RUTF for weight gain of more than 10 g/kg of body weight/day. Only a small proportion of children will remain in inpatient treatment throughout the rehabilitation phase. Most can be transferred to outpatient management if RUTF is available and caregivers can manage them at home and return every 2 weeks for RUTF. For inpatient clients:

- a. Feed the child F-100 every 3 hours, day and night. The target intake is 150–220 kcal/kg/day and 4–6 g of protein/kg/day.
- b. Use the F-100 reference table to determine the minimum and maximum volume of feeds.
- c. A child who eats less than the minimum is not being supervised while feeding or is unwell. A child who eats more than the maximum is at risk of fluid overload.
- d. As the child's weight increases, look again at the F-100 reference to check that intake is between the child's new minimum and maximum volume. If the child is recovering, the minimum and maximum volume will increase.
- e. If using RUTF, provide 200 kcal/kg/day (see the table above). Feed the child other food if demanded as long as the full amount of prescribed RUTF is consumed.
- f. Introduce solid food gradually after 1–3 days, as tolerated. Counsel the mother or caregiver to add oil and/or dried skim milk to local foods to increase their energy content. Give RUTF or F-100 between feeds of the solid diet.
- g. Continue routine medical treatment and monitor key parameters and danger signs.
- h. Monitor body temperature, pulse and respiratory rate, clinical signs daily, weight daily and MUAC weekly. Most children with SAM will gain weight and reach the discharge criteria after 2–4 weeks.
- i. If the child is on F-100, give iron/folic acid supplement following the national protocol. A child on RUTF should not be given iron/folic acid supplementation.
- j. Give a single dose of vitamin A to children who had oedema in the stabilisation phase once oedema has subsided.
- k. Deworm the child if older than 1 year, if not done in the past 6 months.
- l. Give a second dose of measles vaccine before discharge from hospital or at the end of treatment. If the child is under 9 months of age at the end of treatment, make an appointment for a second measles vaccination after the age of 9 months.

- m. If the child is HIV exposed or HIV positive, give Cotrimoxazole prophylaxis following national guidelines to prevent sepsis and other bacterial infections such as *Pneumocystis jirovecii* pneumonia.
- n. If outpatient treatment is available, inform the mother or caregiver where and when to go for outpatient care, give sufficient RUTF (usually for 1 week) to last until the next outpatient visit, and counsel on use of RUTF, hygiene, use of remaining medications for the child (ask the mother or caregiver to repeat back the instructions for their use), and what to do if the child's condition deteriorates.

Criteria for discharge and end of treatment

- MUAC \geq 12.5 cm OR WHZ $>$ -2
AND no bilateral pitting oedema for at least 2 weeks
AND no medical complications
AND child clinically well and alert

Counsel the client or caregiver on how to prepare and feed a balanced diet that provides at least 110 kcal/kg/day and sufficient vitamins and minerals to support continued growth, and to continue breastfeeding if the child is under 24 months of age. Before discharge from treatment, immunize the child according to the national immunization schedule. Inform the mother or caregiver where and when to bring the child for any required booster doses.

Criteria for transition from inpatient to outpatient care (Nutrition Care Plan C2) (all of the following)

- Appetite returned (passed appetite test)
- Medical complications resolved or resolving
- Bilateral pitting oedema reducing (from Grade +++ to Grade ++ or from Grade ++ to Grade +) **OR** resolved if the child had marasmic kwashiorkor on admission
- Child clinically well and alert

Give 1 week's ration of RUTF and link the caregiver with the health facility that will follow up the client in outpatient care until full recovery.

Criteria for failure to respond

- Failure to regain appetite by day 4
- Failure to start losing bilateral pitting oedema by day 4
- Bilateral pitting oedema still present by day 10
- Failure to gain at least 5 g per kg of body weight per day for 3 successive days after feeding freely on F-100

C2: Outpatient treatment of SAM with appetite and no medical complications in children 6 months–14 years

CRITERIA

WHZ < -3

OR

BMI-for-age (6–14 years) < -3

OR

MUAC

- 6–59 months: < 11.5 cm
- 5–9 years: < 13.5 cm
- 10–14 years: < 16.0 cm

AND

No bilateral pitting oedema

AND

Appetite

AND

No medical complications

FIRST VISIT

1. Take a medical history.
2. Do a physical examination, including assessment for bilateral pitting oedema and anthropometric measurements (weight, length/height, MUAC).
3. Do a clinical examination.
4. Give the child an appetite test.
5. Give a course of an Amoxicillin 15 mg/kg orally every 8 hours for 5 days or other first-line broad-spectrum antibiotic according to national treatment protocols.
6. Treat the child for any other infections according to the national protocol.
7. If the child is 6–17 months of age, ensure PITC for the mother. If she is seropositive and not on ART, provide a written referral slip to a CTC or RCH/PMTCT site for her and the child for eligibility assessment for ART (option MTCT B+). Follow up to ensure the mother and child were assessed.
8. If the child is older than 18 months, obtain mother or guardian consent for HIV testing and ensure the child is tested. If the child is seropositive, arrange escorted

inpatient referral to a CTC for ART eligibility assessment. Follow up to ensure the child was assessed.

9. If the child is HIV exposed or HIV positive, give Cotrimoxazole prophylaxis to prevent sepsis and other bacterial infections such as *Pneumocystis jirovecii* pneumonia according to the national protocol.
10. Counsel HIV-positive mothers on infant feeding in the context of HIV.
11. Test and treat the child for malaria according to the national treatment protocol (if the child was not treated for malaria during inpatient management of SAM).
12. Negotiate small doable actions that caregivers can do to improve hygiene practices (e.g., treating and safely storing drinking water and correct handwashing).
13. Give enough RUTF for 7 days, according to the child's weight (table 15).

Table 15. Amount of RUTF per day for outpatient SAM treatment, by weight of children 6–14 years of age

Child's weight (kg)	<i>No. of 92 g packets per day</i>
3.5–3.9	11
4.0–4.9	14
5.0–6.9	18
7.0–8.4	21
8.5–9.4	25
9.5–10.4	28
10.5–11.9	32
≥ 12.0	35

14. Make an appointment for the child to return in 1 week.

SECOND VISIT

1. On the second week of treatment, deworm the child (if older than 1 year and weighing more than 8 kg) according to national guidelines if not done in the past 6 months, and repeat every 6 months thereafter.
2. Give iron/folate only to children with anaemia.

3. If the child is on ART and losing weight, refer as needed for non-ART adherence, drug-related side effects, opportunistic infections, immune reconstitution syndrome, late ART-related side effects, treatment failure if on ART more than 6 months and lipodystrophy.
4. Supply RUTF for 7 days according to the child's weight.
5. Counsel the caregiver to encourage the child to eat home foods, but only after the child finished the entire day's ration of RUTF.
6. Review the hygiene actions negotiated with the caregiver and counsel on how to further improve hygiene practices.

THIRD VISIT

1. If the child has not received vitamin A within the previous month, give a single dose of vitamin A supplement according to national guidelines **unless** the child has bilateral pitting oedema.
2. Ensure that children 9–59 months of age have received measles vaccine according to national guidelines.

FOLLOW-UP MANAGEMENT

1. Follow up the child weekly to give an appetite test, do a medical assessment and take anthropometric measurements.
2. Supply RUTF weekly according to the child's weight until the child meets the discharge criteria.
3. Counsel the caregiver on the importance of regular clinic visits during treatment.
4. Counsel the caregiver on feeding the child a balanced, nutritious diet after completion of the RUTF.
5. Discharge the child when the child attains admission weight plus 15 percent for 2 consecutive weeks. If the child is not gaining weight, investigate medical reasons and schedule a home visit to assess the use of RUTF.
6. After discharge, monitor the child's growth monthly.

Criteria for moving back to Nutrition Care Plan C1 (inpatient care)

- Medical complications
- **AND** worsening oedema
- **OR** no weight gain
- **OR** weight loss for more than 2 weeks
- **OR** static weight for 5 weeks

OR no recovery after 2 months in outpatient care

Criteria for discharge and end of treatment

- MUAC \geq 12.5 cm OR WHZ $>$ -2
AND no bilateral pitting oedema for at least 2 weeks
AND no medical complications
AND ability to eat home foods
AND child clinically well and alert

Provide RUTF for no longer than 2 months. If the child fails to respond to treatment by that time, refer for further medical treatment.

Criteria for failure to respond

- Failure to start losing bilateral pitting oedema by the second visit
- Bilateral pitting oedema still present by the third visit
- Failure to gain at least 5 g per kg of body weight per day after feeding freely on RUTF

REFERENCE 16. NUTRITION CARE PLAN C FOR ADOLESCENTS 15 TO 17 YEARS OF AGE AND ADULTS WITH SAM

C1: Inpatient treatment of SAM with medical complications or no appetite in adolescents 15–17 years and adults

ADMISSION CRITERIA

Bilateral pitting oedema (any grade is sufficient criterion for admission)

OR

Confirmed unintentional weight loss of > 10 percent since last visit

OR

Body mass index (BMI) < 16

OR

BMI-for-age (15–17 years) <−3

OR

Mid-upper arm circumference (MUAC) < 18.5 cm (< 19.0 cm if pregnant/up to 6 months post-partum)

AND

Medical complications (severe dehydration, vomiting or anaemia; nausea; mouth sores/oral thrush, active tuberculosis (TB), or other opportunistic infection)

OR

No appetite

PHASES OF TREATMENT

Inpatient treatment of SAM has three phases: stabilisation, transition and rehabilitation.

- 1. Stabilisation phase.** Clients without appetite and with medical complications are admitted as inpatients to promote recovery of normal metabolic function and nutrition-electrolyte balance. Rapid weight gain is dangerous at this stage.
- 2. Transition phase.** A sudden change to a large dietary intake can be dangerous and lead to electrolyte imbalance. In this phase clients start to gain weight on a peanut-based ready-to-use therapeutic food (RUTF). This diet results in about 30 percent increase in energy intake.

- 3. Rehabilitation phase.** Clients with good appetite and no major medical complications can be admitted directly into this phase. Clients are given RUTF for weight gain of more than 8 g per kg of body weight per day.

ON ADMISSION

1. Give health and nutrition education in the waiting area.
2. Take a medical history.
3. Do a physical examination, including assessment for bilateral pitting oedema and anthropometric measurements (weight, height, BMI, MUAC).
4. Do a clinical examination.
5. Assess the results of lab tests.

