

# **1. INTRODUCTION**

## **1.1 Objectives of the Guidelines**

The National Guidelines for HIV/AIDS and Nutrition in Ethiopia (hereafter referred to as the Guidelines) define the nutrition actions for service providers to take in providing quality care and support to people living with HIV and AIDS (PLHIV) at sites that provide HIV counseling and testing (HCT), maternal and child health (MCH) care, antiretroviral therapy (ART), services for orphans and vulnerable children (OVC), and home-based care (HBC). The Guidelines seek to assist the various categories of people infected with and/or affected by HIV: adults, pregnant and lactating women, adolescents, severely malnourished adults and children, and people on medication.

As more and more partners (e.g., ministries, donor agencies, non-governmental organizations [NGOs]) become involved in HIV and AIDS support, the Guidelines will also provide a framework by which interventions can be harmonized across Ethiopia. Also, additional clinical guidelines and a training course will likely be developed from this document in the future.

## **1.2. Commitment of Government and Coordination of Partners**

The Federal Democratic Republic of Ethiopia (FDRE) recognizes that HIV and malnutrition exacerbate one another and conversely that adequate nutrition may slow disease progression, increase the effectiveness of antiretroviral (ARV) and other drugs, and improve the overall quality of life. Though many advances in the fight against HIV have been made in Ethiopia, sufficient effort has not been put into promoting adequate nutrition for PLHIV. The FDRE therefore sees a crucial opportunity to endorse nutrition care and support as a cost-effective strategy in the management of HIV/AIDS. Moreover the FMOH has developed and launched the National Nutrition strategy and the National Nutrition Program (NNP) which articulated nutrition and HIV/AIDS as one of the components of the program. The roles and responsibilities of different partners supporting the implementation of the nutrition and HIV/AIDS program is outlined in the National Implementation Reference Manual on Nutrition and HIV/AIDS. This is the second edition of the Guidelines, from the first edition developed in 2006, with updates based on recent scientific and programmatic advances in the field of nutrition and HIV/AIDS.

## **1.3. Target Audience**

The Guidelines are targeted to PLHIV service providers, which include counselors, health extension workers (HEWs), teachers and trainers, and policymakers. They are intended for practical application as well as policy formulation and implementation.

## 1.4. Overview of the Guidelines

The Guidelines provide a standardized approach to nutrition care and support for PLHIV in diverse conditions in Ethiopia. Each service provider needs to adapt the recommendations to her/his context and client population.

The Guidelines can be used to:

- Provide dietary counseling and nutrition care to people living with and/or affected by HIV
- Create messages and materials that advocate for adequate nutrition for PLHIV and others
- Develop more detailed and specific operational guidelines and materials for service providers and PLHIV
- Design monitoring and evaluation (M&E) systems for nutrition components of HIV/AIDS programs and interventions

The Guidelines are organized around “contact points”—locations where or times when the population encounters health care providers and related professionals. Contact points are likewise organized around the following health services:

- HCT, ART, and/or HBC
- MCH and prevention of mother-to-child transmission of HIV (PMTCT)
- OVC care and support

Key counseling messages, instructions for assessing nutritional status, and actions for the provider to take are given for each contact point.

The following inputs are strongly recommended in order to implement quality nutrition care and support in each of the above contact points:

- Staff trained in nutrition care and support
- Counseling cards, behavior change communication (BCC) materials, copies of the Guidelines, referral cards, and MCH cards
- Scales, mid-upper arm circumference (MUAC) tapes, height meters, etc
- Multiple micronutrients and other routine micronutrient supplements (e.g., vitamin A, iron/folic acid, zinc)
- Demonstration models
- Food supplements

The Guidelines also include information about food security. Guidance is provided on monitoring the impact of the Guidelines. Corresponding BCC materials—including a counseling card, body mass index (BMI) chart, posters, and leaflets for patients—are being developed and will be made available to providers in conjunction with the distribution of the Guidelines.

## **2. BACKGROUND**

HIV/AIDS and malnutrition combine to undermine the immunity of many Ethiopians.

### **2.1. HIV/AIDS in Ethiopia**

Based on 2003 sentinel surveillance findings (see Federal Ministry of Health [FMOH] AIDS in Ethiopia 5<sup>th</sup> Report, 2005), approximately 1.5 million people in Ethiopia (4 percent male and 5 percent female) have HIV, of which 96,000 are children under 15. An estimated 98,000 new cases of HIV infection (46 percent male and 54 percent female) were reported in the adult population, as well as 25,000 new cases in children. Also, some 245,000 PLHIV were in need of ART in 2003. And, there were an estimated 539,000 AIDS orphans in the same year.

### **2.2. Nutrition in Ethiopia**

Ethiopia has one of the world's highest incidences of undernutrition. Approximately 49 percent of the population lacks adequate nutrition, according to the Food and Agriculture Organization (FAO, 2000). The country has high levels of chronic food insecurity and is further prone to acute food insecurity, primarily during times of drought, environmental degradation, and insufficient access to and availability of food. According to the preliminary report of the Ethiopia Demographic and Health Survey (DHS) 2005 and the DHS 2000, one in four women of reproductive age have chronic energy deficiency and 27 percent are anemic. In part as a result of this, 47 percent of children under five experience chronic malnutrition (see DHS 2000 and DHS 2005 preliminary report). Many children (50%) did not receive vitamin A supplements in the six months prior to the study and only 21 percent of mothers received vitamin A within 45 days of delivery (EDHS 2005). Given these high levels of malnutrition and vitamin A deficiency, it is likely that deficiencies of other micronutrients, such as zinc, iron, folic acid, and vitamin C, also exist within Ethiopia's population.

### **2.3. Links between HIV/AIDS and Nutrition**

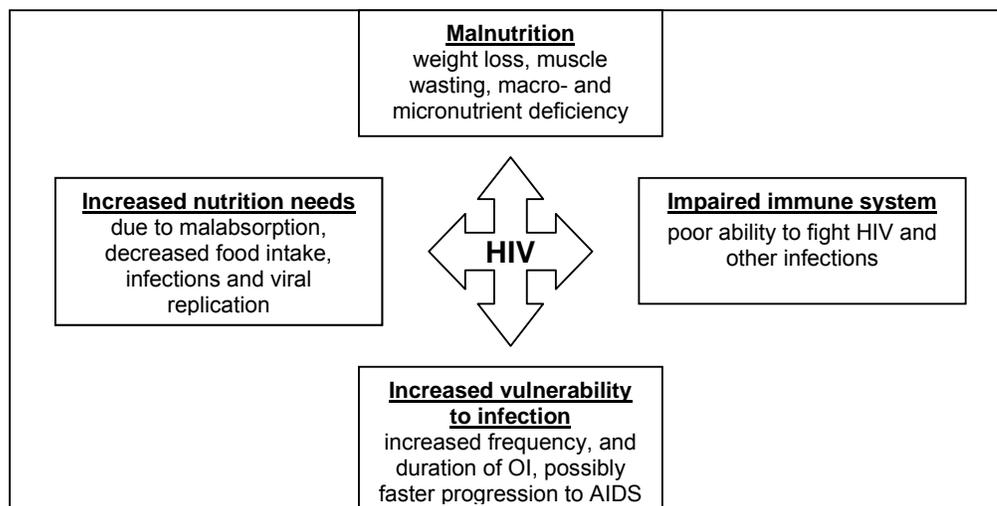
Malnutrition and HIV/AIDS exacerbate one another. PLHIV are more likely to become malnourished because of the following:

- Reduced food intake resulting from appetite loss and difficulty eating, possibly as a result of infections, side effects of medication, or depression
- Poor absorption of nutrients that may be the result of recurrent or chronic diarrhea and HIV-caused intestinal cell damage
- Increased energy needs as a result of virus replication and opportunistic infections (OIs)
- Changes in the way the body uses the nutrients it receives or has stored

Malnutrition contributes to immune system impairment, making the body vulnerable to frequent illness and increasing its energy and nutrient demand, thereby

accelerating disease progression. **Figure 1** highlights this link between malnutrition and HIV/AIDS.

**Figure 1. The cycle of malnutrition and infection and HIV/AIDS**



Source: RCQHC and FANTA, 2003.

In some cases malnutrition and food insecurity may also increase people's risk of contracting HIV by forcing them into high-risk activities to acquire food.

## 2.4. Characteristics of HIV-related Malnutrition

The following symptoms are commonly observed in PLHIV in the later stages of the disease:

- Weight loss (often described as "slim disease") and eventually severe wasting
- Progressive muscle wasting and fat loss under the skin which causes accelerated aging
- Reduced immune competence which leads to increased susceptibility to infections
- Hair changes, especially thinning and loss
- Diarrhoea and poor absorption of nutrients
- Poor response to treatment

## 2.5. Goals of Nutrition Care and Support for PLHIV

- Improve nutritional status by maintaining weight and body composition, and preventing muscle loss
- Ensure adequate energy and nutrient intake by influencing eating habits and building body stores of essential nutrients
- Prevent illness by promoting hygiene and food and water safety
- Enhance quality of life and minimize nutritional impact by promptly treating infections and managing symptoms that affect nutrient intake

- Provide care starting at the time of initial HIV testing and continuing through the advanced stages of the disease

**Table 1** shows the mix of possible nutrition interventions according to individual levels of disease progression.

**Table 1. Nutrition interventions according to level of disease progression**

	<b>HIV-positive Asymptomatic</b>	<b>HIV-positive Symptomatic</b>	<b>AIDS</b>	<b>Death</b> (Targeting other household members)
<b>Counseling/Care</b>	- Nutrition for positive living	- Nutrition management of HIV-related OIs, symptoms, and medications	- Management of food-ARV interactions - Nutrition management of OI and in palliative HBC	- Counseling on the special food and nutrition needs of OVC and infants
<b>Targeted Supplementation</b>	- For high-risk groups only (e.g., pregnant and lactating women, non-breastfed children, malnourished adults and children)	- For high-risk groups - For those who are losing weight or do not respond to medications - Therapeutic and supplementary feeding for severely and moderately malnourished adults and children, respectively	- Therapeutic or supplementary feeding for severely and moderately malnourished adults and children	- For high-risk OVC (e.g., non-breastfed children < 2 years old, children with growth faltering)
<b>Other Uses of Food Support</b>	- Food rations to prevent deterioration in highly food-insecure communities and populations	- Food rations to improve adherence to and participation in OI treatment programs	- Food rations to improve adherence to and participation in ARV and OI treatment in HBC programs	- Food rations for families with compromised livelihoods - Food rations to protect the health of OVC (e.g., school feeding)

Source: Piwoz, 2004.

## 2.6. Nutrient Requirements of PLHIV

**Annex 1** shows the energy needs of HIV-negative and -positive people by age and sex.

### 2.6.1 Energy

All PLHIV—regardless of age, sex, and physiological status—require more energy than

**All PLHIV require 10% more energy when asymptomatic and 20–30% more when symptomatic. Children who are experiencing weight loss need between 50% and 100% more energy every day.**

uninfected individuals of the same status in order to meet the elevated nutritional needs that result from the infections and changes in metabolism caused by HIV.

The World Health Organization (WHO) recommends that PLHIV increase energy incrementally depending on the stage of the disease (see WHO, 2005). Counseling messages should therefore take typical Ethiopian diets into consideration.

### **2.6.2. Protein and Micronutrients**

Although research unanimously shows a loss of body mass for PLHIV—the severity of which increases with progression of the disease—it is not known whether PLHIV require additional protein or micronutrients to address this loss. WHO **does not** recommend increasing protein, fat, or micronutrient intake over the recommended dietary allowances (RDA), which state that protein intake should make up 12–15 percent of total energy consumption.

***There is not evidence that PLWHA require more protein and micronutrient than uninfected people. Any micronutrient supplementation should not be more than one RDA unless the client is deficient.***

### **2.6.3. Water**

Water helps clean the body of the metabolic waste, disease, and toxins left from ARVs and other drugs. PLHIV may lose water due to illness symptoms (e.g., vomiting, diarrhoea, sweating when feverish). PLHIV—particularly those with low cluster of differentiation 4 (CD4) counts—especially need to drink clean safe water to avoid waterborne diseases.

### **2.6.4. Physical Activity**

Exercise strengthens the body and stimulates appetite. PLHIV are advised to get sufficient physical exercise (e.g., walking, jogging, gardening, weight-bearing movement) which is consistent with their level of health and ability.

## **2.7. The Essential Nutrition Actions**

The FMOH has adopted the Essential Nutrition Actions (ENA) approach to address malnutrition. The ENA promote key “doable” nutrition behaviors have been scientifically proven to improve the nutrition of women and children. These behaviors also apply to PLHIV. The approach focuses on the following actions:

1. Promotion of optimal infant feeding (IF) during the first six months
2. Promotion of adequate complementary feeding beginning at six months
3. Promotion of nutrition care of the child during and after illness
4. Promotion of iodized salt consumption by all families
5. Promotion of improved women’s nutrition (e.g., increased food intake during pregnancy and lactation, increased iron intake, malaria prevention, post-partum vitamin A supplementation)
6. Prevention of vitamin A deficiency (e.g., consumption of fortified and vitamin A-rich foods, supplementation for mothers and children 6–59 months old)

7. Prevention of anaemia (e.g., maternal and child iron supplementation, deworming, malaria control, consumption of fortified and iron-rich foods)

These seven actions are promoted and implemented through six health contact points in the life cycle: during pregnancy; during delivery; during immediate post-partum, post-natal and family planning visits; during immunization, during the growth monitoring of a well child; and during sick child consultations. Outside the health sector, these seven actions are also implemented through community, school, emergency, agriculture, credit, and other programs. **Annexes 2a and 2b** summarize the ENA currently recommended for people who are HIV-negative, HIV-positive, and of unknown status.

#### **Actions for Providers**

At HCT, MCH, ARV treatment, HBC, and OVC contact points, **counsel** that adequate nutrition:

- Strengthens immune function, reducing secondary infections
- Prevents diseases caused by micronutrient deficiency
- Can reduce the severity of drug side effects
- Minimizes wasting and loss of muscle

## **2.8 The National Nutrition Program**

The FMOH has launched the National Nutrition Program (NNP) to address nutrition problems in a comprehensive manner. It includes nutrition and HIV/AIDS as part of its complete service delivery, and emphasizes the importance of linking the nutrition and HIV/AIDS program with other livelihood programs. It also prioritizes food and nutrition services in order to optimize the benefits of those services and achieve objectives set in the National Nutrition Strategy.

The Nutrition and HIV sub component of the NNP's major activities include:

- Developing nutrition and HIV/AIDS communication and advocacy materials in relation to the national nutrition communication strategy
- Disseminating guidelines and training materials on clinical nutrition care of PLHIV in relation to the Guidelines
- Standardizing nutrition and HIV/AIDS services and institutionalizing quality assurance of those services
- Training health workers at different levels on nutrition and HIV/AIDS services
- Integrating nutrition assessment and counseling into HIV care, treatment and support services
- Designing and monitoring food and nutrition programs targeting clinically malnourished PLHIV women—particularly pregnant and lactating women—and OVC
- Facilitating the coordination and integration of food aid and HIV programs at the regional level

### 3. HIV COUNSELING AND TESTING

HCT provides an important opportunity to deliver nutrition messages to HIV-positive clients immediately after testing as well as to encourage adequate nutrition practices among HIV-negative clients. HCT counselors need periodic updates on nutrition issues related to HIV/AIDS.