1. Stabilisation phase (1–2 days)

- a. Provide routine medications (e.g., antimalarial medicines and broad-spectrum antibiotics).
- b. Give folic acid if the client shows signs of anaemia. Do not give iron in the stabilisation phase.
- c. Control severe dehydration using ReSoMal.
- d. Control hypothermia, hypoglycaemia, chronic diarrhoea, fever, nausea and vomiting.
- e. Take a medical history and do a clinical examination for pneumonia, tuberculosis (TB) or any other chronic illness. Begin treatment as appropriate.
- f. If the client's HIV status is unknown, ensure provider-initiated HIV testing and counselling for the client. If the client is HIV positive, arrange escorted referral to an HIV care and treatment clinic for registration and assessment for antiretroviral therapy (ART). Ensure the client is on Cotrimoxazole prophylaxis as prescribed.
- g. Deworm the client according to national guidelines.
- h. Give a high-dose vitamin A supplement of 200,000 IU if NO bilateral pitting oedema (otherwise wait until the oedema subsides).
- i. Give the client F-75 as follows:
 - Adolescents 15–17 years: 67 ml of F-75 (or 50 kcal per kg of body weight) per day
 - Adults 18 and older: 53 ml of F-75 (or 40 kcal per kg of body weight) per day
 - Pregnant women and women up to 6 months post-partum: According to age and weight as for other adults

- j. If F-75 is not available, dilute one 114 g packet of F-100 in 675 ml instead of 500 ml of boiled and cooled water to get F-100-Diluted.

Criteria for moving from the stabilisation phase to the transition phase

- Appetite
- No medical complications
- Bilateral pitting oedema reducing (from Grade +++ to Grade ++ or from Grade ++ to Grade +)

2. Transition phase (2–3 days)

- a. Transition gradually to avoid the risk of cardiac problems from excessive consumption of therapeutic milk.
- b. Gradually substitute F-100 for F-75, giving the following amounts:
 - Adolescents 15–17 years: 50 ml of F-100 or 50 kcal per kg of body weight per day
 - Adults 18 and older: 40 ml of F-100 or 40 kcal per kg of body weight per day
 - Pregnant women and women up to 6 months post-partum: According to age and weight as for other adults
- c. Continue routine medical treatment, electrolytes and micronutrient supplementation that began in the stabilisation phase and monitor weight, oedema, clinical signs and fluid intake.

Criteria for moving from the transition phase back to the stabilisation phase (all of the following)

- Appetite loss
- Worsening of medical complications
- Increasing/returning oedema

Criteria for moving from the transition phase to the rehabilitation phase (all of the following)

- Appetite
- Client clinically well and alert

3. Rehabilitation phase (2–4 weeks)

During the rehabilitation phase, the priority is to gradually introduce a solid diet of a variety of locally available foods enriched with fats and oils. Offer F-100 or RUTF between meals and at night to help meet the client's energy and micronutrient needs.

- a. If the client can eat other foods, give 3 packets of RUTF per day (21 packets for 7 days and 42 packets for 14 days).
- b. Table 16 is a sample meal plan for adults and adolescents who can eat other foods.

Table 16. Sample meal plan for clients during the rehabilitation phase

Breakfast	Bread with margarine and jam
Morning snack	1 packet of RUTF with boiled or treated water
Lunch	Vegetable soup Tomato and onion salad <i>Ugali</i> Liver and onions or kidney bean relish Fruit Boiled or treated water
Afternoon snack	1 packet of RUTF with boiled or treated water
Dinner	Tomato soup <i>Ugali</i> Fish and a green vegetable Fruit Boiled or treated water
Evening snack	1 packet of RUTF with boiled or treated water

- c. If the client is not eating other foods, give RUTF according to table 17.

Table 17. Amount of RUTF to feed adolescents 15–17 years and adults in the rehabilitation phase of inpatient SAM treatment, by client weight

Weight (kg)	No. of packets for 24 hours	No. of packets for 7 days	No. of packets for 14 days
< 30.0	3	21	42
30.0–39.9	4	28	56
40.0–59.9	5	35	70
≥ 60.0	6	42	84

Criteria for transitioning to Nutrition Care Plan C2 (outpatient care) (all of the following)

- Appetite
- No medical complications
- 10 percent weight gain over admission weight
- Ability to eat family foods

C2: Outpatient treatment of SAM with appetite and no medical complications in adolescents 15–17 years and adults

CRITERIA

Confirmed unintentional weight loss of > 10 percent since last visit

OR

BMI < 16.0

OR

BMI-for-age (15–17 years) ≥ -3 and < -2

OR

MUAC < 18.5 cm (< 19.0 cm if pregnant/up to 6 months post-partum)

AND

Appetite

AND

No medical complications

AND

Ability to manage malnutrition at home

FIRST VISIT

1. Take a medical history.
2. Do a physical examination, including assessment for bilateral pitting oedema and anthropometric measurements (weight, height, BMI, MUAC).
3. Do a clinical examination.
4. Give the client an appetite test. If this is not successful, admit the client for **inpatient** management of SAM.
5. Provide routine medication for severe malnutrition (broad-spectrum antibiotic, folic acid if client has anaemia and antimalarial medications) unless already given in inpatient care.
6. If the client's HIV status is unknown, ensure provider-initiated HIV testing and counselling (PITC).
7. If the client is HIV positive, arrange escorted referral to a CTC for assessment for ART. Ensure the client is on Cotrimoxazole prophylaxis as prescribed.

8. Deworm the client according to national guidelines.
9. Give a high-dose vitamin A supplement of 200,000 IU if NO bilateral pitting oedema (otherwise wait until the oedema subsides).
10. Give the client 3 packets of RUTF a day to last for 2 weeks.
11. Explain that RUTF and fortified-blended food (FBF) are meant only to treat the client's poor nutrition condition and will be provided for a limited time according to the standard protocol until nutritional status improves.
12. Explain how to eat the RUTF and prepare and eat the FBF.
13. Counsel the client to:
 - Get weighed regularly
 - Increase the energy density of the home diet
 - Manage symptoms through diet
 - Manage medicine-food interactions and medicine side effects
 - Wash hands correctly and practice good hygiene and sanitation
 - Drink only treated water
 - Exercise to strengthen muscles and improve appetite

FOLLOW-UP MANAGEMENT

1. Follow up the client weekly to give an appetite test, do a medical assessment and take anthropometric measurements. If the client is managed at home, weigh her or him after 7 days and every 2 weeks thereafter to monitor adequate weight gain (5 g per kg body weight per day).
2. Supply RUTF weekly until the client meets the discharge criteria.
3. Counsel the client on the importance of regular clinic visits during treatment.
4. Counsel the client on the importance of eating a balanced, nutritious diet after completion of the RUTF.
5. Give ferrous sulphate tablets, usually after 14 days, if the client has clinical signs of anaemia (pallor, fatigue, lower blood haemoglobin).
6. Monitor adherence to RUTF and FBF and any associated side effects (e.g., rash, diarrhoea, vomiting). Review the acceptability of the RUTF and FBF on each visit.

Criteria for transitioning back to Nutrition Care Plan C1 (inpatient care)

- No weight gain
OR weight loss for more than 2 months
OR worsening bilateral pitting oedema

Criteria for transitioning to Nutrition Care Plan B (moderate acute malnutrition)

- 10 percent weight gain over entry weight
OR BMI \geq 16.0 **OR** MUAC \geq 18.5 cm (\geq 19.0 cm if pregnant/up to 6 months post-partum)
- **AND** appetite
- **AND** some mobility
- **AND** ability to eat home foods

REFERENCE 17. NUTRITION CARE PLAN B FOR CHILDREN 6 MONTHS TO 14 YEARS OF AGE WITH MODERATE ACUTE MALNUTRITION (MAM)

CRITERIA

Confirmed weight loss of > 5 percent since last visit

OR

Growth curve flattening

OR

Weight-for-height z-score (WHZ) ≥ -3 and < -2

OR

Body mass index (BMI)-for-age z-score (5–14 years) ≥ -3 and < -2

OR

Mid-upper arm circumference (MUAC)

- 6 to 59 months: ≥ 11.5 and < 12.5 cm
- 5 to 9 years: ≥ 13.5 and < 14.5 cm
- 10 to 14 years: ≥ 16.0 and < 18.5 cm

MEDICAL CARE

1. Take a medical history.
2. Do a physical examination, including assessment for bilateral pitting oedema and anthropometric measurements (weight, height, MUAC).
 - a. Do a clinical examination.
 - b. Refer the child for medical treatment when indicated.
 - c. If the child is 6–17 months of age, ensure provider-initiated HIV testing and counselling (PITC) for the mother. If she is seropositive and not on antiretroviral therapy (ART), provide a written referral slip to an HIV care and treatment clinic (CTC) or prevention of mother-to-child transmission of HIV (PMTCT) site for her

and the child for eligibility assessment for ART (option MTCT B+). Follow up to ensure the mother and child were assessed.

- d. If the child is more than 18 months of age, obtain mother or guardian consent for HIV testing and ensure the child is tested. If the child is seropositive, arrange escorted referral to a CTC for ART eligibility assessment. Follow up to ensure the child was assessed.
- e. If the child is on ART and losing weight, refer as needed for non-ART adherence, side effects, opportunistic infections, immune reconstitution syndrome, late ART-related side effects, treatment failure if on ART more than 6 months (check cluster of differentiation 4 [CD4] counts) and lipodystrophy.
- f. If the child is HIV-positive and not on ART, give Cotrimoxazole prophylaxis to prevent sepsis and other bacterial infections such as *Pneumocystis jiroveci* pneumonia following national guidelines.
- g. Counsel HIV-positive mothers on infant feeding in the context of HIV.
- h. Deworm children over 1 year of age according to national guidelines if not done in the past 4 months, and repeat every 6 months.
- i. If the child has not received a vitamin A supplement in the past 6 months, give 50,000 IU for children under 6 months, 100,000 IU for children 6–11 months and 200,000 IU for children 12 months and older.
- j. Assess for anaemia (palmar pallor and/or low haemoglobin) if testing is available and refer cases of severe anaemia for treatment as per Integrated Management of Childhood Illness (IMCI) guidelines.

NUTRITION CARE

1. Find out how much and what kind of foods the child is eating. If the child is not eating enough food for her or his age or the diet is not varied or enriched to increase energy, counsel the caregiver.
2. Counsel the caregiver to give the child **20–30 percent more energy** on top of the daily requirements or intake of a healthy child of the same age. See table 18 for examples of what to feed a child to provide 20–30 percent more energy.