**Materials needed:** weighing scales, height meters, BMI charts, deworming medicine, iron and folic acid supplements, referral charts, and HIV/AIDS and nutrition counseling cards, posters, and leaflets

#### 3.1. HIV-negative Clients

##### 3.1.1. HIV-negative Adults and Adolescents

Counsel them to:

- Eat three meals a day of different kinds of foods including: fruits and vegetables; grains such as enjera, bread, and porridge; and proteins such as meat, chicken, fish, lentils, beans, and nuts
- Seek care whenever health problems arise that may affect food intake (e.g., diarrhoea, vomiting, oral thrush/sores in the mouth, loss of appetite, change of taste) and then re-seek HIV testing

##### 3.1.2. Pregnant and Lactating Women Who Are HIV-negative or of Unknown Status

Refer them for antenatal care (ANC) and post-natal care (PNC) where they can receive counseling, iron and folic acid supplementation, and deworming medication.

Counsel them to:

- Eat one additional meal or snack per day if pregnant and two if lactating
- Practice safer sex
- Practice exclusive breastfeeding (EBF) until the infant is 6 months old, with continued breastfeeding up to 2 years and beyond
- Start complementary feeding when the baby is six months old

(See **Annex 2a. Essential Nutrition Actions for Pregnant and Lactating Women and Their Children Who Are HIV-negative or of Unknown Status.**)

##### 3.1.3. Children Who Are HIV-negative or of Unknown Status

Refer the parent or caregiver to MCH services where the child can receive support to implement ENA.

(See **Annex 2a. Essential Nutrition Actions for Pregnant and Lactating Women and Their Children Who Are HIV-Negative or of Unknown Status.**)

## 3.2. HIV-positive adults and adolescents

### 3.2.1. Assess nutritional status at every contact.

Measure weight in kilograms to the nearest 100 grams and height in meters to the nearest centimeter at every visit and also calculate BMI (see BMI chart in **Annex 3**).

Advise clients to be weighed periodically:

- If asymptomatic, at least every 3–4 months
- If symptomatic, at least every 2 months
- If BMI < 18.5, every month

***Refer all HIV-positive clients with BMI < 18.5 or who have unintentionally lost 5-10% of their weight within 2 months for ART assessment and food supplementation.***

Assess anaemia by looking at the pallor of the palms. Also, ask about any illness, symptoms, or medications the client is taking and refer the client to a clinician if necessary.

#### Actions for Providers

- Accurately record BMI and anaemia status in the client's book or health facility records and encourage the client to share the book with other service providers.
- If BMI < 18.5, refer the client to a clinician for evaluation of advanced disease and food supplementation, if available. (See **Chapter 9** for details.)
- If the client shows signs of anaemia (see **Annex 4. Treatment of Anaemia**):
  - Refer for determination of hemoglobin (HB) level and testing for malaria
  - Give deworming medicine and iron/folic acid supplements
  - Counsel the client to eat foods rich in iron (e.g., red meat, liver, fish, poultry, eggs, legumes, nuts) and foods rich in vitamins A and B12 (e.g., carrots, eggs, liver, mangoes, green leafy vegetables, sweet potatoes)

### 3.2.2. Counsel on the seven ways PLHIV can maintain strength.

For detailed information on the energy value of meals and snacks commonly eaten in Ethiopia, refer to **Annex 5. Energy Values of Meals, Snacks, and Foods Available in Ethiopia**.

The following are the seven ways in which PLHIV can maintain strength:

1. See a health worker for periodic nutrition assessment (especially weight).
2. Eat more and different kinds of foods.
3. Maintain a high level of hygiene and sanitation.
4. Drink plenty of clean, safe (boiled or treated) water.
5. Maintain a healthy lifestyle.
6. Seek early treatment for infections and manage symptoms through diet.
7. Take medicines as advised by your health worker and manage food and drug interactions and side effects.

If the client is on ART, support as indicated in **Chapter 5**.

If the client's BMI is < 18.5 or MUAC is < 18.5 cm, refer him/her for appropriate food and nutrition interventions. (See **Chapter 9**.)

### **3.2.3. Counsel on micronutrient supplements and on use of traditional therapies.**

Concerning nutrient supplements, counsel that:

- The best and recommended source of good nutrition is a variety of foods, including fruits and vegetables, grains, and animal or plant products.
- Nutrition supplements are for people who cannot eat sufficient quantities of high-quality food or are severely malnourished because of malabsorption, diarrhoea, or intolerance. Food is provided according to eligibility criteria.
- Multiple micronutrient supplements are also provided to people likely to be vulnerable to deficiencies of individual micronutrients.

However, caution that with nutrient supplements:

- Excessive doses of some micronutrients (like vitamin A and D) can be toxic, and supplementation **SHOULD NOT** exceed one RDA unless prescribed by a clinician to address specific identified deficiencies.
- Supplements do not treat HIV or AIDS and are not a substitute for ARVs.
- Supplement packaging may be misleading. Many supplements claim to improve immune function, but often there is no evidence to support this.
- The health provider should always be informed of any supplements the client may be on.

Most traditional herb therapies have not been proven effective by clinical research. Reliable information on toxicity or interactions with other medicines is also unavailable.

Concerning tradition therapies, counsel that:

- Some herbs may limit food intake.
- Some herbs may interfere with the effectiveness of drugs.

Also, counsel the client to:

- Supplement rather than replace food or standard therapy
- Acquire therapies from a registered or certified traditional medicine practitioner
- Ensure that herbs or traditional supplements are not poisonous and do not cause negative interactions with medicines
- Only consume supplements that are known to prevent, alleviate, or cure symptoms (e.g., lower blood pressure, increase energy, improve digestion, reduce severity of diarrhoea)
- Continuously inform the health provider what is being taken

For pregnant and lactating HIV-positive women, see **Chapter 4**.

For HIV-positive children, see **Chapter 6**.

## 4. MATERNAL AND CHILD HEALTH

Adequate nutrition is important for the general and reproductive health of women as well as for the survival and development of their children. HIV-positive pregnant and lactating women are at increased risk of malnutrition and mortality because of the extra demands imposed by pregnancy, lactation, and HIV-related infections. **Table 2** shows the energy requirements of pregnant and lactating women and the additional requirements resulting from HIV. For reference, a meal of injera and two sauces provides 700–800 kilocalories (kcal), an average size ripe banana approximately 88 kcal, and a large handful of kolo 200 kcal. (See **Annex 5. Energy Values of Locally Available Meals, Snacks, and Foods.**)

**Table 2. Daily energy requirements of HIV-infected pregnant and lactating women in different physiological states**

	Average energy intake (kcal)	Additional energy required for pregnancy/lactation (kcal)	Additional energy requirements of HIV (kcal)	Total energy intake (kcal)
<b>Pregnant</b>				
Uninfected	2140	280	0	2420
Asymptomatic	2140	280	210	2630
Early symptomatic	2140	280	430	2850
Symptomatic	2140	280	640	3060
<b>Lactating</b>				
Uninfected	2140	500	0	2640
Asymptomatic	2140	500	210	2850
Early symptomatic	2140	500	430	3070
Symptomatic	2140	500	640	3280
<b>Not breastfeeding</b>				
Uninfected	2140	0	0	2140
Asymptomatic	2140	0	210	2350
Early symptomatic	2140	0	430	2570
Symptomatic	2140	0	640	2780

Source: FANTA Project, 2004

A woman's nutritional status during pregnancy influences the risk of maternal to child transmission of HIV (MTCT) and pregnancy outcomes. A mother can transmit HIV to her infant during pregnancy and delivery or through breastfeeding, but most infants of HIV-positive mothers do not become infected. In cases where no interventions are used to reduce transmission, about 5–10 percent of infants are infected during pregnancy, 10–20 percent during labor and delivery, and 5–20 percent during breastfeeding if breastfed (see LINKAGES, April 2004).

PMTCT should be part of ANC, PNC, and MCH services to support mothers and families in choosing feeding options for their newborns. MCH service providers need counseling materials to be available in PMTCT sites to help counsel women of any HIV status in order to assess whether replacement feeding is acceptable, feasible, affordable, sustainable, and safe (AFASS), as well as to counsel on IF options.

**Materials needed:** weighing scales for adults and children, height meters, BMI charts, MUAC tapes for adults, deworming medicine, iron and folic acid supplements, HIV/AIDS and nutrition counseling cards, posters, and leaflets

#### 4.1. Pregnant and Lactating Women Who are HIV-negative or Of Unknown Status

Explain to pregnant and lactation women that knowing their HIV status is important in order to take action to reduce the risk of MTCT as well as for the woman's health and overall quality of life. If a woman doesn't know her HIV status, refer her to HCT. In conjunction, promote safer sex to these women.

Counsel pregnant and lactating women to maintain adequate nutrition by eating one additional snack daily during pregnancy and two additional snacks during lactation, to maintain breast health, and on optimal breastfeeding practices. (See **Annex 2a. Essential Nutrition Actions for Pregnant and Lactating Women and Their Children Who Are HIV-Negative or of Unknown Status.**)

#### 4.2. HIV-positive Pregnant and Post-partum Women

##### 4.2.1. Assess nutritional status at every contact.

Take the following steps to ensure adequate nutrition and overall health:

- Measure MUAC at every contact. For women, normal MUAC is > 21 cm. (See **Annex 7. How to Measure MUAC.**)
- Weigh all women and record the weight in the mother's cards. If the women are pregnant and not gaining weight appropriately, investigate possible causes.
- Assess anaemia by looking at the pallor of the palms.
- Ask about any illnesses, symptoms, or medications being taken at the time of the visit and refer the woman to a clinician for further assessment if needed.

***Refer all pregnant women not gaining weight or gaining less than one kg per month in the second and third trimesters immediately for additional care.***

***Weight gain below recommended ranges in a pregnant HIV-positive woman may indicate a medical problem (e.g., an OI) or inadequate energy intake.***

##### **Actions for Providers**

- Accurately record MUAC and anaemia status in the client's book and encourage her to share the book with other service providers.
- If MUAC < 21cm, refer the client to a clinician for evaluation of advanced disease and to food and nutrition intervention.
- If the client shows signs of anaemia (see **Annex 4**):
  - Refer to a clinician for determination of HB levels and for testing for malaria
  - Give deworming medicine and iron/folic acid supplements
  - Counsel the client to eat foods rich in iron (e.g., red meat, liver, fish, poultry, eggs, legumes, nuts) and foods rich in vitamins A and B12 (e.g., carrots, eggs, liver, mangoes, green leafy vegetables, sweet potatoes, butter)

#### 4.2.2. Support HIV-positive women to maintain strength.

Counsel all women on the seven ways to maintain strength if HIV-positive. (See **Section 3.2.2.**) Also counsel HIV-positive pregnant and post-partum women to:

- Eat one additional snack daily during pregnancy and two during lactation.
- Address factors that may limit nutrient intake, (e.g., food avoidance, nausea and/or anorexia attributed with pregnancy, traditional beliefs, stigma).
- Address side-effects of iron and/or folic acid supplements and ways to treat them (e.g., taking them with meals, drinking plenty of safe clean water).
- Seek early treatment for infections (e.g., fever, malaria, prolonged cough, diarrhoea) to minimize the impact on nutritional status.
- Use insecticide-treated mosquito nets (ITNs).

Inform the client that periodic illnesses increase the risk of having a pre-term or underweight (low birth weight) baby and the risk of MTCT.

Provide presumptive treatment of malaria to the client if she has a high fever and is in the second and/or third trimester of her pregnancy.

Refer the client:

- To reproductive health services for family planning support, and for prevention of and counseling for sexually transmitted infections
- To an ART clinic, if on ART, or advise as indicated in **Chapter 6.**
- For food supplementation and support if MUAC < 21 cm (See **Chapter 9.**)

#### 4.2.3. Support infant feeding options to reduce the risk of MTCT.

Inform the woman of the risks of MTCT, emphasizing PMTCT as a comprehensive package that includes healthy pregnancy, safe delivery, and sufficient PNC, and of the need to select an IF option before delivery in order to plan for implementation immediately upon birth. Emphasize the following:

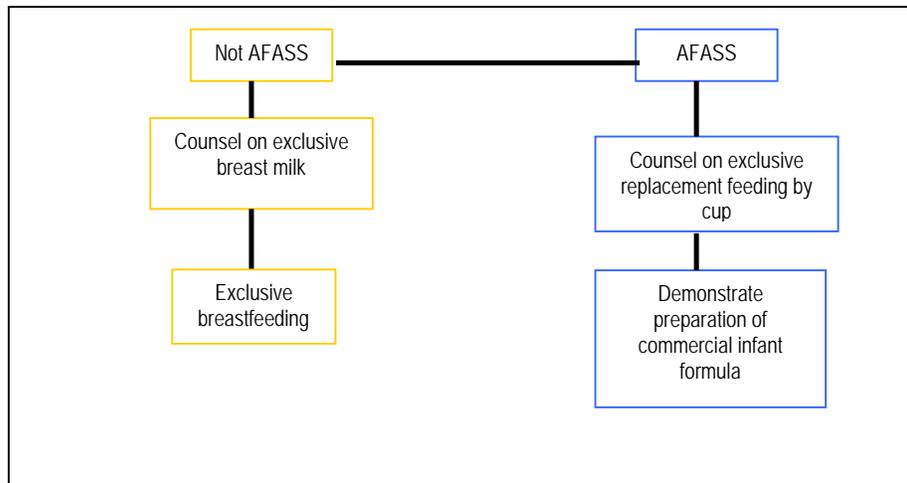
- Not all HIV-positive women transmit HIV to their infants.
- If transmission occurs, it may happen either during pregnancy, labor and delivery, or after birth, through breastfeeding.
- Most women who breastfeed do not transmit HIV to their infants.

Counsel HIV-positive women on:

- The importance of attending ANC services, delivering in a health facility, and follow-up care in MCH, PMTCT, and/or ART clinic to reduce MTCT
- The need for support from health workers, support groups, family, and friends to sustain the chosen feeding option
- Different options for IF (See **Figure 2**)

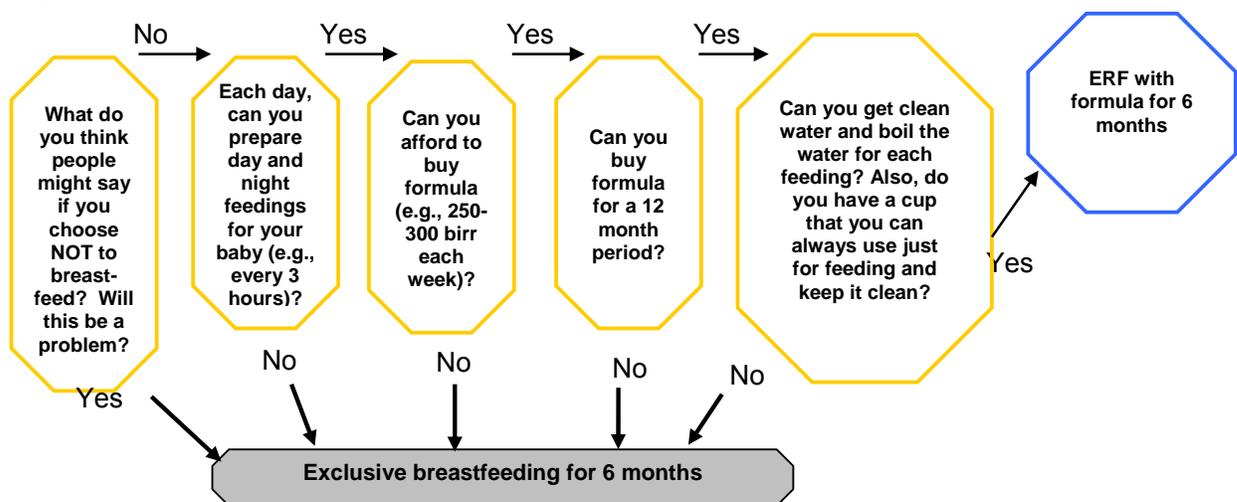
**EXCLUSIVE  
BREASTFEEDING (EBF)**  
*means feeding the infant on  
breast milk alone without  
giving the infant anything  
else—not even water—  
except prescribed  
medication.*

**Figure 2. Infant feeding options for HIV-positive women**



Evaluate whether the woman’s infant feeding practices meet are consistent with WHO and national recommendations. (See **Figure 3.**) AFASS criteria help evaluate whether a woman can implement exclusive replacement feeding (ERF) or not.