Table 18. Recommendations for feeding children 6 months–14 years with MAM

Age	Regular meals and snacks	Examples of foods to provide 20–30% more energy in addition to normal meals (any of the foods listed)
6–11 months	<p>Continue to breastfeed, or replacement feed if:</p> <ul style="list-style-type: none"> ▪ The household and community have safe water and sanitation. ▪ The mother or caregiver can reliably provide enough formula to support normal infant growth and development. ▪ The mother or caregiver can prepare formula cleanly and frequently enough that it is safe and carries a low risk of diarrhoea and malnutrition. ▪ The mother or caregiver can feed formula exclusively for 6 months. ▪ The family supports this practice. ▪ The mother or caregiver can access comprehensive child health services. <p>At 6 months: Breast milk or safe replacement milk (see conditions above) and soft porridge or well-mashed food 2 times a day</p> <p>At 7–8 months: Breast milk and at least $\frac{2}{3}$ cups (250 ml) of mashed food 3 times a day</p> <p>At 9–11 months: Breast milk and finely chopped or mashed food 3 times a day and 1 snack</p>	<p>$\frac{1}{2}$ cup of <i>togwa</i></p> <p>2 teaspoons of margarine or oil and 1–2 teaspoon of sugar added to porridge 3 times a day</p> <p>Finely crushed nuts added to porridge</p>
12–23 months	<p>Continue to breastfeed or replacement feed if the conditions for safe replacement feeding are met.</p> <p>3 meals (at least 1 full cup) of chopped or mashed family foods and 2 snacks a day</p>	<p>1 cup of <i>togwa</i></p> <p>1 extra cup of milk</p> <p>1 slice of bread with groundnut paste</p> <p>Boiled green banana OR sweet potato OR cassava</p>

Age	Regular meals and snacks	Examples of foods to provide 20–30% more energy in addition to normal meals (any of the foods listed)
2–5 years	3 meals and 2 snacks a day	1 cup of <i>togwa</i> 1 extra cup of milk 1 slice of bread with groundnut paste Boiled green banana OR sweet potato 1 handful of nuts
6–9 years	3 meals and 2 snacks a day	1 cup of <i>togwa</i> 1 extra cup of milk, 1 slice of bread OR boiled green banana OR sweet potato OR cassava with nut paste OR 1 handful of nuts
10–14 years	3 meals and 2 snacks a day	4 slices of bread 1 handful of nuts Boiled green banana OR cassava OR sweet potatoes with EITHER nut paste or 1 handful of nuts

3. Explain to the caregiver that the child will receive specialised food products prescribed according to the standard protocol and eligibility criteria only for 3 months to correct his or her nutrition condition and that it is important to improve the regular diet to help the child recover and maintain good nutritional status. Counsel using **Job Aid 1. A Balanced Diet**.
4. Provide enough fortified-blended food (FBF) to last for 1 month.
 - 100 g/day of FBF for children 6 months to 9 years
 - 200 g/day of FBF for children 10 to 14 years
5. Explain to the caregiver:
 - How to prepare and use the FBF at home
 - How to manage symptoms such as oral thrush, loss of appetite, nausea, anaemia and diarrhoea through diet
 - How to manage drug-food interactions
 - How to treat water (by boiling or filtering) to make it safe to drink
 - When to wash hands and how to wash them correctly
 - How to modify household foods to make them easy to eat and more nutritious
 - How to continue feeding a sick child and how to feed a child responsively

6. If the child is NOT on FBF, give a 1-month supply of a daily multiple micronutrient supplement providing about 1 RDA of a wide range of vitamins and minerals.
7. Counsel the caregiver on how to use specialised food products.
 - Do not share the FBF with other household members.
 - Ensure the child finishes all the FBF for that day during that day.
 - Continue to give the child medicine as advised by the health care provider.
 - Continue to breastfeed while the child is eating the FBF.
 - Continue to feed the child a varied diet of household food and give the RUTF and FBF as a snack.
 - Cover the food and keep it away from animals.
 - Have the child weighed every month.
 - Feed the child three meals a day and snacks.
 - Improve the home diet by preparing a variety of local foods.
 - Increase the energy density of foods by adding groundnut paste, sugar, oil, eggs or milk.
8. Follow up the child every month to monitor changes in appetite and eating patterns.
9. Weigh the child on each visit.
10. If the child has not gained weight for 3 months or has continued to lose weight for 2 months, refer her or him for specialised medical assessment.

Criteria for transitioning to Nutrition Care Plan A (normal nutritional status)

- WHZ ≥ -2
- **AND** weight gain for two consecutive visits

REFERENCE 18. NUTRITION CARE PLAN B FOR ADOLESCENTS 15 TO 17 YEARS OF AGE AND ADULTS WITH MAM

CRITERIA

Confirmed unintentional weight loss of > 5 percent since last visit

OR

Body mass index (BMI) ≥ 16.0 to < 17.0 (mild malnutrition is BMI ≥ 17.0 to < 18.5)

OR

BMI-for-age (15–17 years) ≥ -3 and < -2

OR

Mid-upper arm circumference (MUAC)

- Non-pregnant/post-partum: ≥ 18.5 to < 22.0 cm
- Pregnant/up to 6 months post-partum: ≥ 19.0 cm to < 23.0 cm

OR

Chronic lung disease, tuberculosis (TB), persistent diarrhoea, other chronic opportunistic infection or malignancy

MEDICAL CARE

1. Take a medical history.
2. Do a physical examination, including assessment for bilateral pitting oedema and anthropometric measurements (weight, height, BMI, MUAC).
3. Do a clinical examination.
4. Refer the client for treatment of medical conditions when indicated.
5. If the client's HIV status is unknown, ensure provider-initiated HIV testing and counselling (PITC). If the client is seropositive, arrange escorted referral to an HIV care and treatment clinic (CTC) for registration and assessment for antiretroviral therapy (ART). Ensure the client is on Cotrimoxazole prophylaxis as prescribed.

6. Ensure that any HIV positive client who is not on ART receives Cotrimoxazole prophylaxis following national guidelines.
7. If the client is on ART and losing weight, refer for assessment (or assess) for ART adherence, drug-related side effects, opportunistic infections, immune reconstitution syndrome, treatment failure if on ART for more than 6 months (check cluster of differentiation 4 [CD4] counts) and lipodystrophy.
8. Deworm the client according to national guidelines if not done in the past 4 months, and repeat every 6 months.
9. Assess the client for anaemia and give iron supplementation as needed according to national guidelines.

NUTRITION CARE

1. Counsel the client to improve her or his diet from household food and increase energy intake by 20–30 percent on top of daily requirements by eating more food more often, including snacks between meals; adding groundnut paste, sugar, eggs or milk to enrich food; and adding spices or lemon juice to improve the flavour of food. A client can eat the following snacks between meals to increase energy intake:
 - 1 mug (250 ml) of porridge
 - 1 ½ medium sweet potatoes
 - 3½ large coffee cups of boiled milk
 - 2½ average-sized bananas
 - 1 large spoonful of boiled pumpkin
 - 1 large spoonful of boiled sweet potato
 - 1 large spoonful of meat sauce with 1 small spoonful of vegetables
2. Explain that the client will receive supplementary food only until her or his nutrition condition improves and that it is important to improve the regular diet to recover and maintain good nutritional status. Counsel using **Job Aid 1. A Balanced Diet**.
3. Give the client 300 g per day of fortified-blended food (FBF) to last until the next visit.
4. Explain to the client:
 - How to prepare and use the FBF at home
 - How to manage symptoms through diet
 - How to manage drug-food interactions
 - How to maintain good sanitation and hygiene
5. **Counsel the client** to:
 - Eat the FBF as a snack, not to replace normal meals.
 - Not share it with other household members.

- Cover the FBF and keep it away from animals.
 - Finish all the FBF provided for a day within the day.
 - Continue taking medicines as advised by the health care provider.
 - Get weighed monthly.
 - Eat three meals PLUS at least two snacks a day.
 - Eat a variety of foods.
 - Increase the energy density of foods by adding groundnut paste, sugar, eggs or milk.
 - Get physical exercise to strengthen muscles and improve appetite.
6. Follow up with the client every month and monitor changes in eating patterns and weight on each visit.
 7. Refer the client for medical assessment if she or he has not gained weight for 3 months or longer or continues to lose weight for 2 months or longer.
 8. **Note:** Do not treat clients with **mild** malnutrition with FBF. Instead, counsel them to prevent malnutrition through improved complementary feeding for infants older than 6 months (for post-partum women) and a balanced and nutritious diet and food and water safety.

Criteria for transitioning to Nutrition Care Plan A (normal nutritional status)

- BMI > 18.5 (MUAC > 23.0 for women who are pregnant or up to 6 months post-partum) on two consecutive visits OR child reaches 6 months of age (for women who are up to 6 months post-partum)
- **AND** steady weight gain

REFERENCE 19. NUTRITION CARE PLAN A FOR CHILDREN 6 MONTHS TO 14 YEARS OF AGE WITH NORMAL NUTRITIONAL STATUS

CRITERIA

Weight gain parallel to or higher than median growth curve

OR

Weight-for-height z-score (WHZ) ≥ -2 to $< +2$

OR

Body mass index (BMI)-for-age z-score (5–14 years) ≥ -2 and $\leq +1$

OR

Mid-upper arm circumference (MUAC)

- 6 to 59 months: ≥ 12.5 cm
- 5 to 9 years: ≥ 14.5 cm
- 10 to 14 years: ≥ 18.5 cm

NUTRITION CARE

1. Take a medical history.
2. Do a clinical examination.
3. Refer the client for treatment of medical conditions when indicated.
4. If the child is 6–18 months of age, ensure provider-initiated HIV testing and counselling (PITC) for the mother. If she is seropositive and not on antiretroviral therapy (ART), provide a written referral slip to an HIV care and treatment clinic (CTC) or reproductive and child health (RCH)/prevention of mother-to-child transmission of HIV (PMTCT) site for her and the child for eligibility assessment for ART (option MTCT B+). Follow up to ensure the mother and child were assessed.
5. If the child is more than 18 months of age, obtain mother or guardian consent for HIV testing and ensure the child is tested. If the child is seropositive, arrange escorted referral to an HIV CTC for ART eligibility assessment. Follow up to ensure the child was assessed.

6. If the child is on ART and losing weight, refer as needed for non-ART adherence, side effects, opportunistic infections, immune reconstitution syndrome, late ART-related side effects, treatment failure if on ART more than 6 months (check cluster of differentiation 4 [CD4] counts) and lipodystrophy.
7. If the child is HIV-positive and not on ART, give Cotrimoxazole prophylaxis to prevent sepsis and bacterial infections such as *Pneumocystis jirovecii* pneumonia following national guidelines.
8. Counsel HIV-positive mothers on infant feeding in the context of HIV and management of HIV-related symptoms through diet.
9. Counsel the caregiver to feed the child enough food to meet the 10 percent increase in energy and micronutrient needs caused by HIV, in small meals throughout the day. See table 19 for suggestions on how to meet 10 percent energy increase needs for children.