**Figure 3. Evaluation of AFASS for HIV-positive women**



Source: National guideline on pediatric HIV/AIDS and Treatment. FHAPCO/MoH 2007

- If the woman does NOT meet AFASS criteria, counsel her to:
- Practice exclusive breastfeeding (EBF) until the infant is six months old or until replacement feeding is AFASS
- Inform the birth attendant of the choice to practice EBF from birth
- Put the infant on the breast within one hour of birth
- Maintain breast health, and see a health worker immediately and stop feeding from the affected breast if breast problems arise (See **Annex 8. How to Exclusively Breastfeed Safely.**)
- Avoid giving the infant any fluids and/or feeds traditionally given at birth

**MIXED FEEDING increases the risk of MTCT and should never be practiced.**

Also:

- Demonstrate good breast positioning and attachment.
- Discourage mixed feeding

If the woman DOES meet AFASS criteria, advise her to select infant formula, and counsel her on replacement feeding.

Counsel her to:

- Prepare fresh infant formula for each feeding
- Read or have someone else read the instructions on the formula tin
- Boil or treat water for 10 minutes and allow to cool
- Measure the amount of milk powder needed for one feeding and mix it with the correct amount of cool, boiled water

Communicate to the mother that while practicing replacement feeding she should:

- Bring enough rations of the chosen replacement feeding option to the maternity ward, if delivering in a health facility
- Wash hands and clean all utensils, containers, and cups with soap and water
- Feed the infant by cup

#### **4.2.4. Support the woman during pregnancy and delivery, and postpartum.**

During pregnancy:

- Describe the IF options.
- Assess whether options are AFASS and counsel on the chosen the IF option.
- Advise on the danger of mixed feeding.

During Delivery:

- If breastfeeding is the chosen option, put the infant immediately on the breast.
- If replacement feeding is the chosen option, allow skin-to-skin contact but **DO NOT** put the infant on the breast.

Postpartum:

- Re-evaluate AFASS criteria and change the IF option, if necessary.
  - If breastfeeding, counsel on optimal breastfeeding.
  - If replacement feeding, counsel on correct preparation and on feeding with a cup.
- Encourage the mother to bring her infant to the well-baby clinic and to growth monitoring and promotion (GMP) programs.

For women on ART, see **Chapter 5**.

## 5. ANTIRETROVIRAL THERAPY

PLHIV taking ARVs and receiving associated treatments require special nutrition care and support because HIV-related medications can reduce the overall quality of health. Medications can cause nausea, vomiting, change in or loss of taste or appetite, and diarrhoea, all of which can lead to reduced absorption of nutrients and weight loss. ARVs can also cause metabolic side effects that lead to nutrition-related conditions, such as heart and bone problems. Conversely, food can negatively affect the absorption, distribution, metabolism, and excretion of HIV medications. It is, therefore, essential to understand food-and-drug interactions and to counsel ART patients on how to properly use drugs in relation to food. For these reasons, every ART clinic needs a focal person trained in HIV/AIDS and nutrition.

**Materials needed:** weighing scales, height meters, BMI charts, deworming medicine, iron and folic acid supplements, HIV/AIDS and nutrition counseling cards, posters, and leaflets

### 5.1. HIV-positive Clients Not on ART

Nutritional status for these clients should be assessed at every contact. Measure weight in kilograms to the nearest 100 grams and height in meters to the nearest 1 centimeter, and calculate BMI (see BMI chart in **Annex 3**). Assess anaemia status by looking at the pallor of the palms.

Adult patients with BMI < 18.5 need specialized nutrition counseling to assess:

- The adequacy of their energy intake
- The diversity of their diet
- Underlying causes of malnutrition such as illnesses, loss of appetite, nausea, sores in the mouth, fever, diarrhoea, malabsorption, and lack of food

Anthropometric assessment also determines eligibility for therapeutic and supplementary food products, as adult patients with BMI < 16 qualify for therapeutic food packages and those with BMI 16-18.5 qualify for supplementary food packages where available. (See **Chapter 9** for more information.)

### Actions for Providers

- Accurately record BMI and anaemia status in the client's book and encourage her/him to share the book with other service providers.
- Treat any underlying illnesses.
- If BMI < 16, nutritionally stabilize the client before starting ARVs. (See **Annex 10. Guidelines for the Management of Severe Acute Malnutrition.**) At a minimum, provide deworming medicine and prescribe high energy foods, such as ready-to-use therapeutic food (RUTF).
- Prescribe multiple micronutrient supplements if the client is not on food supplements. They should not exceed more than 1 RDA for each nutrient, unless prescribed by a clinician to treat a specific, identified deficiency.
- If the client shows signs of anaemia (see **Annex 4. Treatment of Anaemia**):
  - Refer for determination of HB level and testing for malaria
  - Give deworming medicine, and iron and folic acid supplements
  - Counsel to eat foods rich in iron (e.g., red meat, liver, fish, poultry, eggs, legumes, nuts) and foods rich in vitamins A and B12 (e.g., carrots, eggs, liver, mangoes, green leafy vegetables, sweet potatoes, butter)

## 5.2. Clients on ART

### 5.2.1. Support the client to maintain strength.

Counsel the client on the seven ways to maintain strength if HIV-positive. Re-evaluate current ARVs for clients who continue to lose weight despite adequate intake, as this may indicate treatment failure.

### 5.2.2. Assess nutritional status at every contact.

Measure weight in kilograms to the nearest 100 grams at each contact. For adults, measure height in meters to the nearest centimeter during the first contact. Calculate BMI (see BMI chart in **Annex 3**).

Assess the following:

- Anaemia, by looking at the pallor of the palms
- Changes in body shape through a thorough clinical examination and patient history, (e.g., loss of fat in any body part other than the stomach, increased breast size, “buffalo humps” or increased fat between the shoulders)
- Drug side effects such as vomiting, nausea and symptoms of OIs (see **Annex 11. Food-and-Antiretroviral Drug Interactions and Common Side Effects.**)
- Possibility of alcohol abuse in patients with poor drug adherence
- Dietary intake (i.e. frequency of food intake, food diversity, quantities), especially if BMI < 18.5

Anthropometric assessment also determines eligibility for therapeutic and supplementary food products, as adult patients with BMI < 16 qualify for therapeutic food packages and those with BMI 16-18.5 qualify for supplementary food packages where available. See **Chapter 9** for more information.

#### **Actions for Providers**

- Accurately record BMI and anaemia status in the client's book and encourage her/him to share the book with other service providers.
- If BMI < 18.5, refer for food and nutrition interventions or prescribe high-energy food and multiple vitamin supplements.
- Counsel on the seven ways for PLHIV to maintain their strength.
- If BMI  $\geq$  25, counsel on the risk of being overweight and identify reasons for weight gain. Recommend reducing food portions and intake of high-fat and high-energy foods, eating more fruits and vegetables, and increasing physical activity, preferably as part of an exercise program.
- If the client is on **Zidovudine or Lamivudine**, order an HB test at least once every six months.
- If the client is on **Efavirenz** or another **protease inhibitor**, order a fasting blood lipid profile to monitor hyperlipidemia (i.e. cholesterol and triglycerides) every six months. Also monitor serum glucose for hyperglycemia.
- If the client is on **Stavudine or Zidovudine**, order a bone density test once a year.
- For all clients, monitor renal function (i.e. serum creatinine or blood urea), first at the initial consultation and then every six months.

### **5.2.3. Support the client to minimize food-and-drug interactions.**

Inform clients that:

- ARVs may have side effects that can affect drug adherence, appetite, and/or the availability, absorption, and utilization of nutrients.
- Some foods may reduce the effectiveness of certain ARVs and worsen their side effects.
- Careful selection of food and well-planned meals can minimize side effects and improve adherence to and the effectiveness of ARVs (see **Annex 12. Developing a Drug-Food Plan**).

Counsel the client:

- To adhere to the recommended timing and dosage for all drugs, and make a daily meal and drug plan with a family member or friend who can also assist in following the plan at home
- On how to manage potential side-effects associated with specific ARVs, and emphasize that side-effects may not occur and that not all symptoms are due to ARVs or other drugs (see **Annex 11. Food-and-Antiretroviral Drug Interactions and Common Side Effects**)

- To use only cool, boiled or treated water for taking medicines and for drinking

Counsel the client on the following ARV-specific recommendations:

- **Lamivudine:** take with or without food
- **Indinavir:** drink at least 6 glasses of water (1500 milliliters) with the medication to avoid complications that may affect important body organs, like the kidneys
- **Zidovudine:** best if taken on an empty stomach (e.g., 60 minutes before breakfast or dinner), but if stomach is irritated take with food, but NOT with a high fat meal; limit or eliminate fat from the meal
- **Nevirapine:** take with or without food; avoid St. John's Wort (a yellow-flowered plant sometimes used as a remedy for depression)
- **Efavirenz:** take with or without food, but NOT with a high fat meal; limit or eliminate fat from the meal
- **Stavudine:** take with or without food
- **Ritonavir:** take with food to improve palatability

Provide counseling on herbal remedies (see **Section 3.2** for assistance). The important message here is that clients should be encouraged to inform the HEW if they are taking herbal remedies.

#### **5.2.4. Support the client to manage possible changes in body composition.**

If the client has high blood fat, assess whether his/her energy intake is adequate and how much of his/her dietary energy is coming from fat, which should not be more than 30 percent and may need to be lower for individuals taking certain ARVs.

- If the client can get sufficient energy from non-fat sources or food sources with less oil, counsel him/her to do so and to limit consumption of saturated fats like butter and egg yolks.
- Advise the client to eat foods rich in statins and/or fibrates (like kolo) that are effective in lowering cholesterol and triglycerides.
- Encourage exercise according to fitness level.

If diet modifications and physical exercise do not reduce blood fat levels, re-evaluate the client's ARV regimen.

If the client is experiencing changes in body shape, namely fat accumulation or loss:

- Counsel the client that there may not be an effective cure for his/her condition.
- Encourage the client to exercise according to his/her fitness level.
- If severe, consider switching the client's ARV regimen.

If the client has significant lean mass (muscle) loss:

- Make sure all underlying illnesses have been treated or are under treatment.
- Recommend physical exercise.
- If appetite problems exist, prescribe an appetite stimulant (e.g., megestrol acetate).
- Refer males for testosterone level assessment. If his level is low, consider replacement therapy.

Consider using anabolic steroids to increase positive nitrogen balance while monitoring side effects.

### 5.3. Recommendations Specific to Pregnant Women on ART

Most pregnant women on highly active antiretroviral therapy (HAART) take short-course Zidovudine and single-dose Nevirapine, for which the same diet and food-and-drug interactions apply. (See **Annex 11. Food-and-Antiretroviral Drug Interactions and Common Side Effects** for details.)

- Consider temporarily discontinuing treatment for women who develop severe pregnancy-related nausea and vomiting.
- Do not prescribe Zidovudine to pregnant women with moderate to severe anaemia (hemoglobin [HB] < 7.0), or delay prescription for such women.
- Continue ARV regimen for breastfeeding women.

### 5.4. Recommendations Specific to Children on ART

The main first-line ARVs for children are similar to those for adults: Zidovudine, Lamivudine, and Nevirapine. Nevirapine is replaced by Efavirenz for children under 3 years old or who weigh less than 10 kg. Side effects are similar to those experienced by adults.

#### 5.4.1. Assess nutritional status at every contact.

Measure weight-for-height (WFH) using the 2006 WHO standards and plot all results on the child's growth monitoring chart. Monitor the child for acute malnutrition using his/her MUAC and check for edema. If the child has bilateral edema and severe malnutrition, refer him/her to a therapeutic feeding program (TFP). (See **Annex 7. How to Measure MUAC.**) Also, monitor for lipodystrophy (increased blood fats) by doing the following:

- Ask the parent or caregiver about fat accumulation around the abdomen, breasts, or shoulders, or loss of fat around the hands, buttocks, or face.
- For children on protease inhibitors, test fasting lipid profiles (triglycerides and cholesterol) during their initial contact as well as annually. Blood sugar levels may be used to monitor manifestations of insulin resistance.

***One objective of ART in children is to promote optimal growth and development. A lack of growth or growth faltering over the 3–4 month period after an initially positive treatment response indicates the need to review ARVs and consider changing to next-line therapy.***

#### 5.4.2. Support parents to ensure children on ART consume adequate energy.

See **Annex 2a. Essential Nutrition Actions for Pregnant and Lactating Women and Their Children Who Are HIV-Negative or of Unknown Status** and **Annex 2b. Additional Essential Nutrition Actions for HIV-Positive Pregnant and Lactating Women, Other Adults, and Their Children.**

Encourage parents of children who attend school, and especially boarding school, to actively address their children's nutritional needs, which includes packing nutritious lunches and snacks every day.

For the management of severe malnutrition in children, see **Chapter 6.**

## 6. ORPHANS AND VULNERABLE CHILDREN

OVC may be found in homes, orphanages, or on the street. They include HIV-positive or unknown-status children who are orphaned or living with an HIV-positive parent or parents. For the purpose of nutrition care and support, OVC are divided into two groups: children under 5 and children 6–17 years of age.

**Materials needed:** MUAC tapes, weighing scales, height meters, deworming medicine, iron and folic acid supplements, HIV/AIDS and nutrition counseling cards and leaflets

### 6.1. OVC Under 5 Years of Age

#### 6.1.1. Support children, parents and caregivers to maintain strength.

Counsel the parent or caregiver on the seven ways PLHIV can maintain their strength (see **Section 3.2.2.**).

Provide a comprehensive AIDS care package which includes: HCT, GMP, immunization, prophylaxis for OIs (e.g., pneumocystis carinii pneumonia [PCP], tuberculosis [TB]), counseling of the mother or caregiver, and ART. **Table 3** shows adapted WHO recommendations for proper nutrition actions during the initial and follow-up consultations of OVC under 5.

**Table 3. Nutrition activities during follow-up of under-5 OVC**

Activities	At birth	1–2 weeks	6, 10, 14 wks	14 wks –6 months	6–12 months (monthly)	12–24 months (every 3 months)	> 24 months if asymptomatic or HIV negative)
Provide child health card (CHC)	X						
Weigh and plot on chart	X						
Assess AFASS criteria	X	X	X	X	X		
Demonstrate chosen IF option	X	X	X	X			
Provide vitamin A (200,000 international units [IU]) to the mother	X						
Counsel on maternal nutrition and breast health	X	X	X	X			
Counsel on IF		X	X	X	X	X	X
Distribute multi-nutrients to infants who are not breastfeeding		X	X	X	X	X	X
Prepare for early cessation if necessary and if AFASS criteria are met		X	X	X			
Examine the mother's breasts and counsel her on breast health		X	X	X			
Monitor growth and development			X	X	X	X	X

Activities	At birth	1–2 weeks	6, 10, 14 wks	14 wks –6 months	6–12 months (monthly)	12–24 months (every 3 months)	> 24 months (6 months if asymptomatic or HIV negative)
Assess palm pallor for signs of anaemia				X	X	X	X
Prepare for cessation, if AFASS					X	X	
Counsel, follow up, and support complementary feeding and replacement feeding if applicable					X	X	X
Provide vitamin A (100,000 IU) at 6–12 months					X		
Provide vitamin A (200,000 IU) every 6 months						X	X
Deworm every 6 months						X	X
Manage diet-related symptoms					X	X	X
Provide feeding follow-up and support					X	X	X
Provide or refer for oral and dental care							X

Where HIV tests (i.e. polymerase chain reaction [PCR] tests) are available, children's HIV status should be determined as early as possible (preferably before 12 months of age), especially if growth faltering is observed. Counsel the mother or caregiver to have the child's growth assessed monthly to ensure the child is growing adequately.

For additional information on applicable nutrition care, see **Annex 2a. Essential Nutrition Actions for Pregnant and Lactating Women and Their Children Who Are HIV-Negative or of Unknown Status** and **Annex 2b. Essential Nutrition Actions for HIV-positive Pregnant and Lactating Women, Adults, and Their Children**.

### 6.1.2. Assess nutritional status at every contact.

Measure the child's weight and height during each contact. MUAC can also be used as it can help community-based programs to assess nutritional status (See **Annex 7. How to Measure MUAC**). Assess anaemia by looking at the pallor of the palms. Ask about any illnesses, symptoms, or medication being taken at the time of the visit and refer the client to a clinician for further assessment if needed.

**Refer children who have lost  $\geq 10\%$  of their weight in 2–3 months or have MUAC < 110 mm for ARV assessment and implement ART as appropriate.**

### Actions for Providers

- Accurately record weight, WFH (or MUAC), and anaemia status on the CHC and encourage the parent or caregiver to share the card with other service providers.
- If WFH < –3 z-scores or MUAC < 110 mm, refer the child to a clinician for evaluation of advanced disease and/or therapeutic feeding.
- If moderately acutely malnourished (WFH between – 3 and –2 z-scores), refer the child for assessment of HIV status and supplementary feeding.
- If the child shows signs of anaemia (see **Annex 4. Treatment of Anaemia**):
  - Refer for determination of HB level and for testing for malaria
  - Give deworming medicine (e.g., 400 mg of Albendazole for children ≥ 1 year old) and iron and folic acid supplements
  - Counsel on feeding the child foods rich in iron (e.g.) red meat, liver, fish, poultry, eggs, legumes, nuts and foods rich in vitamins A and B12 (e.g., carrots, eggs, liver, mangoes, green leafy vegetables, sweet potatoes, butter)

## 6.2. OVC 6–17 years old

### 6.2.1. Support the child to maintain his/her strength.

Counsel the child and parent or caregiver on the seven ways PLHIV can maintain their strength. (See **Section 3.2.2**.)

### 6.2.2. Assess the child's nutritional status at every contact.

Measure the child's weight in kilograms to the nearest 100 grams and height in meters to the nearest 10 centimeters monthly and calculate BMI for age (see BMI chart in **Annex 3**). Check for anaemia by looking at the pallor of the palms. Ask about any illnesses, symptoms, or medication being taken at the time of the visit and refer the child to a clinician for further assessment if necessary.

### Actions for Providers

- Accurately record BMI and anaemia status on the CHC and encourage the parent or caregiver to share the card with other service providers.
- If BMI for age is < –3 z-scores, refer the child to a clinician for evaluation of advanced diseases and/or therapeutic feeding. (WHO Growth Standards 2007)
- If moderately malnourished (BMI-for-age between – 3 and –2 z-scores), refer the child for assessment of HIV status and supplementary feeding. (WHO Growth Standards 2007)
- If the child shows signs of anaemia (see **Annex 4. Treatment of Anaemia**):
  - Refer for determination of HB level and testing for malaria
  - Give deworming medicine (e.g., 400 mg of Albendazole for children ≥1 year old), and iron and folic acid supplements
  - Counsel on feeding the child foods rich in iron (e.g., red meat, liver, fish, poultry, eggs, legumes, nuts) and foods rich in vitamins A and B12 (e.g., carrots, eggs, liver, mangoes, green leafy vegetables, sweet potatoes, butter)

## 6.3. Psychosocial support

### 6.3.1. Support the parent or caregiver.

Parents and caregivers need help adopting positive attitudes for themselves and OVC under their care. Pursue the following practices to ensure adequate psychosocial support:

- Encourage the parent or caregiver to have the child tested for HIV if the child's status is unknown. If the child is 10 years old or younger, the parent or caregiver must give consent for testing and receive pre-testing counseling according to the National Guideline on Voluntary Counseling and Testing.
- Provide emotional support and ensure the parent or caregiver continues to give nutrition support to the OVC's siblings during illnesses, including when the parent or caregiver is at the hospital with the ill child.
- Assist in succession planning in case the primary parent or caregiver is ill and ensure that the successive caregiver is prepared to continue participating in medical follow-up.
- Link the parent or caregiver to peer support, HBC, and/or food supplementation programs.
- Encourage family planning and birth spacing to ensure the nutritional recovery of the mother between births and optimal child care.
- Encourage the parent or caregiver to plant a garden to supplement food needs and income.

### 6.3.2. Support the child.

Psychosocial care for OVC requires addressing issues likely to affect nutrition. Therefore, facilitate links with social welfare services and community-based groups for continuous support of OVC. Also, advise the parent or caregiver to watch for signs of depression in the child (e.g., loss of appetite, moodiness) and to seek social welfare services if they arise.

### 6.3.3. Support the household and the community.

Work with households and communities to address the following:

- **Inequality in intra-household food and care distribution.** Often OVC are not given the same quality of food and care as other household members. Encourage households to make special arrangements to meet HIV-positive OVC's increased needs.
- **Discrimination and stigma.** This may come from family or community members and in schools and other social places.
- **Beliefs about feeding and caring for sick children.** Some beliefs deprive sick children of adequate nutrition or certain foods while others favor sick children. Identify and address detrimental taboos and encourage good health and nutrition for sick children (see **Annexes 2a and 2b**).

Work with communities to initiate or strengthen programs. They will be especially necessary when parents and caregivers need help maintaining their livelihoods when the child's sickness takes time away from work or school or to support community feeding centers, school feeding programs, and food distribution for OVC, for example. During HBC, watch for and help relieve anxiety and depression that may interfere with care of the infected child and/or uninfected siblings. Also, link older OVC to life-skills programs that can help in creating long-term food security.

For children on ART, see **Chapter 5**.

For terminally ill children, see the recommendations in **Chapter 7** for all HBC patients.

## 7. HOME-BASED CARE

During HBC, severely ill AIDS patients are identified and cared for by family members or volunteers under the supervision of a nurse. Caregivers may prepare food, bathe patients, clean the patients' clothes and houses, and provide psychological support. Nurse supervisors assess clinical conditions, treat basic infections, and refer patients for more comprehensive treatment if needed. They also assist with food provision and psychological counseling.

**Materials needed:** MUAC tapes, deworming medicine, iron and folic acid supplements, multi-micronutrient supplements, therapeutic and supplementary food, HIV/AIDS and nutrition counseling cards and leaflets

### 7.1. Assessing Nutritional Status at Every Contact

Measure the client's MUAC and refer him/her to therapeutic or supplementary feeding or to an outpatient therapeutic program (OTP) if his/her MUAC is as follows:

- **Adult men and non-pregnant/non-lactating women:** < 18.5 cm
- **Pregnant and/or lactating (up to 6 months) women:** < 21 cm
- **Children:**
  - 6 -11 months: < 12 cm
  - 12 - 59 months old: < 13 cm
  - 5 - 9 years: < 14.5 cm
  - 10 -14 years: < 18.0 cm

Assess the client's dietary intake during the past 24 hours, considering the following:

- Frequency and volume of meals
- Energy and nutrient density of the meals and snacks
- Intake of water, specifically the amount and whether it was safe (i.e., treated or boiled)
- Factors preventing adequate food consumption (e.g., time for food preparation, poor appetite, illness and pain, depression, food availability, access to food, food beliefs and attitudes)
- Food intolerances and physical symptoms they may have caused (e.g., pain, skin rash, diarrhoea)
- Dietary restrictions of ARVs and other medications, and signs of drug side-effects (e.g., rash, dizziness, drowsiness, anorexia, nausea, vomiting, diarrhoea, mouth sores, fatigue, fever, sleep disturbances)
- Consumption of alcohol, cigarettes, chat, and other drugs

Assess the client's hygiene, sanitation, and living conditions, including the following:

- Availability and use of latrine and waste disposal
- Cleaning and storage of utensils
- Use and storage of boiled or treated water

- Personal hygiene (e.g., washing hands after bowel movements and before and after handling food, bathing, clothing, toothbrush, fingernails)

Evaluate:

- Any exacerbation or deterioration in the client's condition that is not manageable at home, including vomiting, severe or prolonged loss of appetite or inability to swallow, diarrhoea, dehydration, severe anaemia, changes in alertness
- The food security of other household members, including inequalities affecting the client or other household members
- Who selects what is cooked and then prepares it for the client and whether this person understands the nutritional needs of the client
- Household food availability and access, and coping strategies during times of food insecurity

#### **Actions for Providers**

- If vomiting, loss of appetite, diarrhoea, or changes in the client's alertness are no longer manageable at home, take her/him to a hospital.
- If the condition is mild, manage the illness to ensure continuous adequate intake of food. Support the client or family to modify diet as needed to facilitate a cure or feeding, or to reduce severity of the symptoms.
- Document the client's condition and all actions taken and report them to a health supervisor.
- If the client is moderately malnourished (WFH – 3 and –2 z-scores; BMI < 16-17.99), refer him/her for assessment of HIV status and food and nutrition interventions feeding.
- If the client is severely malnourished (WFH < -3 and BMI < 16), refer him/her for inpatient care.

## **7.2. Supporting the Client to Maintain Strength**

Counsel clients on the seven ways PLHIV can maintain their strength (see **Section 3.2.2.**).

Help the caregiver help the client eat better by discussing the following:

- Using locally available and affordable foods to improve food variety and diversity, taking into consideration food the client likes
- Developing a kitchen or backyard garden to supplement the family's food with vegetables and/or fruits
- Using fermentation, germination and blending, and adding oil, butter, cheese, or sugar to improve the energy density, nutrient content, or flavor of the food
- The best time to feed to the client and amounts required at each feeding (see **Annex 12. Developing a Drug-and-Food Plan**)
- Active feeding and flexibility, and always keeping food and drink within reach of the client

- Sitting with the client to encourage eating and to give hope
- Encouraging the client to take small sips of cooled boiled or treated water to avoid dehydration

Demonstrate how to:

- Improve food consistency for clients who have problems chewing and swallowing using locally available resources (e.g., mashing foods, pureeing foods, preparing high-energy and nutrient dense soups)
- Provide sip feeding to weak clients who have an appetite and can feed orally; foods for these clients may include special medical feeds such as high-energy formulations
- Prepare oral rehydration solution (ORS) with one glass of clean, boiled or treated water, a pinch of salt, and a half teaspoon sugar
- Improve the cleanliness of the environment, including food and water storage and handling
- Do simple body stretching to prevent bed sores and improve blood circulation and strength
- Massage bed-ridden clients to prevent muscle atrophy

If necessary, refer the family or caregiver to a food assistance program. If the client receives supplementary or therapeutic foods, help them prepare them at home. Make sure that the supplementary and therapeutic food intended for the client is not shared in the household and that the client is getting her/his share of food as recommended by the provider.

For HBC clients on ART, see **Chapter 5**.

## 8. BEHAVIOR CHANGE COMMUNICATION TOOLS

Four BCC tools have been developed to support the National Guidelines for HIV/AIDS and Nutrition. These are explained in **Table 4**.

**Table 4. BCC tools on HIV/AIDS and Nutrition**

 <p>The image displays four distinct BCC tools. At the top is a counseling card featuring a woman holding a bowl, with Amharic text and logos. Below it is a brochure with similar text and a woman illustration. The third tool is a poster with multiple panels showing people and text. The bottom tool is a BMI wall-chart, a grid with color-coded zones (red, orange, yellow, green) for BMI classification.</p>	<p><b>Counseling cards</b> detail the seven ways PLHIV can maintain their strength, as well as additional information for ART and HBC patients. They can be used in individual or group counseling sessions for HCT, MCH, ART, OVC, or HBC patients.</p> <p><b>Brochures</b> containing the shortened information as the counseling cards to be distributed following counseling sessions or at the discretion of providers.</p> <p><b>Posters</b> contain BCC messages focusing on the importance of increasing the amount and variety of food consumed. Posters are intended for HCT clinics and other medical facilities.</p> <p><b>BMI wall-charts</b> provide a simple reference for providers to use in calculating BMI.</p>
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Copies of these materials can be obtained by contacting:

**Federal Ministry of Health  
Family Health Department  
P.O. Box 1234  
Addis Ababa  
Ethiopia**

## 9. FOOD SECURITY AND FOOD ASSISTANCE

Food security at the household level means that all people in the household, including young children, have access to adequate foods—both in quantity and quality—to satisfy their physiological needs throughout the year. Generally, food security is comprised of:

- **Availability:** sufficient quantities of appropriate and necessary types of food from domestic production, commercial imports, or donors that are consistently available to individuals or are in reasonable proximity to them
- **Access:** individuals or households have adequate incomes or other resources to either purchase or barter for food in order to obtain the appropriate levels of food needed to maintain a level of consumption that will promote adequate diet and nutritional levels
- **Utilization:** food is properly used through the existence of appropriate food processing and storage practices, adequate knowledge and application of nutrition and child care, and adequate health and sanitation services

To achieve food security, households or individuals need to produce and/or purchase, store, and properly prepare food. Any illness or death among family members can reduce a household's productive labor, income, and food stores, undermining food security as earnings may be diverted to meet health and funeral costs. To cope, households containing PLHIV often:

- Reduce the quantity or quality of food at each meal or skip meals
- Adopt risky behaviors, including selling sex for food and money, child labor, crime, and drug abuse, all of which increase the spread of HIV/AIDS
- Withdraw children from school, which advances child labor and escalates crime and migration
- Consume wild game, fruits or vegetables, or possibly less nutritious foods (i.e. in terms of diversity and nutrient density)
- Sell key assets, which increases poverty and long-term food insecurity

### 9.1. Maintaining or Improving Food Quality and Quantity

#### 9.1.1. Support PLHIV to maximize their existing resources.

Counseling PLHIV and their households to do the following will help them maximize their existing resources:

- Use available resources, including food production and purchases, to procure food that is appropriate and adequate for the PLHIV in the household
- Add nutrients to food by pre-cooking, sprouting, fermenting, enriching, and fortifying them
- Demonstrate food processing approaches that increase energy, nutrient density, nutrient bioavailability, and food taste
- Use appropriate simple preservation techniques (e.g., solar drying of vegetables, fruits, and tubers, and smoking them for use during lean times)

- Ensure equitable intra-household food distribution that provides adequate foods for PLHIV
- Discuss issues that may stigmatize PLHIV in the household and affect food utilization

### 9.1.2. Support increased food production.

Identify organizations in the community that can help PLHIV produce food (e.g., more productive and short-maturing crops) and use labor-saving and production-maximizing technologies (e.g., small-scale drip irrigation, composting, natural crop protection). Encourage PLHIV in developing backyard and community gardens and find gardens in the community to use as models for them. Provide, or link families to programs that provide, seeds for labor-saving, highly productive crops. Advise households to diversify their income and food sources through income generating activities (IGAs) that do not require significant time and effort, that are socially acceptable, and that legally guarantee rights of succession. Also, link households with institutions that assist in marketing value-added products and services.