Table 19. Recommendations for feeding children 6 months–14 years with normal nutritional status

Age	Regular meals and snacks	Additional food to provide 10% more energy
6–11 months	<p>Continue to breastfeed (or replacement feed if this meets the six World Health Organization [WHO] conditions for safe replacement feeding*).</p> <p>6 months: Breast milk (or other milk if this meets the six WHO conditions for safe replacement feeding*) and soft porridge or well-mashed food 2 times a day</p> <p>7–8 months: Breast milk (or other milk if this meets the six WHO conditions for safe replacement feeding*) and at least ⅔ cup (250 ml) of mashed food 3 times a day</p> <p>9–11 months: Breast milk (or other milk if this meets the six WHO conditions for safe replacement feeding*) and finely chopped or mashed food 3 times a day and 1 snack</p>	<p>1 cup of porridge or snack a day</p> <p>2 teaspoons of margarine or oil and 1–2 teaspoons of sugar added to porridge</p>
12–23 months	<p>Continued breastfeeding</p> <p>3 meals (at least 1 full cup) of chopped or mashed family foods and 2 snacks a day</p>	<p>1 cup of porridge or snack a day</p> <p>2 teaspoons of margarine or oil and 1–2 teaspoons of sugar added to porridge</p>
2–5 years	<p>3 meals and 2 snacks a day</p>	<p>1 cup of porridge</p> <p>1 extra cup of milk OR fermented milk</p>

Age	Regular meals and snacks	Additional food to provide 10% more energy
6–9 years	3 meals and 2 snacks a day	1 cup of porridge 1 extra cup of full cream milk OR fermented milk OR <i>togwa</i> 1 mashed average sweet potato
10–14 years	3 meals and 2 snacks a day	1 cup of porridge 1 cup of yogurt OR fermented milk 1 slice of bread with groundnut paste 1 handful of nuts

* The six WHO conditions for safe replacement feeding are: 1) safe water and sanitation are assured, 2) the caregiver can reliably provide enough formula to support normal infant growth and development, 3) the caregiver can prepare infant formula safely and frequently enough to avoid the risk of diarrhoea and malnutrition, 4) the caregiver can feed the formula exclusively for the first 6 months of life, 5) the family and community support this practice, and 6) the caregiver can access comprehensive child health services.

10. Counsel the caregiver to:

- Feed the child a variety of foods from all the food groups
- Take the child for monthly weighing
- Continue normal RCH clinic follow-up
- Increase the energy density of the diet at home (give examples)
- Manage symptoms and drug side effects through diet
- Seek prompt treatment of illness

11. Negotiate small doable actions to improve hygiene and sanitation practices (e.g., boiling or filtering drinking water, washing hands with soap and rinsing them under flowing water).

12. Give vitamin A according to national guidelines if the child has not received a supplement within the past 6 months, and repeat every 6 months.

13. Deworm the child according to national guidelines if not done in the past 4 months, and repeat every 6 months thereafter.

14. Make sure the child has received all immunisations.

15. Continue to weigh the child every month according to the visit schedule.

16. Review the child's progress at least every 2 months. Tell the caregiver to return earlier if problems arise.

REFERENCE 20. NUTRITION CARE PLAN A FOR ADOLESCENTS 15 TO 17 YEARS OF AGE AND ADULTS WITH NORMAL NUTRITIONAL STATUS

CRITERIA

Body mass index (BMI) ≥ 18.5

OR

BMI-for-age z-score (15–17 years) ≥ -2 and $\leq +1$

OR

Mid-upper arm circumference (MUAC)

- Non-pregnant/post-partum: ≥ 22.0 cm
- Pregnant/up to 6 months post-partum: ≥ 23.0 cm

NUTRITION CARE

1. Take a medical history.
2. Do a clinical examination.
3. Refer the client for treatment of medical conditions when indicated.
4. If the client's HIV status is unknown, ensure provider-initiated HIV testing and counselling (PITC). If the client is seropositive, arrange escorted referral to an HIV care and treatment clinic (CTC) for registration and assessment for antiretroviral therapy (ART). Ensure the client is on Cotrimoxazole prophylaxis as prescribed.
5. Counsel the client to:
 - Get weighed regularly
 - Manage symptoms of illness through diet
 - Adhere to ART if HIV positive
 - Manage drug-food interactions and drug side effects
 - Correctly wash hands and practice good hygiene and sanitation
 - Drink boiled or treated water
 - Meet the increased energy needs caused by HIV in addition to an adequate diet (table 20)

Table 20. Dietary recommendations for adolescents 15–17 years with normal nutritional status

Group	Regular meals and snacks	Snacks providing 10% <u>extra</u> energy (about 280 kcal/day) for HIV-positive clients
Adolescents and adults	3 meals a day and 1 snack (enough food to provide 2,000–2,5080 kcal/day)	Any one of these: 1 mug (250 ml) of porridge 2 medium sweet potatoes
Women who are pregnant and up to 6 months post-partum	3 meals a day and 2 snacks (enough food to provide 2,460–2,570 kcal/day)	1 large coffee cup of milk 2½ average-size bananas 2 avocados 1 small ladle of meat sauce and ½ a small ladle vegetables 200 g of fried fish

REFERENCE 21. NUTRITION CARE PLAN D FOR CHILDREN 6 MONTHS TO 14 YEARS OF AGE WITH OVERWEIGHT AND OBESITY

CRITERIA FOR OVERWEIGHT

Weight-for-height z-score (WHZ) $> +2$ to $\leq +3$

OR

Body mass index (BMI)-for-age z-score (5–14 years) $\geq +1$ to $\leq +2$

CRITERIA FOR OBESITY

WHZ $> +3$

OR

BMI-for-age z-score (5–14 years) $> +2$

NUTRITION CARE

1. If the client is obese, refer for medical assessment to rule out diabetes or high cholesterol.
2. Counsel the caregiver to:
 - Feed more fruits and vegetables, fewer fried and sugary foods and water instead of juice or soda
 - Encourage at least 1 hour of exercise a day

REFERENCE 22. NUTRITION CARE PLAN D FOR ADOLESCENTS 15 TO 17 YEARS OF AGE AND ADULTS WITH OVERWEIGHT AND OBESITY

CRITERIA FOR OVERWEIGHT

Body mass index (BMI) ≥ 25.0 to < 30.0

OR

BMI-for-age z-score (15–17 years) $\geq +1$ to $\leq +2$

CRITERIA FOR OBESITY

BMI > 30.0

OR

BMI-for-age z-score (15–17 years) $> +2$

NUTRITION CARE

1. If the client is obese, refer for medical assessment to rule out diabetes or high cholesterol.
2. Counsel the client to:
 - Eat more fruits and vegetables, fewer fried and sugary foods and water instead of juice or soda
 - Get at least 1 hour of exercise a day

REFERENCE 23. NUTRITION EDUCATION

Nutrition education is conveying information to a group of people on topics of general interest. Time clients spend in waiting rooms is a good opportunity to provide nutrition education.

- Keep nutrition education sessions to no longer than 15 minutes.
- Prepare topics (table 21 lists suggestions) and materials in advance.
- Use simple language.
- Allow time for questions. If a client asks a question you cannot answer, say that you will find out the information and let them know next time instead of giving an answer you are not sure of.
- Give clients government-approved brochures and booklets on nutrition and use these to prepare education sessions. Such materials have been developed by the Tanzania Food and Nutrition Centre (TFNC), Ministry of Health, Community Development, Gender, Elderly and Children (MOHCDGEC) and Centre for Counselling, Nutrition and Health Care (COUNSENUH).

Table 21. Nutrition education topics

Topic	Action	Message
Causes and consequences of malnutrition	<ul style="list-style-type: none"> ▪ Refer to Reference 1. Key Nutrition Terms. 	<ul style="list-style-type: none"> ▪ Malnutrition is caused by poor access to food, inadequate intake, digestion and absorption problems and poor food utilisation and excretion of waste. ▪ Malnutrition affects self-esteem, health and the body's ability to use medicine. ▪ Malnutrition increases the severity of illness and can shorten your life.
Importance of anthropometric measurement	<ul style="list-style-type: none"> ▪ Regularly assess nutritional status to identify malnutrition before medical complications develop that require inpatient treatment. 	<ul style="list-style-type: none"> ▪ When you are weighed, remove everything from your pockets (e.g., cell phone), put down anything you are carrying (e.g., handbag, purse) and remove your shoes and extra clothing. ▪ When your height is measured, stand up straight. ▪ When your mid-upper arm circumference (MUAC) is measured, the health care provider

Topic	Action	Message
		<p>will measure halfway between your shoulder and elbow and place the tape there. You should hold your arm down and loose.</p> <ul style="list-style-type: none"> ▪ If measurements are not done correctly, your nutritional status may be diagnosed incorrectly. ▪ Ask for your measurements in writing.
Increased energy and nutrient needs caused by infection or physiological status (e.g., pregnancy, lactation, and child growth)	<ul style="list-style-type: none"> ▪ Address challenges clients face in meeting additional food needs. ▪ Explain how to eat nutritionally adequate diets using local foods. 	<ul style="list-style-type: none"> ▪ Eat at least ¼ cup (150 ml) of food at each meal. ▪ If you are sick or lack appetite, eat small meals often with friends and family members. ▪ If you are sick, make your food tastier, enrich it or mash it to make it easier to swallow. ▪ Eat a variety of foods, including fruits and vegetables, to get the vitamins and minerals your body needs to fight infection.
Critical Nutrition Actions (CNAs)	<ul style="list-style-type: none"> ▪ Refer to Reference 6. Critical Nutrition Actions with Messages and Explanations. 	
Dietary management of common symptoms	<ul style="list-style-type: none"> ▪ Explain how to modify foods to manage different symptoms. ▪ Explain that dietary management complements clinical treatment. 	<ul style="list-style-type: none"> ▪ Cover 2–3 symptoms per session. ▪ Refer to Reference 28. Food and Nutrition Guidance for HIV and Tuberculosis Medications.
Drug-food interactions	<ul style="list-style-type: none"> ▪ Discuss: <ul style="list-style-type: none"> – The importance of adequate nutrition to achieve the full benefits of medicines, including antiretroviral therapy (ART) and tuberculosis (TB) medications – Side effects of antiretroviral medications (ARVs) 	<ul style="list-style-type: none"> ▪ Continue to take medicines even when sick. ▪ Take medicines as prescribed or they may not work and could be dangerous. ▪ Drink plenty of clean, safe (boiled or treated) water. ▪ Most side effects end after the first 3 months. ▪ Tell your health care provider if you are taking traditional herbs or