## 9.2. Food assistance for PLHIV

### 9.2.1. Advocate for food assistance for PLHIV.

The benefits of food assistance include:

- Serving as an income transfer, saving household income, helping members avoid high-risk situations, and acting as a safety net by assisting with asset protection
- Helping to meet nutritional needs and in particular special nutritional needs, such as increased energy requirements which otherwise may not be met
- Improving treatment adherence, especially for TB drugs and ARVs, which can possibly strengthen the treatment's efficacy and help manage drug side-effects
- Being used as an incentive for HCT, PMTCT, ART, participation in life-skills and alternative livelihood training, school attendance, and guardian and volunteer-caregiver support

### 9.2.2. Link needy PLHIV with food assistance programs.

Identify any available food assistance services, including groups that assist households affected by HIV/AIDS, and understand the criteria they use to select the services they offer and the recipients of those services. Provide information if available (i.e. handout materials about services provided). Collaborate with health, water safety, growth monitoring, and related programs to refine criteria and formalize links for referrals.

## 9.3. Types of Food Assistance

Not all PLHIV or affected households need food assistance. Appropriate beneficiaries

***Correctly targeting households with food security interventions can be challenging because NOT all PLHIV households are food-insecure, nor are all households without PLHIV necessarily secure.***

can be determined by considering the specific objective of food assistance and each PLHIV's needs. If deemed necessary, food supplements for PLHIV should meet the following criteria:

- Digestibility and toleration by both adult and child PLHIV
- Energy density, adequate protein, and fortification with multiple micronutrients
- Cultural acceptability
- Safety from contamination
- Ability to be processed, stored, and prepared with the available water, fuel, and time
- Foods that require less cooking and preparation time are advisable (e.g., pre-cooked or blended foods)

#### 9.4. Quantities of Food, Types, and Methods of Delivery

To calculate ration size, consider the following:

- The overall objective of the food assistance
- Individual nutritional requirements
- If calculating a household ration, the average household requirement in the catchment area, while still accounting for the increased energy needs of PLHIV
- Compensation for the average energy deficit in the area, or 30–40 percent of the energy needs for the targeted beneficiaries
- The possible wastage, spoilage, and leakage of the food through selling and sharing

*The common food ration package used by the World Food Programme (WFP) and other agencies to address household food insecurity is composed of corn-soy blend (CSB) fortified with micronutrients, cereal, a pulse, and vegetable oil which may in-kind be fortified with vitamin A and other micronutrient supplements.*

Types of food rations include:

- **Take-home rations:** Food is provided for the client to store, prepare and consume at home. A drawback is the risk that the food will not reach the targeted beneficiaries, as it may be sold, shared with others, or become spoiled.
- **On-site feeding:** Food is prepared in a central place and beneficiaries consume it on site. Food reaches targeted beneficiaries, but logistics may be costly, and can present significant time burdens for participants.
- **Food by prescription (FBP):** Food is prescribed in small quantities as a therapy to take home and consume. Health facilities are the best places for food by prescription. (Also see **Section 9.5.** below.)

#### 9.5. Food and Nutrition Interventions in Clinical Settings

Food and nutrition interventions can be provided as part of clinical HIV care and treatment. The objectives of such food and nutrition interventions are to improve

health, nutrition, drug adherence, and survival outcomes. Food and nutrition interventions in clinical settings includes the following components:

- Food and nutrition services provided as part of care and treatment, although if possible with strong linkages to community-based services
- Food prescribed for a limited duration on the basis of clear entry and exit criteria which are based on anthropometric measurement
- Take-home, specialized food products designed for use as individual daily rations in order to improve the nutrition and health outcomes of the targeted clients

These food and nutrition interventions are provided as a package program. The content and combination of services may vary depending on the nutritional status of the client, but include some or all of the following interventions (also see **Figure 4**):

- Therapeutic and/or supplementary foods
  - Therapeutic foods used include RUTF
  - Supplementary foods used include fortified blended foods (FBF), such as corn-soy blend (CSB) with additional oil, sugar, micronutrients, and possibly milk powder or whey protein concentrate
- Nutrition assessment and counseling
- Education on safe water, sanitation, and point-of-use water purification
- Links with livelihood programs

**Food supplementation is not appropriate for infants under 6 months of age** because such food can interfere with EBF and is usually not nutritionally adequate for infants on ERF. Malnourished infants under 6 months old should be managed according to FMOH and WHO guidelines.

**Figure 4. Food and nutrition interventions according to nutritional status**

<b>Severe malnutrition with complications</b>	<b>Severe malnutrition without complications</b>	<b>Mild or moderate malnutrition</b>	<b>No malnutrition</b>
<ul style="list-style-type: none"> <li>• Hospitalization and treatment using National protocol guidelines</li> <li>• Weighing every other day</li> <li>• Therapeutic feeding (e.g., ~100% energy and micronutrient needs)</li> <li>• Safe water and deworming</li> </ul>	<ul style="list-style-type: none"> <li>• Biweekly nutrition assessment</li> <li>• Nutrition counselling and education on weight gain</li> <li>• Therapeutic ration package (~100% energy and micronutrient needs)</li> <li>• Safe water and deworming</li> </ul>	<ul style="list-style-type: none"> <li>• Monthly nutrition assessment</li> <li>• Nutrition counselling and education on weight gain and dietary practices</li> <li>• Supplementary ration package (~40% energy needs)</li> <li>• Safe water and deworming</li> </ul>	<ul style="list-style-type: none"> <li>• Periodic nutrition assessment</li> <li>• Nutrition counselling and education on 4–5 key messages</li> <li>• Micronutrient supplementation</li> <li>• Safe water and deworming</li> <li>• Link to livelihood community programs</li> </ul>



1. All HIV-affected OVC 6–23 months old regardless of HIV status
2. Malnourished HIV-affected OVC 2–17 years old regardless of HIV status<sup>1</sup>
3. Malnourished HIV-positive adolescents and adults (men and non-pregnant or non lactating women) >17 years old
4. Malnourished HIV-positive pregnant and post-partum women

Table 5 lists eligibility criteria for receiving the food supplements.

**Table 5: Nutrition care plan entry and exit criteria**

Entry criteria	Food regime	Exit/transition criteria
<b><i>OVC 6–23 months old</i></b>		
<b>All (regardless of nutritional status)</b>	<p>If severe acute malnutrition, treat as below.</p> <p>If moderate acute malnutrition (MAM), provide 100 g per day of FBF and one 92g sachet of RUTF per day.</p> <p>HIV-infected and HIV-exposed children of unknown status with moderate acute malnutrition should also be given approximately 92 g per day (500 kcal per day) of RUTF in addition to FBF.</p>	Exit at the age of 24 months. If malnourished at 24 months, follow criteria below for severe acute malnutrition and moderate malnutrition.
<b><i>OVC 2 years –17 years old</i></b>		
<p><b><u>Severe acute malnutrition</u></b></p> <p>Bilateral pitting edema of any grade</p> <p><b>OR</b></p> <p><b>WFH z-score (WHZ) &lt; –3</b> or &lt; 70% WHO median reference value (<b>WHM</b>)</p> <p><b>OR</b></p> <p><b>MUAC</b>            Infants 6– &lt; 11 months: &lt;11 cm            Children 12–59 months: &lt; 11cm            Children 5–9 years: &lt; 13.5cm            Children 10–14 years: &lt; 16 cm</p>	<p><b><u>Inpatient vs. Outpatient</u></b></p> <p>Admit or refer for inpatient treatment if</p> <p>a) severe bilateral pitting edema (+ +)</p> <p><b>OR</b></p> <p>b) any grade of edema and MUAC below cut off points for SAM or WFH&lt;70% median or WFH z-score &lt; -3</p> <p><b>OR</b></p> <p>c) meet any of the SAM entry criteria and have any of these complications: anorexia, intractable vomiting, convulsions, lethargy, unconsciousness, lower respiratory tract infection, high fever &gt; 39° C, severe dehydration, severe anaemia, hypoglycemia, hypothermia &lt; 35° C, shock, malaria, lack of appetite, pneumonia, active TB, or chest in-drawing according to FMOH, WHO and Integrated Management of</p>	<p>If gaining weight (3–5 g/kg/day), review every 2 weeks.</p> <p>If not gaining weight for 3 consecutive weigh-ins, losing weight for 2 consecutive weigh-ins, or experiencing worsening edema, consider admission for inpatient care per <b>Phase 1</b>.</p> <p><b>Transition to moderate malnutrition regimen</b> below if WHZ &gt; –3 or WHM &gt; 70% (or MUAC &gt; 11 cm) and the patient has no edema for more than 2 consecutive weeks.</p>

<sup>1</sup> Children and adolescents may face barriers to HIV testing and should not be ineligible for FBP for this reason. Taking children into health facilities may overcome some of these barriers to testing.

Entry criteria	Food regime	Exit/transition criteria
<p><b>OR</b></p> <p>If charts are available, use MUAC-for-age or BMI-for-age from the WHO standards.</p>	<p>Childhood Illness (IMCI) guidelines.</p> <p><b>If the child does not meet a), b), or c) above and has an appetite, treat as an outpatient.</b></p> <p><b>Discharge from inpatient to outpatient care</b> if appetite returns (child eats at least 90% of RUTF), medical complications are controlled, bilateral pitting edema is decreasing, and child is clinically well and alert.</p> <ul style="list-style-type: none"> <li>• During <b>Phase 1</b> (which requires inpatient care), give F75 only and in amounts based strictly on weight. (See National Protocol for management of SAM March 2007).</li> <li>• During <b>Transition phase and Phase 2</b>, replace F75 with F100 (70–80 ml per kg of body weight per day). Gradually introduce RUTF in small amounts until the child can take RUTF.</li> <li>• Whether in inpatient or outpatient care, therapeutic foods provided to children in <b>Phase 2</b> should provide 200 kcal per kg of body weight per day and the essential micronutrients.</li> </ul>	
<p><b><u>Moderate malnutrition</u></b></p> <p><b>WHZ</b></p> <p>–3 to &lt; –2 of WHO median reference value</p> <p><b>MUAC</b></p> <p>6– &lt;11 months: &lt; 12cm</p> <p>12–59 months: &lt; 13 cm</p> <p>5–9 years: &lt; 14.5 cm</p> <p>10–14 years: &lt; 180 cm</p> <p>Or if charts are available, use MUAC-for-age or BMI-for-age from the WHO standards.</p>	<p>6–11 months: 92 g RUTF and 50g of FBF per day</p> <p>12–23 months: 92 g of RUTF and 100 g of FBF per day</p> <p>24–59 months: 92 g of RUTF and 100 g of FBF per day</p> <p>5–9 years: 92 g of RUTF and 200 g of FBF per day</p> <p>10–14 years: 92 g of RUTF and 200g of FBF per day</p> <p>15–17 years: 92 g of RUTF and 300g of FBF per day</p>	<p>6–23 months: Exit when child reaches the age of 24 months. If still malnourished, continue supplementation based on anthropometric criteria.</p> <p>24–59 months: Exit when WHZ &gt; –2 or WHM ≥ 80% or MUAC &gt; 13 cm for more than 2 consecutive weeks.</p> <p>5–9 years: Exit when MUAC &gt; 14.5 or BMI-for-age z-score &gt; –2 for more than 2 consecutive weeks.</p> <p>10-14 years: Exit when MUAC &gt; 18 cm or BMI-for-age z-score &gt; –2 for more than 2 consecutive weeks.</p> <p>15-17 years: Exit when MUAC &gt; 18 cm or BMI-for-age z-score &gt; –2 for more than 2 consecutive weeks.</p>

Entry criteria	Food regime	Exit/transition criteria
<b><i>Malnourished ART and pre-ART (non-pregnant/post-partum) adults and adolescents, either inpatient and outpatient</i></b>		
<p><b><u>Severe acute malnutrition</u></b></p> <p><b>BMI &lt; 16.0 kg/m<sup>2</sup></b></p> <p>If client cannot stand straight for height, <b>MUAC &lt; 16 cm</b></p> <p>Bilateral edema and BMI &lt; 18.5</p>	<p>About 3,100 kcal per day from a combination of RUTF and supplementary food (e.g., 1,500 kcal from RUTF (3 sachets) + 1,600 kcal from 400 gm supplementary food such as FBF)</p> <p><b>(3 sachets of RUTF + 400gms of FBF)</b></p>	<p>BMI &gt; 16.0 kg/m<sup>2</sup> (transition to supplementary protocol below)</p> <p><b>AND</b></p> <p>No edema for 2 consecutive visits at least 10 days apart</p>
<p><b><u>Moderate malnutrition</u></b></p> <p>BMI &gt; 16.0 but ≤ 18.5</p>	<p>About 1 sachet of RUTF (500 kcal) and 200 g of FBF (400 kcal per 100g) = 1,300 kcal of FBF</p>	<p>BMI &gt; 18.5 for 2 consecutive visits</p>
<b><i>HIV-positive pregnant or post-partum women (with infants &lt; 6 months)</i></b>		
<p>MUAC &gt; 18.5 cm but &lt; 21 cm</p> <p><b>OR</b></p> <p>Pregnant women losing weight in past 2 weigh-ins</p>	<p>About 1 sachet of RUTF (500 kcal) and 300 g of FBF = approximately 1,200 kcal FBF</p>	<p>MUAC &gt; 21 cm</p>

## 10. MONITORING AND EVALUATION

Systematic assessment, analysis, and documentation of the implementation and outcomes of activities—including the impact of nutrition on HIV/AIDS—are essential to determine the effectiveness of these guidelines and improve them. M&E also allows for experience sharing.

Service providers need to assess and report on the extent to which the recommendations in the Guidelines are incorporated into local programs, as well as the extent to which they lead to improved dietary patterns and nutritional status for PLHIV.

### 10.1. Monitoring the Guidelines

Consider three key questions:

- Are the Guidelines accessible to health providers, counselors, health educators, HEWs, teachers, social workers, and other users?
- Do the Guidelines help deliver nutrition care and support to PLHIV? Which elements are helpful? Which are not helpful? What are the gaps, if any?
- Are the Guidelines improving the nutritional status and quality of life of PLHIV, including their measurable dietary behavior changes?

### 10.2. What to Do

Keep accurate records of all clients, including their weight, food consumption patterns, symptoms, and received treatment.

With key stakeholders, agree on the purpose of M&E and the indicators to use (see **Annex 13. Monitoring and Evaluation Indicators**).

#### 10.2.1. Input Indicators

1. Number and proportion of hospitals, health centers, and health posts providing HIV services that have counseling materials on nutrition and HIV
2. Number and proportion of hospitals, health centers, and health posts providing HIV services that have at least one service provider trained to provide nutrition care and support services through a Federal HIV/AIDS Prevention and Control Program (FHAPCO) course
3. Number of people trained in nutrition and HIV to provide nutrition care and support services to PLHIV
4. Number of community health workers (CHWs) trained to support PMTCT + nutrition services
5. Number of CHWs trained to support HBC + nutrition services

#### 10.2.2. Process Indicators

6. Proportion of facility staff providing nutrition counseling to PLHIV who also provide quality counseling (to be defined by standard checklist)

### **10.2.3. Output Indicators**

7. Number and proportion of PLHIV clients receiving nutritional assessment
8. Number and proportion of PLHIV clients provided with nutrition counseling
9. Number of clients provided with nutrition supplements (i.e. disaggregated by ART, non-ART, PMTCT, and OVC; disaggregated by therapeutic food, supplementary food, and micronutrient supplements).
10. Proportion of clinically malnourished PLHIV receiving therapeutic or supplementary food
11. Number of households with OVC supported in IGAs and food production
12. Number of new TV or radio spots produced on nutrition and HIV, and number of hours these programs aired

### **10.2.4. Outcome Indicators**

13. Proportion of clients who ate at least the recommended number of times per day on the day prior to their visit

### **10.2.5. Impact Indicators**

14. Proportion of PLHIV who are malnourished, disaggregated by adult, pregnant/postpartum, and children)
15. Proportion of clients with unintentional weight loss since the last weigh-in
16. Proportion of malnourished PLHIV who die per quarter

## **10.3. Monitor and Report on the Availability and Usefulness of the Guidelines**

Monitor and report on the following:

- Monitor the dissemination and implementation of the Guidelines.
- Audit the effectiveness of implemented activities.
- Monitor stocks of key equipment, supplements, and recording materials (e.g., patient cards, registers, referral cards).
- Report symptoms and drug side effects that may be related to nutrition.
- Assess constraints in implementing the Guidelines.