Topic	Action	Message
	<ul style="list-style-type: none"> – The effect of traditional herbs on ARVs 	<p>other supplements.</p> <ul style="list-style-type: none"> ▪ Avoid alcohol, which can interfere with the effectiveness of ARVs.
Importance of safe water and food	<ul style="list-style-type: none"> ▪ Explain the infections caused by dirty water and faeces. ▪ Demonstrate correct handwashing using soap and running water. ▪ Counsel on handwashing at critical times. ▪ Discuss how to handle food. ▪ Discuss how to prevent diarrhoea and other food-borne disease. ▪ Discuss how to prevent malaria. 	<ul style="list-style-type: none"> ▪ Drink only treated or boiled water and use treated or boiled water to take medicines. ▪ Store drinking water safely. ▪ Wash your hands before and after preparing and eating food, before feeding someone or giving medicine and after defecating or cleaning a baby or sick person. ▪ Always use a latrine. ▪ Do not eat raw or undercooked meat or eggs. ▪ Remove any standing water to prevent mosquitoes from breeding.
Eating a balanced diet	<ul style="list-style-type: none"> ▪ Advise on eating nutritious local foods (e.g., wild fruits and vegetables). ▪ Discuss how to improve the nutrient and energy content of food by enriching, fortifying and steaming. ▪ Discuss improving digestibility by germinating and fermenting foods. ▪ Discuss improving flavour by roasting, fermenting and adding spices. ▪ Demonstrate mashing, pureeing or sip feeding to help swallowing. 	<ul style="list-style-type: none"> ▪ Eat a variety of foods. ▪ Eat foods from all five food groups every day. ▪ Eat three meals and two snacks every day. ▪ Eat foods that are in season. ▪ Eat small, frequent meals when you are sick. ▪ Steam vegetables to preserve nutrients. ▪ Improve the digestibility of foods by germinating and fermenting them at home. ▪ Improve the flavour of foods by adding spices such as garlic and ginger or lemon juice. ▪ Eat fats, sugar and salt in moderation to avoid diet-related chronic diseases.
Backyard gardens and raising small animals	<ul style="list-style-type: none"> ▪ Explain that gardens and small animals can provide nutrients to improve nutrition. 	<ul style="list-style-type: none"> ▪ Grow fruits, vegetables, herbs and spices to eat at home. ▪ Eat animal protein, fruits and vegetables to improve immunity.

REFERENCE 24. NUTRITION COUNSELLING

Counselling is non-directive, non-judgemental, dynamic, empathetic interpersonal communication to help someone learn how to use information to make a choice or solve a problem.

Nutrition counselling aims to:

- Effectively communicate behaviours the client can practice to improve nutrition
- Help the client try small, doable actions to improve nutrition
- Judge when to refer the client for further assessment or counselling

Before the counselling starts

- Make sure you have at least 15 minutes to spend with the client.
- Choose a place where the client will be comfortable and there will be no intrusions.
- Understand the content of the materials you need to counsel your client.
- Have the following tools and materials handy:
 - Nutrition counselling materials (e.g., the TFNC infant and young child nutrition counselling flipchart *Ulishaji Watoto Wachanga na Wadogo Katika Jamii: Bango Kitita Lenye Ujumbe Muhimu* (2013))
 - Meal planning tools (e.g., **Job Aid 1. A Balanced Diet**)
 - Drug-food planning job aid (**Reference 28. Food and Nutrition Guidance for HIV and Tuberculosis Medications**)
 - Referral form
 - Register or calendar to record the next appointment
 - Client's **Nutrition Assessment and Management Form**
 - Notes on previous actions if this is a follow-up visit

During counselling

- Consider:
 - What is the client's problem or need?
 - What is the client's context?
 - What is the desired behaviour?
 - What are the barriers to and motivations for the behaviour?
 - What messages should I give the client?
 - What encouragement does the client need to adopt and sustain the desired behaviour?
- Discuss the results of the client's anthropometric, clinical and dietary assessment.
- Agree on a nutrition goal and expected outcomes.

- Negotiate one or two small doable actions that the client can try before the next visit. Too many changes at a time will overwhelm the client.
- On the next visit, discuss the client’s experience trying the recommend action.
- Add other actions as the first ones are achieved.

Effective counselling skills

- Use non-verbal communication such as smiling or nodding to encourage the client to talk and feel comfortable.
- Use responses or gestures that show you are interested in what the client is saying.
- Ask open-ended questions instead of questions that the client can only answer with ‘yes’ or ‘no.’
- Reflect back what the client says to show you are listening.
- Avoid using words that sound as if you are judging the client.
- Recognise and praise what the client is doing correctly.
- Accept what the client thinks and feels.
- Give practical help.
- Give a little relevant information at a time.
- Make one or two suggestions, not commands.
- Use simple language when discussing technical terms.

Table 22 lists techniques for effective counselling.

Table 22. Counselling techniques

Technique	Details
Establish a relationship	Greet the client (shake hands if appropriate).
	Offer the client a seat.
	Introduce yourself to the client.
	Lean forward when talking.
	Make eye contact when talking to the client.
	Show interest in the client.
	Maintain professional conduct.
Question	Ask questions relevant to the topic of discussion.
	Ask open-ended questions.

Technique	Details
	Avoid closed-ended (yes or no) questions.
	Use a questioning style that reflects interest, concern and care rather than interrogation.
Listen well	Look at the client.
	Listen carefully and actively.
	Use body language to indicate attention to the speaker.
	Make eye contact to indicate interest and care.
	Treat the client with respect and acceptance.
	Use encouraging words such as 'Yes' and 'Okay'.
	Occasionally sum up the client's statements.
	Notice the client's verbal and non-verbal cues.
	Wait after asking questions to allow the client to formulate responses or questions.
Empathise	Recognise and praise what the client is doing correctly.
	Reflect the client's statements to show she or he was understood.
	Accept what the client thinks and feels.
	Avoid words that sound judgemental.
Provide information	Clearly communicate important nutrition information based on the client's knowledge, cultural values and beliefs.
	Use simple language.
	Give a little relevant information at a time.
	Make one or two suggestions without giving commands.
Clarify	Check what the client said to ensure correct understanding.
	Use phrases such as, 'Did I understand you correctly when you said...?'
Find solutions	Suggest acceptable, affordable and feasible options.
	Help the client find practical and realistic solutions.
	Convince the client to implement solutions.
	Help the client verbalise what other people may say about the suggested solutions.

Technique	Details
Summarise	Summarise the information the client has shared.
	Check whether the client understood the important concerns or information.
	Praise and reaffirm things the client is doing right.
Follow up	Discuss appropriate follow-up with the client.
	Encourage the client to adhere to the follow-up plan.

Table 23 lists possible solutions for common counselling challenges.

Table 23. Nutrition counselling challenges and how to address them

Challenge	Possible solution
Clients may not have access to nutritious foods.	Counsel clients how to use available resources to access a nutritious diet. Refer clients or caregivers to programmes that provide food or economic support.
Clients' families may not be aware that clients need special foods or care.	Counsel caregivers and family members on the foods needed to prevent and recover from illness.
Caregivers may be tired of providing special care for long-lasting nutrition problems.	Refer caregivers to community support services if available.
Clients may not recognise the signs of malnutrition.	Show the client pictures of signs of malnutrition.
People may be ashamed to reveal malnutrition.	Explain that anyone can become malnourished.
Families may believe illness is caused by supernatural forces.	Without arguing with this belief, present evidence of improvement from nutrition interventions.
Clients may not know their own/their children's HIV status.	Refer clients and their children for HIV testing and counselling if they do not know their status.
Caregivers and families may not know the client's HIV status.	Discuss whether clients feel willing to disclose their status and mediate the disclosure if the client agrees.
Stigma makes clients reluctant to talk about their HIV status.	Counsel HIV-positive clients in private and assure them that all information will be kept confidential.
Caregivers may be too ill to provide	Refer caregivers to home-based care or home

Challenge	Possible solution
quality care.	nursing services.
Counsellors may lack information or experience.	Take advantage of training in nutrition assessment, counselling and support (NACS) and practice NACS skills on the job.
Clients may feel other issues need more attention.	Explain the importance of nutrition for health and well-being and the value of knowing one's nutritional status in order to receive needed care and support.

REFERENCE 25. THE GATHER APPROACH TO COUNSELLING

The GATHER approach to counselling

GATHER Steps

- G** – Greet
- A** – Ask
- T** – Tell
- H** – Help
- E** – Explain
- R** – Reassure and give a Return date

Greet the client. Ask the client to sit down and exchange introductions. If this is a follow-up visit, review the client’s **Nutrition Assessment and Management Form** and discuss the client’s health and nutritional status and well-being since the last visit.

Ask how the client feels about her or his nutritional status and food intake.

- Ask about symptoms and nutrition concerns.
- Do a nutrition assessment or share the results if you have already done this. Ask whether the client is eating enough to meet additional energy needs; eating a balanced diet; drinking enough clean, safe (boiled or treated) water; managing symptoms through diet; and adhering to a drug-food plan.
- Identify nutritional needs (e.g., gaining weight, adhering to a drug-food plan, using dietary approaches to manage symptoms) with the client.
- Ask what the client has done to address problems and how successfully the problems were address.

Tell the client about alternative ways to address her or his nutrition problems.

- Discuss the client’s anthropometric, dietary and clinical assessment results.
- Use counselling cards related to the client’s problems.

- Help the client set specific, measurable, achievable, realistic and time-bound (SMART) nutrition goals (e.g., ‘I will increase my weight by 4 kg by the end of March’) to address the problems.

Help the client make informed choices.

- With the client (and family or caregiver), negotiate one or two small, doable actions to try before the next visit to help reach the nutrition goal the client has set.
- Allow the client to come up with choices that are practical and relevant to her or his context, for example:
 - Get weighed every month to see whether I am meeting my goal.
 - Use the handout to manage symptoms that may affect my diet.
 - Increase my energy intake with one extra snack every day, such as groundnut paste added to my evening meal, a mug of porridge made from fermented millet or another cereal for breakfast.
 - Treat (boil or filter) all the water I use to drink.
 - Wash my hands before preparing or eating food.

Explain how the choices the client has made will improve nutritional status.

- Describe what improvements (e.g., a decrease in symptoms or drug side effects, less frequent infections) the client can expect if he or she succeeds with the recommended actions.

Reassure and give a Return date.

- Reassure the client that the actions he or she has chosen will improve his or her nutritional status.
- Give the client a date for the next appointment.
- On the next visit, discuss the client’s experience with the recommended actions. Add other actions as the first ones are achieved.