## Annex 1. Daily Energy and Protein Requirements

Group	HIV negative	HIV positive		Protein (g/day)
	Energy (kcal/day)	Asymptomatic (not displaying symptoms) (kcal/day)	Symptomatic (displaying symptoms) (kcal/day)	
<b>Men</b>				
Average active	2430	2670	2910–3160	57
<b>Women</b>				
Average active	2170	2400	2600–2820	48
Pregnant	2460	2710	2950–3200	55
Lactating	2570	2830	3080–3340	68
<b>Children</b>				
6–11 months old	730	800	880–950	10
1–3 years old	1250	1380	1500–1630	25
2–5 years old	1500	1650	1800–1950	26
5–10 years old	1800	1980	2160–2340	35
<b>Boys</b>				
10–14 years old	2360	2600	2830–3070	64
15–18 years old	2800	3080	3360–3640	84
<b>Girls</b>				
10–14 years old	2040	2240	2450–2650	62
15–18 years old	2100	2310	2520–2730	65

Source: WHO, 1993.

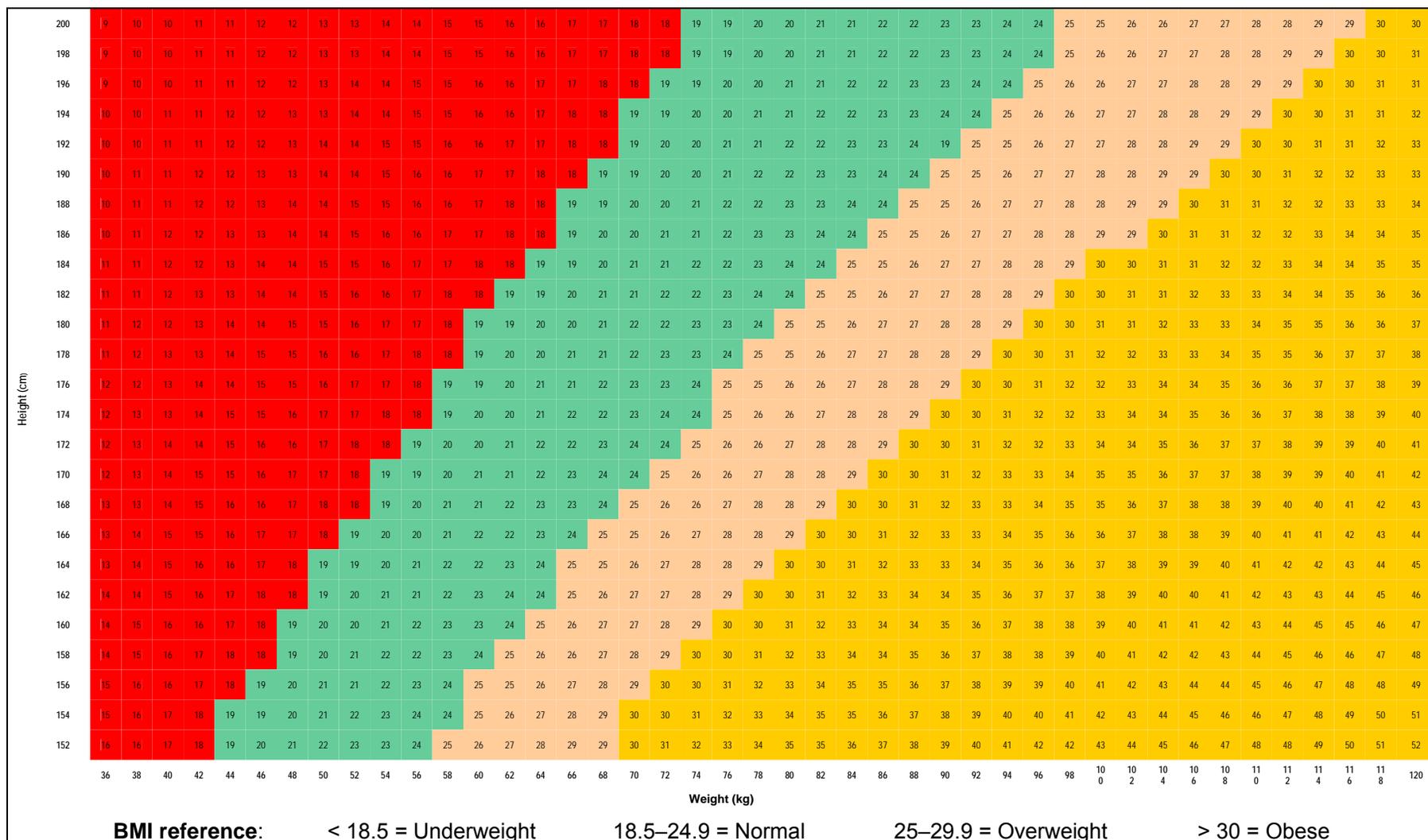
## Annex 2a. Essential Nutrition Actions for Pregnant and Lactating Women and Their Children Who Are HIV-negative or of Unknown Status

Optimal breastfeeding (< 6 months)	Adequate complementary feeding (6–23 months)	Nutritional care of sick and malnourished child	Control of vitamin A deficiency	Control of anaemia	Control of iodine deficiency disorders	Women's nutrition during pregnancy and lactation
<ul style="list-style-type: none"> <li>• Early initiation of breastfeeding within one hour of birth</li> <li>• Keep newborn warm and dry (skin to skin)</li> <li>• EBF during first 6 months</li> </ul>	<ul style="list-style-type: none"> <li>• Complementary feeding starting at 6 months with mashed foods</li> <li>• Continued breastfeeding until 24 months or beyond</li> <li>• Increased amount of food with age</li> <li>• Increased feeding frequency with age</li> <li>• Enriched diet with variety of foods and fortified foods</li> <li>• Responsive feeding</li> <li>• Hand washing before feeding</li> <li>• Food hygiene</li> </ul>	<ul style="list-style-type: none"> <li>• Increased frequency of breastfeeding during and after illness</li> <li>• Increased frequency of complementary feeding during and after illness (6–24 months)</li> <li>• Zinc supplementation for child with diarrhoea</li> <li>• Vitamin A supplementation as recommended</li> <li>• Special care for malnourished children depending on severity</li> <li>• Kangaroo care for newborns with low birth weight</li> </ul>	<ul style="list-style-type: none"> <li>• Diversified diet with vitamin A-rich foods (e.g., ripe orange and yellow vegetables and fruits, liver) and fortified foods</li> <li>• Vitamin A supplementation for woman after delivery</li> <li>• Vitamin A supplementation twice a year for children 6–59 months</li> </ul>	<ul style="list-style-type: none"> <li>• Diversified diet with iron- rich foods (e.g., animal products, dark green leafy vegetables) and fortified foods</li> <li>• Daily iron and folic acid supplementation for pregnant woman for 6 months, continuing after delivery if needed</li> <li>• Deworming for pregnant women after the first trimester</li> <li>• Deworming for children 12–59 months old twice per year</li> <li>• In malaria endemic areas, sleeping under ITNs and for pregnant women, intermittent presumptive treatment</li> </ul>	<ul style="list-style-type: none"> <li>• Iodized salt</li> </ul>	<ul style="list-style-type: none"> <li>• One additional meal daily during pregnancy</li> <li>• Two additional meals daily during lactation</li> <li>• Breast health during lactation</li> <li>• Less workload and more rest during pregnancy</li> </ul>
Child spacing and immunization						
Clean water, hygiene, and sanitation						

## Annex 2b. Additional Essential Nutrition Actions for HIV-positive Pregnant and Lactating Women, Other Adults, and Their Children

Optimal breastfeeding (< 6 months)	Adequate complementary feeding (6–23 months)	Nutritional care of sick and malnourished child	Control of vitamin A and other micronutrient deficiencies	Control of anaemia	Control of iodine deficiency disorders	Women's nutrition during pregnancy and lactation	Adult nutrition
<ul style="list-style-type: none"> <li>• AFASS assessment for safest IF option</li> <li>• Support IF option</li> <li>• Multi-micronutrient supplements for infant if mother is not breastfeeding or not using commercial breast milk substitutes</li> </ul>	<ul style="list-style-type: none"> <li>• Early cessation of breastfeeding when AFASS, with adequate ERF</li> <li>• Energy intake increased by 10% if suspected HIV-positive and <u>not losing weight</u> (one extra feeding each day)</li> <li>• Use FBF when available</li> <li>• Assess health and growth of child</li> </ul>	<ul style="list-style-type: none"> <li>• Counsel on testing the child (depends on test availability)</li> <li>• Immediate treatment of sickness</li> <li>• Dietary management of nausea, vomiting, oral sores, etc.</li> <li>• Energy intake increased by 50-100% if <u>losing weight</u> (<b>double</b> the daily feedings)</li> <li>• Supplementary or therapeutic feeding if child is moderately or severely malnourished per guidelines</li> </ul>	<ul style="list-style-type: none"> <li>• Supplementation at RDA with multiple micronutrients if diet not adequately diverse</li> </ul>	<ul style="list-style-type: none"> <li>• See ENA for HIV-negative individuals</li> </ul>	<ul style="list-style-type: none"> <li>• See ENA for HIV-negative individuals.</li> </ul>	<ul style="list-style-type: none"> <li>• Energy intake increased by 10% if non-symptomatic (<b>one</b> extra feeding each day)</li> <li>• Energy intake increased by 20–30% if symptomatic or <u>losing weight</u> (<b>two</b> extra feedings each day)</li> <li>• BMI for nutrition monitoring (or MUAC for pregnant woman)</li> <li>• Breastfeeding stopped if breast problems exist</li> <li>• Dietary management of nutrition-related symptoms</li> <li>• Importance of malaria prevention and deworming</li> <li>• Counseling and referral for PMTCT and/or ARVs</li> </ul>	<ul style="list-style-type: none"> <li>• Diversified diet</li> <li>• Energy intake increased by 10% if non-symptomatic (<b>one</b> extra feeding each day)</li> <li>• Energy intake increased by 20–30% if symptomatic or <u>losing weight</u> (<b>two</b> extra feedings each day)</li> <li>• Evaluation of interaction of nutrition and ARVs</li> <li>• Monitoring of weight and BMI</li> <li>• Dietary management of nausea, vomiting, and other nutrition-related symptoms</li> <li>• Physical exercise to build muscle mass</li> </ul>
Assessment of household food security							
Immediate treatment of all illnesses							

### Annex 3. Calculating Body Mass Index



## **To calculate BMI:**

### **Step 1: Measure Weight**

- Make sure the scale pointer is at zero before starting.
- Ask the patient to remove any heavy clothes.
- Ask the patient to stand straight and unassisted in the middle of the scale.
- Record weight to the nearest 0.1 kg.

### **Step 2: Measure Height**

- Ask the patient to remove her/his shoes and stand erect (knees straight and feet together), with heels, buttocks, shoulder blades, and back of head against the wall, eyes facing straight forward.
- Record height to the nearest 0.5 cm.

### **Step 3: Convert Weight and Height to BMI**

- Convert centimeters to meters (1 m = 100 cm).
- Calculate BMI using the chart on the previous page by identifying where weight and height intersect. For example, if the patient weighs 60 kg and is 158 cm tall, her BMI is 24.

### **Refer the patient for evaluation if:**

- BMI is below 18.5 or above 30
- Patient experiences unintended weight loss for 2 consecutive months or loses more than 6 kg within a month

**DO NOT USE BMI FOR PREGNANT WOMEN. USE MUAC INSTEAD.**

## Annex 4. Treatment of Anemia

(Note: Adapted from the National Guideline for Control and Prevention of Micronutrient Deficiencies)

Anaemia is diagnosed by:

- Clinical examination (extreme pallor of the palms of the hands) **OR**
- Laboratory (HB/hematocrit tests) as in **Table 1**,

**Table 1. HB values defining anemia, by population group**

Population group	HB value defining anemia (g/dL)
Children 6–59 months old	< 11.0
Children 5–11 years old	<11.5
Children 12–14 years old	<12.0
Non-pregnant women > 15 years old	<12.0
Pregnant women	<11.0
Men > 15 years old	<13.0

Source: WHO/UNICEF, UN University, 2001 value as used in DHS.

Initiate treatment as prescribed in **Table 2**.

**Table 2. Iron and folic acid doses for severe anemia, by vulnerable group**

Group	Iron and folic acid dose	Duration
Children < 2 years old*	<b>Iron:</b> 25 mg/day <b>Folic acid:</b> 100-400 mcg/day	3 months
Children 2–12 years old	<b>Iron:</b> 60 mg/day <b>Folic acid:</b> 400 mcg/day	3 months
Adolescents and adults (including pregnant women)	<b>Iron:</b> 120 mg/day <b>Folic acid:</b> 400 mcg/day	3 months

\* Children with kwashiorkor or marasmus should be assumed to be severely anemic. Oral iron supplementation should be delayed until the children start eating again and gain weight, usually after 14 days.  
Source: Stoltzfus and Dreyfuss, 1998

Follow storage precautions as per the national guideline for drug storage. Also ensure proper labeling, ensuring expiration dates are placed on vitamin supplement containers.

### Dietary Diversification

Food diversification is important to prevent iron deficiency. Individuals and groups should be encouraged to produce and eat iron-rich foods at all times. This requires guidance from the Ministries of Health, Agriculture, Education, and Information and Communication, regional states, donors, and NGOs. Extension agents play a key role in promoting and improving storage and consumption of iron-rich foods. The best source of iron for infants is breast milk.

### Animal Sources of Iron

Animal products (i.e. meat, organs, blood) are the best food sources of dietary iron. Children 6–24 months old and pregnant women should be given priority to eat small

amounts of animal products, if available. Animal products not only provide iron that is well absorbed (20–30 percent absorption compared with less than 5 percent for plant sources), but also counter the effects of iron inhibitors found in plant products. Animal products are also the only source of vitamin B-12, an important micronutrient for preventing anemia.

### Plant Sources of Iron

Dark green leafy vegetables and legumes are the best plant sources of iron. Legumes are also excellent sources of folic acid. Eating foods rich in vitamin A can also help prevent anemia. Food processing techniques (e.g., cooking, germinating, fermenting, soaking grains) can reduce factors that inhibit iron absorption.

### Food Fortification

Fortifying staple foods with iron is a key way to increase dietary intake of iron in countries where iron-rich foods are too expensive for the poor. This strategy can be beneficial to the entire population if numerous food types are processed and fortified at the factory level. Unfortunately, fortifying foods in Ethiopia is difficult because no single staple food is consumed throughout the country and common foods are not processed in factories. Some efforts are underway to fortify sugar and oils produced in some of the larger factories.

### Control of Direct Causes of Anemia

To control non-iron deficiency anemia, it is critical to coordinate actions with malaria and helminthiasis control programs. **Table 3** lists malaria prophylaxis and treatment for pregnant and lactating women and children.

**Table 3. Malaria control**

Target group	Prophylaxis	Treatment
Pregnant and lactating women and children	Sleep under an impregnated mosquito net	Immediate access to treatment Refer to the Guidelines

**Table 4** lists helminthiasis prophylaxis and treatment for pregnant and lactating women and children.

**Table 4. Helminthiasis treatment and control**

Target groups	Prophylaxis	Treatment
Pregnant and lactating women	Mebendazole 500 mg in 1 dose Albendazole 400 mg in 1 dose	During the third trimester of pregnancy
Children > 1 year old	Mebendazole 500 mg in 1 dose Albendazole 400 mg in 1 dose	Every 6 months

In addition, it is important to encourage hygiene and environmental sanitation to prevent parasites (worms) in women, children, and PLHIV. Control of schistosomiasis is also critical in endemic areas. Refer to the Guidelines.