REFERENCE 26. FOOD AND WATER SAFETY AND HYGIENE

Poor hygiene and sanitation and lack of clean drinking water contribute to child stunting by inducing a gut disorder called environmental enteropathy, which results from chronic exposure to faecal microbes. This diverts energy from child growth toward fighting subclinical infection and reduces a child's ability to absorb nutrients.

No food is 100 percent safe at all times for all people, but the risk of water- and food-borne illness can be reduced by following a few simple practices regularly.

1. Wash hands properly.

- Handwashing with soap is the best way to prevent the spread of infection from person to person.
- Just rinsing hands is not enough—you have to use soap every time you wash your hands.
- Wash your hands under poured or flowing water. This removes the dirt and germs. Washing your hands in a washbasin where many people wash their hands does not prevent infection.
- Wash your hands **before** handling, preparing or eating food; feeding someone; breastfeeding; or giving medicines.
- Wash your hands often **during** food preparation.
- Wash your hands **after** going to the toilet; cleaning a person who has defecated; blowing your nose, coughing and sneezing; or handling an animal or animal waste.
- Wash your hands both **before and after** tending to someone who is sick.

2. Keep food preparation areas clean.

- Wash all surfaces and equipment used to prepare or serve food with soap and, if possible, bleach.
- Protect food from insects, pests and other animals by covering it with netting or a cloth or keeping it in containers.

3. Separate raw and cooked food.

- Raw eggs, meat, poultry, fish and seafood can easily contaminate other foods with illness-causing bacteria. Keep them away from other foods.
- Use separate equipment and utensils such as knives and cutting boards for handling raw foods.
- Store foods in covered containers to avoid contact between raw and cooked foods.

4. Cook food thoroughly.

- Cook food thoroughly, especially meat, poultry, eggs, fish and seafood. For meat and poultry, make sure juices are clear, not pink.
- Reheat cooked food thoroughly, bringing it to a boil or heating it until it is too hot to touch. Stir while reheating.

5. Keep foods at safe temperatures.

- Do not leave cooked food at room temperature for more than 6 hours.
- Do not store food too long, even in a refrigerator.
- Do not thaw frozen food at room temperature.
- Prepare food for infants and young children and other people with low immune systems freshly and do not store it after cooking.

6. Use treated water.

- Treat water to make it safe using one of the following methods:
 - Boil it until bubbles appear.
 - Add hypochlorite (chlorine) solution.
 - Use solar disinfection (SODIS).
 - Use a commercial water filter.
- Store treated water safely in a covered container with a narrow neck and a tap, if possible.
- To take water out of the container for drinking or cooking, pour it into a clean pitcher or use a ladle hanging from the wall. Do not touch the water in the container with your hands.

7. Make foods safe to eat.

- Choose fresh and wholesome foods.
- Do not use food beyond its expiry date.
- Use pasteurised milk or boil milk before use.
- Wash raw vegetables and fruits with treated water or peel off the skin before eating.

REFERENCE 27. DIETARY MANAGEMENT OF COMMON SYMPTOMS

Table 24 lists dietary recommendations for managing common symptoms of illness.

Table 24. Ways to manage common symptoms through diet

Illness	Recommendation
Anaemia	<ul style="list-style-type: none"> ▪ Eat iron-rich foods such as animal products (eggs, fish, meat, liver), green leafy vegetables (spinach), legumes (beans), nuts, and fortified cereals. ▪ If available, take 1 iron tablet once a day with food, according to instructions from your health care provider. ▪ Eat meals with vitamin C-rich foods such as fresh tomatoes, oranges or guavas. Vitamin C helps the body absorb iron from plant-based foods. ▪ Avoid drinking tea or coffee within 2 hours before or after meals because they interfere with iron absorption.
Anorexia (appetite loss)	<ul style="list-style-type: none"> ▪ Stimulate your appetite by eating favourite foods. ▪ Eat small amounts of food more often. ▪ Avoid strong-smelling foods.
Bloating or heartburn	<ul style="list-style-type: none"> ▪ Eat small, frequent meals. ▪ Eat long enough before sleeping to digest your food. ▪ Avoid gas-forming foods (cabbage, soda) ▪ Drink plenty of fluids.
Colds, flu and cough	<ul style="list-style-type: none"> ▪ Eat vitamin C-rich foods such as tomatoes, tamarind (<i>ukwaju</i>), <i>mabungo</i>, baobab fruit, citrus fruits, plums, mangoes, java plums (<i>zambarau</i>) and guavas. ▪ Add ginger, cinnamon, lemon juice, garlic and onions to drinks and foods. ▪ Drink plenty of warm fluids.
Constipation	<ul style="list-style-type: none"> ▪ Eat high-fibre foods such as rice, green leafy vegetables and washed fruits with the peel. ▪ Drink plenty of treated (boiled or filtered) water. ▪ Avoid processed or refined foods.
Diarrhoea	<ul style="list-style-type: none"> ▪ Drink plenty of fluids (broths or soups, diluted fruit juices, boiled or filtered water, light herbal teas) to avoid dehydration. ▪ Avoid citrus fruits, which irritate the stomach.

Illness	Recommendation
	<ul style="list-style-type: none"> ▪ Eat foods rich in soluble fibre (millet, banana, peas, lentils) to help retain fluids. ▪ Eat fermented foods such as porridges and yogurt. ▪ Eat easily digestible foods such as rice, bread, millet, cereal porridge, potato, sweet potato and crackers. ▪ Eat small, frequent meals. ▪ Eat frequently after illness to recover weight and nutrients. ▪ Eat soft fruits and vegetables such as bananas, mashed sweet potato and mashed carrots. ▪ Drink non-fat milk if there is no problem with lactose. ▪ Boil or steam foods if diarrhoea is associated with fat malabsorption. ▪ Avoid milk products; caffeine (coffee and tea); alcohol; fatty foods; fried foods; extra oil, lard or butter; and gas-forming foods such as cabbage, onions and carbonated soft drinks.
Fever	<ul style="list-style-type: none"> ▪ Eat soups rich in foods that give energy and nutrients, such as cereal, potatoes and carrots. ▪ Drink plenty of fluids, including treated (boiled or filtered) water to prevent dehydration. ▪ Drink teas from lemon and guava trees. ▪ Continue to eat small, frequent meals as tolerated.
Loss of taste or abnormal taste	<ul style="list-style-type: none"> ▪ Eat small, frequent meals. ▪ Enhance the flavour of food with salt, herbs, spices and lemon. ▪ Eat dry foods such as crackers. ▪ Chew food well and move it around the mouth to stimulate receptors.
Muscle wasting	<ul style="list-style-type: none"> ▪ Eat more and eat more often. ▪ Eat more foods high in protein. ▪ Eat more starchy foods (cereals and other staples). ▪ Eat small, frequent meals.
Nausea and vomiting	<ul style="list-style-type: none"> ▪ Eat small, frequent meals. ▪ Avoid an empty stomach; nausea is worse if nothing is in the stomach. ▪ Do not lie down immediately after eating—wait at least 20 minutes. ▪ Rest between meals. ▪ Eat soup, unsweetened porridge and fruits like bananas. ▪ Eat slightly salty and dry foods such as crackers to calm the stomach.

Illness	Recommendation
	<ul style="list-style-type: none"> ▪ Drink boiled or treated water, herbal teas or lemon juice in hot water. ▪ Avoid spicy and fatty foods. ▪ Avoid caffeine (coffee and tea) and alcohol.
Skin conditions	<ul style="list-style-type: none"> ▪ Eat foods rich in vitamins A, B and C and folate, such as liver, whole grain cereals, brown bread, dairy products, kidney, eggs, fish and dark green and orange vegetables and fruits.
Thrush	<ul style="list-style-type: none"> ▪ Eat soft, mashed foods such as rice, carrots, scrambled eggs, potatoes, bananas, soups and porridge. ▪ Soften food with treated (boiled or filtered) water. ▪ Tilt your head back when eating to help with swallowing. ▪ Eat cold or room-temperature foods. ▪ Avoid spicy, salty or sticky foods. ▪ Avoid sugary foods that cause yeast to grow. ▪ Avoid citrus fruits and juices. ▪ Avoid alcohol and drink plenty of fluids. ▪ Rinse your mouth with boiled warm, salty water after eating to reduce irritation and keep yeast from growing.
Tuberculosis	<ul style="list-style-type: none"> ▪ Eat foods high in protein, energy, iron and vitamins.

REFERENCE 28. FOOD AND NUTRITION GUIDANCE FOR HIV AND TUBERCULOSIS MEDICATIONS

People living with HIV who are on antiretroviral therapy (ART) and tuberculosis (TB) patients on antibacterial medications need appropriate and adequate nutrition to achieve the full benefits of the medications.

Food–medication interactions

- Some antiretroviral medications (ARVs) affect nutrient availability, absorption and utilisation in the body. ART can change the way the body uses fats, proteins and energy.
- Some medications interact with food in ways that can affect nutritional status and the effectiveness of the medications.
- Medication side effects can reduce food intake, absorption of nutrients and adherence to the medications. Side effects may be a sign of an opportunistic infection or other problems requiring medical treatment.
- Some foods when taken with ARVs may reduce drug effectiveness and worsen side effects (e.g., eating fatty meals with Efavirenz will worsen side effects).
- Alcohol and ARVs do not mix.
- Some people on ARVs experience increased appetite, which can lead to weight gain.
- ART response can be assessed through clinical (weight and growth), immunological and virological methods. Children’s growth on ART is a good indicator of response to treatment and ongoing adherence.

Messages

- Carefully select food and plan meals to minimise medication side effects to improve adherence to and the effectiveness of ART.
- Tell a health care provider if you experience side effects. Not everyone experiences side effects. They usually stop after 6 weeks when the body gets used to the medications.
- Take medications as prescribed (following the recommended timing and dosage). Otherwise they will not be effective and may be dangerous.

- Some ARVs require drinking plenty of water to avoid side effects or complications that may affect important body organs such as the kidneys. Make sure the water is boiled or treated, because HIV makes people more vulnerable to water-borne infections.
- Avoid drinking alcohol, which can interfere with the effectiveness of ARVs.
- With your health care provider, plan a daily routine for taking medications and eating meals to maximise the effectiveness of the medications and minimise side effects.

Table 25 lists side effects of ARVs and TB medications used in Tanzania and how to manage them through diet.