## Annex 5. Energy Values of Meals, Snacks, and Foods Available in Ethiopia

Table 1 lists common Ethiopian meals, each providing 700–850 kcal of energy.

**Table 1. Common Ethiopian meals providing 700–850 kcal of energy each**

Food	One enjera with...		
	1 sauce	2 sauces	3 sauces
Shiro	5 small ladles shiro	4 small ladles shiro and one small ladle vegetable	3 small ladles shiro, 1small ladle vegetable alicha, and 1small ladle tomato salad
Miser	3 big ladles miser	2 big ladles miser sauce and 1 big ladle gommen	1 big ladle miser sauce, 1 small ladle gommen, and 1 small ladle tomato
Bozena shiro	5 small ladles bozena shiro	4 small ladles bozena shiro and 1 small ladle tomato salad	3 small ladles bozena shiro, 1 small ladle vegetable alicha, and 1 small ladle tomato salad
Pumpkin	5 small ladles pumpkin	4 small ladles pumpkin and 1 small ladle vegetable alicha	3 small ladles pumpkin sauce, 1 small ladle vegetable alicha, and 1 small ladle tomato salad
Potato	5 small ladles potato	4 small ladles potato and 1 small ladle vegetable alicha	3 small ladles potato sauce, 1 small ladle vegetable alicha, and 1small ladle ater kick
Ater kick	5 small ladles ater kick	4 small ladles ater kick and 1 small ladle vegetable alicha	3 small ladles ater kick, 1 small ladle vegetable alicha, and 1small ladle tomato salad
Gommen	3 big ladles gommen	2 big ladles gommen with 2 small ladles shiro	1 big ladle gommen, 1 small ladle shiro, and 1small ladle vegetable alicha
Siga	4.5 small ladles meat	3 small ladles meat sauce 1 small ladle vegetable	2 ladles meat sauce, 1 small ladle vegetable alicha and 1 small ladle tomato salad

Note: Small ladle = 50 g Medium ladle = 70 g Large ladle =100 g

**Table 2** lists common Ethiopian **snacks**.

**Table 2. Energy values of common Ethiopian snacks (meskses)**

Snack (ingredients)	Amount in g/ml	Calories	Protein
Kolo (roasted cereals and legumes)	50 g (1 small ladle)	195	5.10
Nifro (boiled cereals and legumes)	70 g (1 medium ladle)	125	301
Kitta/ambasha	100 g (1 slice)	222	6.80
Beso drink (beso and sugar)	55 g (5 medium tablespoons beso and 1 teaspoon sugar)	205	5.05
Beso firfir (beso and oil)	65 g (6 medium tablespoons beso and 1 teaspoon oil)	267	6.06
Sweet potato	100 g (1 average-size sweet potato)	134	0.50
Boiled milk	140 ml (2 large coffee cups)	103	4.70
Tea with sugar	10 g sugar (2 teaspoons)	40	0
Ashuk (roasted and boiled beans)	70 g (1 large coffee cup)	192	11.48
Mango	100 g (1 average-size mango)	44	0.30
Banana	100 g 1 average-size banana)	88	0.80
Fried bread unleavened (wheat flour, spiced pepper, oil, salt, water)	300 g	668	13.7
Thick porridge (barely flour, oil, spiced pepper, salt, water)	350 g	591	13.9
Chopped enjera with meat sauce (enjera, meat sauce)	300 g	466	22.3
Chopped enjera with out meat sauce (onion, pepper, oil, salt, water)	265 g	456	7.60
Split wheat, barley, oats (kinche) (wheat, butter, salt)	160 g	626	13.7

Note: Small ladle = 50 g      Medium ladle = 70 g      Teaspoon = 5 ml      Tablespoon = 25 ml      Large coffee cup= 70 ml

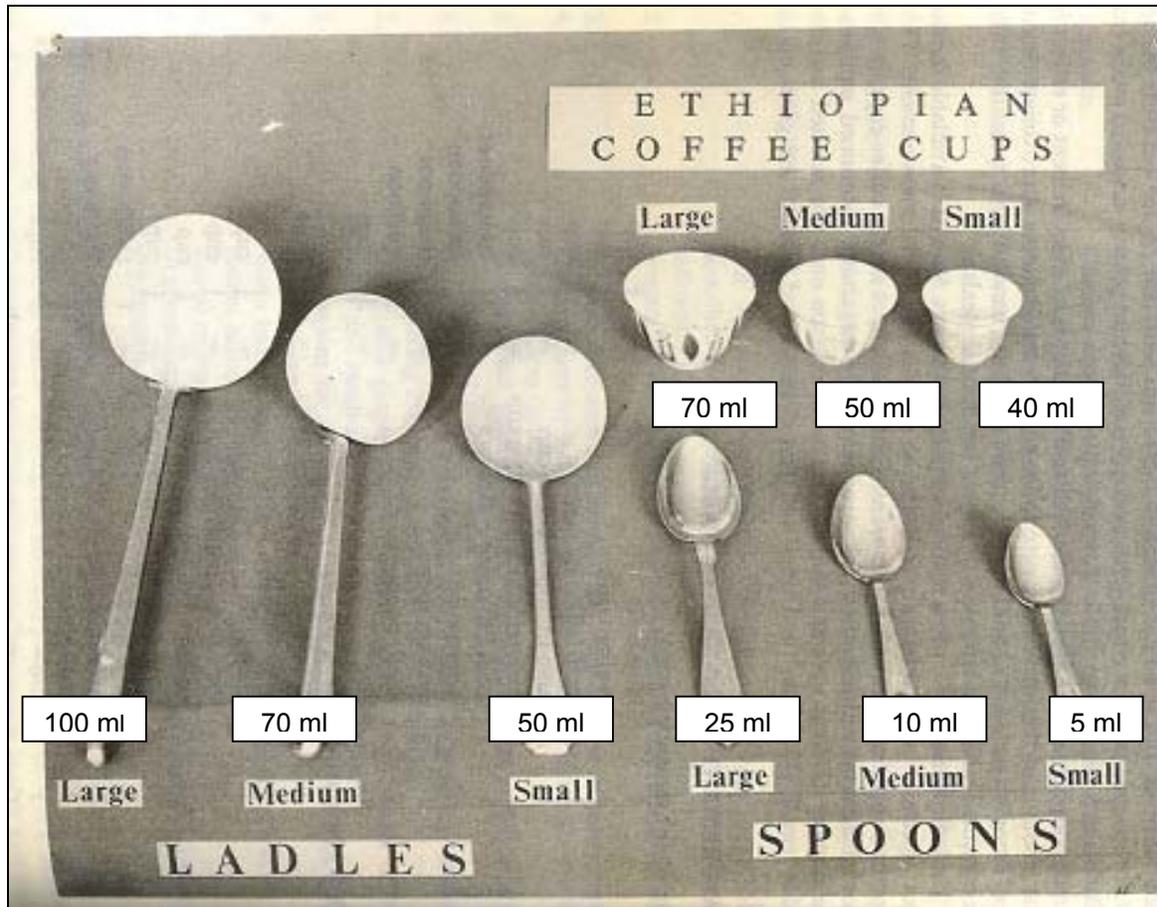
Table 3 lists common Ethiopian **bulk foods**.

**Table 3. Energy value of common Ethiopian foods, per 100 g**

Food	Local name	Energy (kcal)	Protein (g)
<b>Cereals</b>			
Barley, white, flour	Gebes, nech, duqyet	368	8.5
Corn, white, flour	Beqqollo, nech, duqyet	378	9.0
Sorghum, white, flour	Mashilla, nech	375	8.1
Teff, red, flour	Teff, qeyy, duqyet	355	9.0
Wheat, white, flour	Sindyee, nech, duqyet	363	10.9
<b>Starchy roots and tubers</b>			
False banana, flour	Enset, karta	196	.9
Potato Irish, raw	Yabesha dinnich, yalteqqequele	104	1.3
Sweet potato, raw	Sequar dinnich, yalteqqequele	136	1.3
<b>Legumes</b>			
Kidney beans, whole, dried	Adengwarrye, difin, dereq	354	19.1
Lentil, split	Missir, kick	355	23.0
Peas, flour	Ater, duqyet	352	20.1
<b>Vegetables</b>			
Carrot, raw	Carrot, yalteqqequele	42	1.7
Cabbage, raw	T'iqill gommen, yalteqqequele	21	.9
Ethiopian kale, raw	Gommen, yalteqqequele	46	2.8
Onion (shallot), raw	Qeyy shinkurt, yalteqqequele	71	1.06
Tomato, raw	Timatim, yalteqqequele	31	1.3
<b>Fruits</b>			
Avocado, fresh	Avokado	110	1.6
Lemon, fresh	Lomi	49	.4
Orange, fresh	Birtukan	34	.7
Pineapple, fresh	Ananas	35	.4

<b>Meat, poultry, and other animal products</b>			
Beef, raw	Yebere siga, tire	115	19.8
Mutton, raw	Yebeg siga, tire	91	19.7
Goat meat, raw	Yefiyel siga, tire	99	19.9
Chicken, whole, raw	Doro, mulu, tire	93	16.4
Milk, cow, fresh	Yelam wetet, yaltefella	74	3.4
Egg, whole, raw	Inqulal, difin, tire	153	12.1
<b>Fish</b>			
Lake fish, raw	Yehaiq asa, tire	107	17.6
River fish, raw	Yewenz asa, tire	137	18.9
<b>Sugars</b>			
Sugar, refined	Sequar	385	0.0
<b>Fats</b>			
Butter, unspiced, raw	Qibye, qimem, yelellew, tire	735	1.3
Oil, Niger seed, fresh	Zeyt, nug	896	0.0

Figure 1. Common serving and measuring utensils in Ethiopia



## Annex 6. Nutrition Management of Symptoms Associated with HIV/AIDS

Symptom	Food	Care and nutrition practices
<b>Anorexia (appetite loss)</b>	<ul style="list-style-type: none"> <li>• Stimulate appetite by eating favorite foods.</li> <li>• Eat small amounts of food more frequently.</li> <li>• Select foods that are more energy dense.</li> <li>• Avoid strong-smelling foods.</li> </ul>	<ul style="list-style-type: none"> <li>• If loss of appetite is due to illness, seek medical attention.</li> </ul>
<b>Diarrhoea</b>	<ul style="list-style-type: none"> <li>• Drink a lot of fluids to avoid dehydration (e.g., soups, diluted fruit juices, boiled water).</li> <li>• Drink juices such as passion fruit; avoid strong citrus fruits (e.g., orange, lemon) because they may irritate the stomach.</li> <li>• Eat foods rich in fiber to help you retain fluids (e.g., millet, banana, peas, lentils).</li> <li>• Eat starchy foods (e.g., rice, maize, sorghum, potato, cassava) and blended foods such (e.g., corn-soy blend).</li> <li>• For protein, eat eggs, chicken, or fish.</li> <li>• Drink light teas (herbal) and boiled or treated water.</li> <li>• Boil or steam foods and avoid fried foods.</li> <li>• Eat fermented foods (e.g., porridges, yogurt).</li> <li>• Eat easily digestible foods high in carbohydrates (e.g., rice, bread, millet, maize, porridge, potato, sweet potato, crackers).</li> <li>• Eat small amounts of food frequently and continue to eat after illness to recover weight and nutrients.</li> <li>• Eat soft fruits and vegetables (e.g., bananas, squash, mashed sweet potato and carrots).</li> <li>• Drink nonfat milk if you have no problems with lactose.</li> </ul> <p><i>Avoid or reduce the intake of:</i></p> <ul style="list-style-type: none"> <li>• Some dairy products, such as milk</li> <li>• Caffeine (coffee and tea) and alcohol</li> <li>• Fatty or excessively fried foods</li> <li>• Extra oil, lard, or butter</li> <li>• Gas-forming foods (e.g., cabbage, onions, carbonated beverages/soft drinks)</li> </ul>	<p><b>Prevention</b></p> <ul style="list-style-type: none"> <li>• Drink plenty of clean, boiled or treated water.</li> <li>• Wash hands with soap and water before handling, preparing, serving, or storing foods.</li> <li>• Wash hands with soap and water after using a toilet or latrine or cleaning a child who has defecated.</li> </ul> <p><b>Treatment</b></p> <ul style="list-style-type: none"> <li>• Drink more fluids to prevent dehydration. Prepare ORS using ORS packets or a homemade solution of one liter of boiled water, four teaspoons of sugar, and a half-teaspoon of iodized salt.</li> <li>• Go to a health center if you have symptoms such as severe dehydration (low or no urine output), fainting, dizziness, shortness of breath, bloody stool, high fever, vomiting, severe abdominal pain, or diarrhoea for more than 3 days.</li> </ul>
<b>Fever</b>	<ul style="list-style-type: none"> <li>• Eat soups made of energy- and nutrient-rich foods (e.g., maize, potatoes, carrots).</li> <li>• Drink teas made from lemon, guava, and the gum tree.</li> <li>• Drink more than usual (beyond quench of thirst).</li> </ul>	<ul style="list-style-type: none"> <li>• Drink fluids to prevent dehydration, especially clean, boiled or treated water.</li> <li>• Continue to eat small, frequent meals, as tolerated.</li> <li>• Bathe in cool water.</li> </ul>

	<ul style="list-style-type: none"> <li>• Drink plenty of liquids.</li> </ul>	<ul style="list-style-type: none"> <li>• Rest.</li> <li>• Take two aspirins or Panadol with a meal three times a day (morning, afternoon, and evening), if available.</li> <li>• Go to the health center if fever lasts several days and is not relieved by aspirin, you lose consciousness, or you have severe pain, yellow eyes, severe diarrhea, or fits.</li> </ul>
<b>Nausea and vomiting</b>	<ul style="list-style-type: none"> <li>• Eat small and frequent meals.</li> <li>• Eat soups, unsweetened porridge, and fruits such as bananas.</li> <li>• Eat lightly salted and dry foods such as crackers to calm the stomach.</li> <li>• Drink herbal teas and lemon juice in hot water.</li> <li>• If available, drink ginger tea (crush ginger root in cold water, boil in water for 10 minutes, place in a covered container, strain ginger and drink the liquid).</li> <li>• Avoid spicy and fatty foods.</li> <li>• Avoid caffeine (coffee and tea) and alcohol.</li> <li>• Drink liquids such as clean, boiled or treated water.</li> </ul>	<ul style="list-style-type: none"> <li>• Avoid having an empty stomach – nausea is worse if nothing is in the stomach.</li> <li>• Avoid lying down immediately after eating. Wait at least 20 minutes to avoid vomiting.</li> <li>• Rest between meals.</li> </ul>
<b>Thrush</b>	<ul style="list-style-type: none"> <li>• Eat soft, mashed foods (e.g., carrots, scrambled eggs, mashed potatoes, bananas, soups, porridge).</li> <li>• Eat cold or room-temperature foods.</li> <li>• Avoid spicy, salty, or sticky foods, which may irritate mouth sores.</li> <li>• Avoid sugary foods, which cause yeast to grow.</li> <li>• Avoid strong citrus fruits and juices which may irritate mouth sores.</li> <li>• Avoid alcohol.</li> <li>• Drink liquids.</li> </ul>	<ul style="list-style-type: none"> <li>• Seek medical attention.</li> <li>• If available, use a spoon or cup to eat small amounts of foods.</li> <li>• Tilt your head back when eating to help you swallow.</li> <li>• Rinse your mouth with boiled, warm salt water after eating to reduce irritation and keep infected areas clean so yeast cannot grow.</li> </ul>
<b>Anaemia</b>	<ul style="list-style-type: none"> <li>• Eat more iron-rich foods such as animal products (e.g., eggs, fish, meat, liver), green leafy vegetables (e.g., collard greens, spinach), fruits and vegetables (e.g., beans, lentils, groundnuts), nuts, oil seeds, and fortified cereals.</li> <li>• Take iron supplements.</li> <li>• Sleep under an ITN.</li> </ul>	<ul style="list-style-type: none"> <li>• (Adults) If available, take one iron tablet once a day with food, preferably with a source of vitamin C such as tomatoes or orange juice to help with absorption. Drink fluids to avoid constipation.</li> </ul>
<b>Muscle wasting</b>	<ul style="list-style-type: none"> <li>• Increase the quantity of food you eat and the frequency of consumption.</li> <li>• Improve the quality and quantity of foods by eating a variety of foods.</li> </ul>	<ul style="list-style-type: none"> <li>• Eat small, frequent meals.</li> <li>• Eat soft liquid food if you have mouth sores.</li> <li>• Increase protein in your diet.</li> <li>• Use fortified foods.</li> </ul>