Table 25. Food guidance for HIV and TB medications

Medication	Nutrition guidance	Possible side effects
Antiretroviral medications (ARVs)		
Nucleoside and nucleotide reverse transcriptase inhibitors (NRTIs)		
Abacavir (ABC)	Take with or without food, but taking with food reduces side effects. Alcohol increases levels of side effects.	Nausea, vomiting, fever, allergic reaction, anorexia, abdominal pain, diarrhoea, anaemia, rash, hypotension, pancreatitis, dyspnea, weakness and insomnia, cough, headache
Emtricitabine (FTC)	Take with or without food.	
Lamivudine (3TC)	Take with or without food. Avoid alcohol.	Nausea, vomiting, headache, dizziness, diarrhoea, anaemia, abdominal pain, nasal symptoms, cough, fatigue, pancreatitis
Stavudine (d4T)	Take with or without food. Avoid alcohol.	Nausea, vomiting, diarrhoea, peripheral neuropathy, chills and fever, anorexia, stomatitis, diarrhoea, anaemia, headaches, rash, pancreatitis
Tenofovir (TDF)	Take with or without food.	Headache, diarrhoea, nausea, vomiting, abdominal pain, rash, headache, flatulence, anorexia, dizziness, insomnia, depression, sweating, renal function impairment
Zidovudine (ZDV, AZT)	Take with or without food, but NOT a high-fat meal. Avoid alcohol.	Anorexia, anaemia, nausea, vomiting, bone marrow suppression, headache, fatigue, constipation, fever, dizziness, dyspnea, insomnia, muscle pain, rash

Medication	Nutrition guidance	Possible side effects
Non-nucleoside reverse transcriptase inhibitors (NNRTIs)		
Nevirapine (NVP)	Take with or without food. Avoid St. John's wort.	Nausea, vomiting, rash, fever, headache, skin reactions, fatigue, stomatitis, abdominal pain, drowsiness, paresthesia, high hepatotoxicity
Efavirenz (EFZ)	Take with or without food, but NOT with a high-fat meal. Take just before bedtime. Avoid alcohol.	Elevated blood cholesterol levels, elevated triglycerides, rash, dizziness, anorexia, nausea, vomiting, diarrhoea, dyspepsia, abdominal pain, flatulence
Protease inhibitors (PIs)		
Atazanavir (IDV)	Take with food.	Gastrointestinal complaints, renal toxicity (especially when renal function is already reduced)
Lopinavir/Ritonavir (LPV/r)	Take with or without food. Avoid St. John's wort.	Nausea, vomiting, weakness, diarrhoea, headache, dizziness, abdominal pain, fever, diabetes, anorexia, hepatitis, jaundice
Nelfinavir (NFV)	Take with meal or light snack. Avoid St. John's wort.	Diarrhoea, flatulence, nausea, abdominal pain, rash; possible increased risk of lipodystrophy
Ritonavir (RTV)	Take with food. Avoid St. John's wort.	Nausea, vomiting, diarrhoea, hepatitis, jaundice, weakness, anorexia, abdominal pain, fever, diabetes, headache, dizziness, possible increased risk of lipodystrophy
Once daily single tablet regimen		
Atripla (Efavirenz, Emtricitabine, Tenofovir (EFV/FTC/TDF)	Take on an empty stomach, preferably at bedtime. Avoid alcohol.	See above for Efavirenz, Emtricitabine and Tenofovir.
TLE Fixed Dose Combination (Efavirenz, Lamivudine, Tenofovir)	Take with or without food.	See above for Efavirenz, Lamivudine and Tenofovir.

Medication	Nutrition guidance	Possible side effects
Atazanavir/Ritonavir /Tenofovir (ATV/r/FTC/TDF)	Take with or without food.	See above for Ritonavir and Tenofovir.
Antibacterial medications for TB		
Isoniazid	Take on an empty stomach, 1 hour before or 2 hours after a meal. This drug increases the body's requirement for pyridoxine, folate, niacin and magnesium.	Hepatitis, constipation, anaemia, fatigue
Rifampicin	Take on an empty stomach, 1 hour before or 2 hours after a meal. Supplement with 10 mg vitamin B ₆ daily. Do not take with alcohol.	Gastrointestinal irritation, anaemia, jaundice, pancreatitis, altered taste, anorexia

REFERENCE 29. COMMUNITY CONTINUUM OF CARE

Not all severely malnourished people have poor appetite or medical complications that need inpatient care. Most severe malnutrition is undetected because people may not know the signs or malnutrition or show up for treatment in health facilities. Communities can be mobilised to screen people for malnutrition and refer them for treatment. This approach increases access to and coverage of nutrition services and reduces morbidity and mortality because malnutrition is identified for treatment early.

Aims of community outreach

- Find undernourished people early and refer them for treatment before they have life-threatening complications.
- Raise awareness of the importance of nutrition and the causes, signs and treatment of malnutrition.
- Raise awareness of available nutrition services.
- Increase client coverage and follow-up.
- Link prevention and treatment of malnutrition.

Ways to link communities to health and nutrition services

1. Provide nutrition education during community meetings or events.
2. Screen people in the community by measuring mid-upper arm circumference (MUAC) and assessing the presence of bilateral pitting oedema.
3. Counsel people on the importance of nutrition and demonstrate feasible ways to improve nutrition.
4. Refer anyone who is severely malnourished to a health facility for further assessment and treatment before they develop severe medical complications that make their condition harder to treat.
5. Follow up people who have been treated for malnutrition to encourage adherence to treatment and return for follow-up visits.
6. Refer food-insecure and resource-poor clients to economic strengthening, livelihood and food security (ES/L/FS) services to help them improve their diet.

Table 26 lists actions for mobilising communities to identify malnourished clients, refer them for nutrition treatment and ES/L/FS support and provide nutrition education and counselling.

Table 26. Ways to integrate nutrition into community care

What?	Why?	How?
<p>Engage civil society organisations and community care providers in improving nutrition.</p>	<ul style="list-style-type: none"> ▪ Reaching out beyond the health sector can identify and address gaps in service access and utilization. ▪ Community care relies on good relations between health care providers and the community. ▪ Health facilities should agree with civil society organisations about joint responsibilities (e.g., outpatient care, volunteer case finding, follow-up). ▪ Challenges such as loss to follow-up require the community’s advice on solutions. 	<ul style="list-style-type: none"> ▪ Hold sensitisation seminars to explain the importance of integrating nutrition into community care. ▪ Seek the involvement of administrative, political and religious officials. ▪ Look for ways to disseminate messages, such as at regular gatherings of political or traditional leaders. ▪ Take advantage of existing mechanisms to engage community leaders on local nutrition issues.
<p>Strengthen community nutrition case finding.</p>	<ul style="list-style-type: none"> ▪ Most cases of malnutrition go undetected in the community because people are not aware of the signs of malnutrition or only present at health facilities when they have serious medical complications. 	<ul style="list-style-type: none"> ▪ Train community care providers to assess bilateral pitting oedema, measure MUAC correctly and classify nutritional status based on nutrition screening. ▪ Train community care providers to counsel people on improving their nutritional status.

What?	Why?	How?
<p>Provide nutrition counselling during home visits.</p>	<ul style="list-style-type: none"> ▪ Home visits are critical for clients who are not gaining weight or are losing weight, whose oedema is not reducing (non-response to treatment) or who have a deteriorating medical condition. ▪ Specialised food products are only one form of nutrition support. Nutrition counselling can help people improve their diets and manage symptoms of illness through diet. 	<ul style="list-style-type: none"> ▪ Train community care providers in the Critical Nutrition Actions.
<p>Train community care providers to provide nutrition education.</p>	<ul style="list-style-type: none"> ▪ Community members may not know about the importance of nutrition or the signs of malnutrition. ▪ Community members may not understand the purpose and use of specialised food products to treat malnutrition. 	<ul style="list-style-type: none"> ▪ Provide nutrition education and food demonstrations. ▪ Distribute nutrition education materials about the signs and risks of malnutrition.
<p>Establish referral linkages between community care providers and health facilities for clients who are food insecure or have graduated from treatment of malnutrition.</p>	<ul style="list-style-type: none"> ▪ Malnourished people often live in food-insecure and resource-poor households. ▪ Community care providers should refer people identified as severely malnourished to health facilities for treatment. 	<ul style="list-style-type: none"> ▪ Develop referral guides or directories of community ES/L/FS services. ▪ Develop food security assessment tools for individual clients. ▪ Establish or strengthen mechanisms to link malnourished clients with community ES/L/FS services to help improve their access to an improved diet. ▪ Establish standardised referral tracking and feedback systems.

Community NACS channels and services

- Health care providers can weight children under 5 in community-based growth monitoring.
- Community workers can visit homes to measure MUAC and look for bilateral pitting oedema.
- Home-based care (HBC) and most vulnerable children (MVC) service providers can screen people for malnutrition using MUAC, assess dietary quality, assess food availability and use, demonstrate how to make nutritious meals with locally available foods, demonstrate how to prepare and feed specialised food products, counsel on the Critical Nutrition Actions (CNAs) and refer malnourished people to health facilities.
- Local leaders can mobilise communities to seek NACS services.
- Networks and support groups can encourage members to practise the CNAs, screen them using MUAC and refer malnourished members to NACS services.
- Local media can inform communities about NACS services.

REFERENCE 30. COMPONENTS OF NACS

1. Nutrition assessment

- Measurement of weight-for-height z-score (WHZ) for children, determination of body mass index (BMI) for adults or BMI-for-age for children and adolescents 5–18 years, or measurement of mid-upper arm circumference MUAC for all groups and always for pregnant/post-partum women to determine nutritional status
- Regular weighing to monitor effectiveness of care, treatment and nutrition interventions and to prescribe drug doses
- Dietary assessment to inform counselling on improved intake
- Classification of nutritional status
- Determination of Nutrition Care Plans
- Periodic laboratory assessment of key nutrition indicators such as haemoglobin to monitor changes in micronutrient levels

2. Nutrition counselling and education

- Energy intake
- Diet quality and diversity
- Food and water safety
- Dietary management of common symptoms (e.g., diarrhoea, vomiting, nausea)
- Management of drug-food interactions and drug side effects

3. Nutrition support provided by health facilities

- Micronutrient supplementation
- Prescription of specialised food products for malnourished clients who meet eligibility criteria for a limited time
- Supply of point-of-use water purification tablets
- Links to psychosocial, legal and spiritual support and to economic strengthening, livelihood and food security (ES/L/FS) services to promote adequate nutrition once clients graduate from treatment of malnutrition

REFERENCE 31. SPECIALISED FOOD PRODUCTS

Therapeutic foods

Therapeutic foods are energy-dense, micronutrient-fortified specialised food products designed to treat severe acute malnutrition (SAM). They include therapeutic fortified milks (F-75 and F-100) and ready-to-use therapeutic food (RUTF) such as peanut-based Plumpy'nut®.

F-75 therapeutic milk was developed for phase 1 (stabilisation) of treatment of people with SAM. Low in protein, fat and sodium and rich in carbohydrates, F-75 contains skimmed milk powder, vegetable fat, maltodextrin, sugar and mineral and vitamin complex. Each 102.5 g packet is reconstituted with 500 ml of drinking water to obtain about 600 ml of F-75 therapeutic milk. The reconstituted F-75 contains 75 kcal per 100 ml.

F-100 therapeutic milk was developed for phase 2 (transition) of treatment of people with SAM. F-100 contains skimmed milk powder, vegetable fat, whey, maltodextrin, sugar and vitamin and mineral complex. Its low osmolarity formula improves absorption of nutrients. Each 114 g packet is reconstituted with 500 ml of drinking water to obtain about 600 ml of F-100 therapeutic milk. The reconstituted milk contains 100 kcal per 100 ml.

Reconstituted F-75 and F-100 can be kept for 3 hours at room temperature and up to 16 hours in a refrigerator. The packets can be used up to 24 months after the date of manufacture. Both F-75 and F-100 must be used under medical supervision and not distributed directly to families.

Unlike F-75 and F-100, **lipid-based RUTF** is not water based, so bacteria cannot grow in it. It can be eaten directly from the packet with no preparation or dilution with water, and it does not need refrigeration. The lipid-based RUTF Plumpy'nut® has the same nutritional value as F-100 and is designed for phase 3 (rehabilitation) of treatment of people with SAM. It is a highly fortified peanut-based paste containing sugar, vegetable fat, skimmed milk powder and vitamins and minerals. Each 92 g packet provides 500 kcal. Plumpy'nut® can be used for up to 24 months after the date of manufacture.⁴ Table 27 lists the nutrient and energy composition of a 92 g packet of Plumpy'nut®.

⁴ <http://www.nutriset.fr/en/product-range/produit-par-produit/html>

Table 27. Nutrient and energy composition of 92 g of Plumpy'nut®

Nutrient	Content
Energy	500 kcal
Proteins	12.5 g
Lipids	32.86 g
Calcium	276 mg
Phosphorus	276 mg
Potassium	1 022 mg
Magnesium	84.6 mg
Zinc	12.9 mg
Copper	1.6 mg
Iron	10.6 mg
Iodine	92 mcg
Selenium	27.6 mcg
Sodium	< 267 mg
Vitamin A	840 mcg
Vitamin D	15 mcg
Vitamin E	18.4 mg
Vitamin C	49 mg
Vitamin B1	0.55 mg
Vitamin B2	1.66 mg
Vitamin B6	0.55 mg
Vitamin B12	1.7 mcg
Vitamin K	19.3 mcg
Biotin	60 mcg
Folic acid	193 mcg
Pantothenic acid	2.85 mg
Niacin	4.88 mg

Source: <http://motherchildnutrition.org/malnutrition-management/info/rutf-plumpy-nut.html#.UUdozhdeaTI>

Some people have an allergic reaction to the peanut butter in Plumpy'nut®. The allergy may cause swelling, shortness of breath or anaphylactic shock. A client who develops any of these symptoms should stop eating Plumpy'nut® and be treated immediately for allergic reaction in the nearest health facility.

Supplementary foods

Supplementary foods are food products specially designed to manage moderate acute malnutrition. They include mainly fortified-blended food (FBF) such as corn-soya blend. Supplementary food should be eaten at home in addition to the normal diet to compensate for deficiencies in energy, protein and micronutrients.

Supplementary foods are not the same as nutrient supplements, which are nutrients (e.g., vitamins, minerals, amino acids) in tablet, drop or injection form to prevent or treat one or more nutrient deficiencies. Supplementary foods are not the same as fortified foods, which are staple foods for the general population that have micronutrients added to prevent deficiencies.

Warning! Lipid-based RUTF and FBF are not appropriate or nutritionally adequate for infants under 6 months, who should not receive any food or liquids other than breast milk or safe replacement milk.

Ordering specialised food products

1. Each site should fill out a **Monthly Specialised Food Product Report and Request Form** every month and send it to the district medical officer.
2. The district medical officer will consolidate the site reports and send them to the Tanzania Food and Nutrition Centre (TFNC) by the 10th of the following month to avoid stock outs.
3. Districts can contact TFNC directly by fax (+255 22 2116713) or email (info@lishe.org).
4. TFNC will use the form to order the specialised food products from the Medical Stores Department (MSD).
5. The MSD will transport the order to the district, which will distribute the specialised food products to the sites.

Receiving specialised food products

1. Each site should designate one staff person to receive and handle specialised food products.
2. This staff person should inspect the delivery to ensure that:
 - The packages are intact (not damaged or opened)
 - The manufacture and expiration date are clearly marked on each package
 - The expiration date is no later than 3 months after the delivery date

3. If any of the specialised food products are defective or do not meet the above requirements, they should not be accepted.
4. The person receiving the specialised food products should sign the delivery note. One copy of the delivery note should be given back to the person who delivered the consignment, and one copy should be kept and filed at the site.

Storing specialised food products

1. The storage site should be dry, cool, clean, well lit, well ventilated and secure against theft.
2. The space should be large enough to store needed commodities.
3. Fumigate the storage space regularly to control pests (insects, rodents, birds, bats and snakes).
4. There should be adequate drainage, with no stagnant water and no leaks in the walls or roof.
5. The storage space should be cleaned every day or two.
6. All specialised food products should be stored on standard pellets measuring 1.5 m x 1.5 m or on shelves.
7. The staff person designated to handle specialised food products should be trained in issuing and receiving, storing and handling the commodities as well as hygiene and sanitation.
8. The site should use the first in-first out (FIFO) procedure to issue the commodities to user departments to avoid expired products.

REFERENCE 32. NACS SITE QUALITY CHECKLIST

Table 28 is a checklist that can be used to assess the readiness of health facilities to implement NACS and/or to monitor the quality of implementation during supervision and mentoring visits.

Table 28. NACS site quality checklist

Equipment and materials		Yes	No
1.	The site has at least one functioning scale for adults that measures weight in kg to the nearest 100 g.		
2.	The site has at least one functioning scale for children that measures weight in kg to the nearest 100 g.		
3.	The site has at least one height/length board that measures in cm to the nearest cm.		
4.	The site has a set of mid-upper arm circumference (MUAC) tapes that measure to the nearest cm for different groups.		
5.	The site has at least one copy of the NACS Reference Manual for Facility-Based Service Providers .		
6.	The site has at least one copy of the NACS Job Aids for Facility-Based Service Providers .		
7.	The site has NACS reporting forms.		
8.	The site has a chart with body mass index (BMI) cutoffs for adults or BMI wheel.		
9.	The site has a chart or BMI wheel with BMI-for-age cutoffs for children and adolescents.		
10.	The site has a chart with weight-for-height z-score (WHZ) cutoffs using the 2006 World Health Organization (WHO) Child Growth Standards.		
11.	The site has utensils (e.g., bowls, serving spoons, pan, cooker) to demonstrate use and preparation of specialised food products.		
Nutrition assessment and classification		Yes	No
12.	At least two health care providers on staff are trained in NACS.		
13.	Every adult and adolescent coming to the site for the first time is weighed to the nearest 100 g and measured to the nearest cm, with BMI or BMI-for-age determined.		

14.	MUAC is measured for pregnant women, women up to 6 months post-partum and clients whose weight or height cannot be measured.		
15.	Every child 14 years and under coming to the site for the first time is weighed to the nearest 100 g, measured to the nearest cm and has WHZ calculated and/or MUAC measured to the nearest cm.		
16.	Age, sex, HIV status, anthropometric measurements and nutritional status are recorded on the Nutrition Assessment and Management Form for each client.		
17.	Every client is assessed on each clinical visit for medical complications that affect nutritional status (e.g., bilateral pitting oedema, severe anaemia, dehydration, diarrhoea, vomiting, oral sores or thrush, anorexia, tuberculosis, or other opportunistic infections).		
Nutrition Care Plans		Yes	No
18.	Every client receives a Nutrition Care Plan based on his or her nutritional status and health condition.		
19.	Every client (or caregiver of children) is counselled on the need to:		
	a. Be weighed regularly.		
	b. Eat a varied and balanced diet.		
	c. Wash hands with soap and rinse them under flowing water.		
	d. Drink plenty of treated (boiled or filtered) water.		
	e. Maintain a healthy lifestyle to prevent stress and depression.		
	f. Get physical activity.		
	g. Manage diet-related symptoms.		
	h. Manage drug-food interactions.		
20.	Every client with acute malnutrition who qualifies for specialised food products is given an explanation of the entry and exit criteria; the purpose of the specialised food products; and explanations on how to prepare, eat, and store them.		
21.	Entry and exit criteria for specialised food products are posted where health care providers and clients can see them clearly.		
22.	Every client who qualifies for specialised food products is weighed on each visit, and the weight is recorded on the client record form.		
23.	Every client with severe acute malnutrition (SAM) is given an appetite test before being prescribed Plumpy'nut®.		

24.	Health care providers inform clients that specialised food products are not suitable as food for infants under 6 months of age.		
25.	Mothers who choose to breastfeed are counselled to breastfeed their HIV-infected and HIV-exposed infants exclusively for the first 6 months of life, introduce appropriate complementary foods thereafter, continue breastfeeding for the first 12 months of life and stop breastfeeding only when they can feed their infants a nutritionally adequate and safe diet without breast milk.		
26.	Mothers are encouraged to breastfeed exclusively for the first 6 months of life unless they can meet the six WHO conditions for safe replacement feeding.*		
Stock management and record keeping		Yes	No
27.	The site has enough specialised food products to last for 3 months.		
28.	The site has access to adequate and appropriate space to store specialised food products and related commodities.		
29.	The site in-charge or NACS focal person compiles and submits the Monthly Summary Form for NACS Services and Monthly Specialised Food Product Report and Request Form according to the agreed schedule.		
30.	Health care providers fill out the Daily Register of NACS Clients each day from the Nutrition Assessment and Management Forms filled out during the day.		
31.	Health care providers fill out the Daily Specialised Food Product Dispensing Register each day from the Specialised Food Product Prescription Forms filled out during the day.		
32.	'First to expire, first out' procedures and stock management are used for food and other commodities.		
33.	Specialised food products are ordered in advance to avoid stock-outs.		

* The six WHO conditions for safe replacement feeding are: 1) safe water and sanitation are assured, 2) the caregiver can reliably provide enough formula to support normal infant growth and development, 3) the caregiver can prepare infant formula safely and frequently enough to avoid the risk of diarrhoea and malnutrition, 4) the caregiver can feed the formula exclusively for the first 6 months of life, 5) the family and community support this practice, and 6) the caregiver can access comprehensive child health services.

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