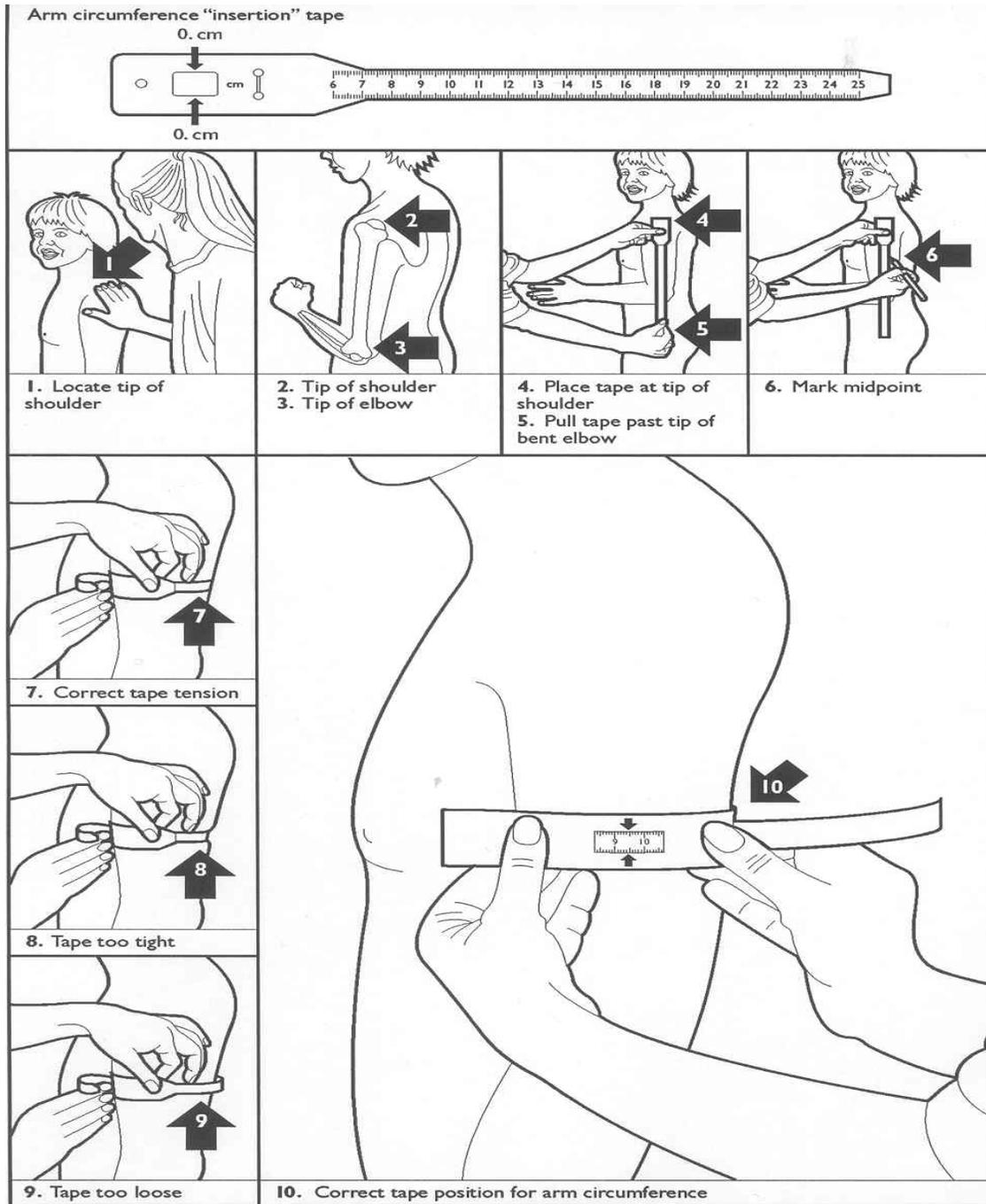
		<ul style="list-style-type: none"> <li>• Slowly introduce fat into your diet.</li> <li>• Increase your intake of starchy foods in cereals and other staples.</li> </ul>
<b>Constipation</b>	<ul style="list-style-type: none"> <li>• Eat more foods that are high in fiber (e.g., maize, whole-wheat bread, green vegetables, washed fruits with the peel remaining).</li> <li>• Drink plenty of liquids.</li> <li>• Avoid processed or refined foods.</li> </ul>	<ul style="list-style-type: none"> <li>• Avoid cleansing practices such as enemas and medications.</li> <li>• Drink plenty of fluids, including clean, boiled or treated water.</li> </ul>
<b>Bloatedness/heartburn</b>	<ul style="list-style-type: none"> <li>• Eat small, frequent meals.</li> <li>• Avoid gas-forming foods (e.g., cabbage, soda).</li> <li>• Drink fluids.</li> </ul>	<ul style="list-style-type: none"> <li>• Eat long enough before sleeping so food can digest.</li> </ul>
<b>Tuberculosis</b>	<ul style="list-style-type: none"> <li>• Eat foods high in protein, energy, iron, and vitamins.</li> </ul>	<ul style="list-style-type: none"> <li>• Seek medical attention immediately.</li> <li>• Consult medical personnel about taking food with medications.</li> <li>• If you are taking Isoniazid, take a vitamin B6 supplement to avoid deficiency.</li> </ul>
<b>Loss of taste or abnormal taste</b>	<ul style="list-style-type: none"> <li>• Use flavor enhancers (e.g., salt, spices, herbs, lemon).</li> <li>• Chew food well and move it around in your mouth.</li> </ul>	

## Annex 7. How to Measure Mid-upper Arm Circumference

MUAC is a means of measurement used to see if the child is malnourished or not.

### How to measure MUAC:

1. Keep your work at eye level. Sit down when possible. Mothers can hold very young children during this procedure. Ask the mother to remove any clothing that may cover the child's left arm.
2. Calculate the midpoint of the child's left upper arm by first locating the tip of the child's shoulder (**arrows 1 and 2**) with your fingertips. Bend the child's elbow to make the right angle (**arrow 3**). Place the tape at zero, which is indicated by two arrows, on the tip of the shoulder (**arrow 4**) and pull the tape straight down past the tip of the elbow (**arrow 5**). Read the number at the tip of the elbow to the nearest centimeter. Divide this number by 2 to estimate the midpoint. You can also bend the tape up to the middle length to estimate the midpoint. A piece of string can also be used for this purpose. Mark the midpoint with a pen on the arm (**arrow 6**).
3. Straighten the child's arm and wrap the tape around the arm at the midpoint. Make sure the numbers are right side up. Make sure the tape is flat around the skin (**arrow 7**).
4. Inspect the tension of the tape on the child's arm. Make sure the tape has the proper tension (**arrow 7**) and is not too tight or too loose (**arrows 8 and 9**). Repeat any step as necessary.
5. When the tape is in the correct position on the arm with correct tension, read and call out the measurement to the nearest 0.1cm (**arrow 10**).
6. Immediately record the measurement.



Source: How to Weigh and Measure Children: Assessing the Nutritional Status of Young Children, United Nations, 1986.

## Annex 8. How to Exclusively Breastfeed Safely



Breastfeed within one hour of delivery

### How to exclusively breastfeed safely (1)



If you decide to exclusively breastfeed, stay with that method. Giving other foods, water or liquids to your baby when you are breastfeeding is dangerous if you are HIV positive.

Exclusively breastfeed for the first 6 months. The infant takes only breastmilk and no other liquids or solids, not even water, to protect her/him from illnesses like diarrhea and pneumonia.

Breastfeed the baby on demand, day and night, for as long as the baby wants; it helps to produce enough milk



Sit comfortably to breastfeed  
Ensure correct positioning and attachment to avoid breast problems





## How to exclusively breastfeed safely (2)

If you decide to exclusively breastfeed, stay with that method. Giving other foods, water or liquids to your baby when you are breastfeeding is dangerous for your baby if you are HIV positive.

Give the baby enough time to empty one breast before switching to the other breast  
Allow the baby to come off the breast on its own



### Be careful!

Make sure that there are no open sores in your baby's mouth.  
Do not make incisions such as avulectomy or make any cuts in the baby's mouth  
In this case, seek immediate help from your health center.



If you are HIV positive and if you have a sore breast, immediately stop feeding your baby from that breast and seek advice from the health center.



# Annex 9a. Algorithm and Nutrition Care Plans for the Management of Malnutrition in PLHIV- Children

ASSESS		CRITERIA	CLASSIFY	TREATMENT/ CARE PLAN	
HISTORY	LOOK AND FEEL				
<p>Refer to records (or if needed ask to determine the following):</p> <p>1.Has the child lost weight in the past month or since the past visit</p> <p>2.Does the child have:</p> <ul style="list-style-type: none"> <li>• Cough for more than 21 days? This may be due to HIV-related chronic disease (e.g., lymphocytic interstitial pneumonia [LIP]) or to PCP, TB, pneumonia, others</li> <li>• Active TB on treatment</li> <li>• Diarrhea for 14 days or more</li> <li>• Other chronic OI or malignancy</li> <li>• Poor appetite</li> </ul>	<p>1.Those under 6 months of age look for signs of severe visible wasting: e.g.</p> <ul style="list-style-type: none"> <li>• loss of muscle bulk</li> <li>• sagging skin/buttocks</li> </ul> <p>2.Check the presence of oedema on both feet</p> <p>3.Measure the weight (kg) and height (cm)</p> <ul style="list-style-type: none"> <li>• Compute weight-for-height, for children &lt; 5 yrs.</li> <li>• Compute BMI for age for children 5 -14 yrs.</li> </ul> <p>4.Measure the mid-upper-arm circumference (MUAC)</p> <p>5.If wt/ht and MUAC are not possible, then measure weight-for-age</p> <ul style="list-style-type: none"> <li>• If weight-for-age is used, check the shape of the growth curve.</li> <li>• Or Estimate percentage change in weight since last visit.</li> </ul> <p>6.Examine/observe for <b>danger signs</b> of:</p> <ul style="list-style-type: none"> <li>• Intractable vomiting</li> <li>• High fever &gt;39°C/malaria</li> <li>• Hypothermia &lt;35°C</li> <li>• Severe anaemia (paleness, palm pallor)</li> <li>• Convulsion/fitting</li> <li>• Persistent diarrhoea</li> <li>• Bilateral oedema +++</li> <li>• Severe dehydration</li> <li>• Extensive skin lesion</li> <li>• Very week/lethargy</li> <li>• Pneumonia or active TB? Any chest in-drawing</li> </ul>	<p>Bilateral pitting <b>edema</b> (in both legs)</p> <p><b>OR</b></p> <p><b>WHZ</b> below -3 or <b>WHM</b> &lt; 70% of the WHO reference value</p> <p><b>OR</b></p> <p><b>MUAC</b></p> <p>Infants 6mo-11mo &lt;110mm                      Children 12 mo-59 mo &lt;110mm                      Children 5yr-9yr &lt;135mm                      Children 10yr-14yr &lt;160mm</p> <p><b>OR</b></p> <p><b>Visible signs</b> of severe malnutrition for under six months of age</p> <p><b>OR</b></p> <p><b>BMI for age:</b> 5-17 years &lt;-3 Z-score</p>	<p><b>Severe or moderate Malnutrition with medical complications</b></p> <ul style="list-style-type: none"> <li>• If any of the danger signs <b>OR</b></li> <li>• Infant &lt; 6 months <b>OR</b></li> <li>• Severe bilateral edema <b>OR</b></li> <li>• Poor appetite</li> </ul> <p><b>Severe Malnutrition without medical complications</b></p> <ul style="list-style-type: none"> <li>• W/H or MUAC &lt; cutoff for severe malnutrition <b>AND</b></li> <li>• None of the danger signs <b>AND</b></li> <li>• No severe bilateral edema <b>AND</b></li> <li>• &gt; 6 months of age</li> </ul>	<p>Admit or refer for inpatient care.</p> <p><b>NUTRITION CARE PLAN A (RED)</b></p>	
		<p>Ask all questions and complete all assessments with each child</p>	<p><b>WHZ</b> below -2 or <b>WHM</b> 70-80% of the WHO reference value</p> <p><b>OR</b></p> <p><b>MUAC</b></p> <p>Infants 6mo-11mo &lt;120mm                      Children 12 mo -59 mo &lt;130mm                      Children 6yr-9yr &lt;145mm                      Children 10yr-14yr &lt;180mm</p> <p><b>OR</b></p> <p><b>BMI for age:</b> 5-17 years z-score from -2 to -3</p>	<p><b>MODERATE MALNUTRITION</b></p>	<p><b>NUTRITION CARE PLAN B (YELLOW)</b></p>
			<p>Regardless of WFH, MUAC or BMI for age:</p> <p>Growth Curve Faltering</p> <p>Confirmed significant weight loss of &gt; 5% since the last visit</p>	<p><b>POOR WEIGHT GAIN</b></p>	
			<p>Regardless of W/H, MUAC or BMI for age:</p> <ul style="list-style-type: none"> <li>• Chronic Lung disease</li> <li>• TB</li> <li>• Persistent diarrhea</li> <li>• Other Chronic OI or Malignancy</li> </ul>	<p><b>Signs of SYMPTOMATIC DISEASE</b></p>	
			<p><b>Child is gaining weight</b> or maintaining a proper WFH</p> <p><b>WHZ</b> &gt; -2 or <b>WHM</b> &gt; 80% of the WHO median reference value</p> <p><b>OR</b></p> <p><b>BMI for age:</b> 5-17 years &gt;-2 z-score</p> <p>In the absence of signs of symptomatic disease and significant weight loss</p>	<p><b>GROWING WELL</b></p>	<p><b>NUTRITION CARE PLAN C (GREEN)</b></p>

## NUTRITION CARE PLAN A

### 1. Assess if the child needs to be admitted to in-patient care. \*\*\*CHECK FOR GENERAL DANGER SIGNS\*\*\*

- All severely malnourished infants under 6 months should be treated as in-patients
- All children severely malnourished with complications should be admitted for in-patient care according to the National Protocol for SAM
- Assess if the child wants to eat (i.e. **conduct an appetite test**). If the child does not eat at least the amount of RUTF shown in the table, refer to **Annex 3**, then admit and manage the client accordingly
- Assess if there are physical signs (e.g., intractable vomiting, high fever > 39°C, malaria, hypothermia < 35°C, severe anemia [paleness, severe palm pallor], pneumonia, active TB, any chest in-drawing, bilateral edema grade +++, excessive skin lesions, excessive weakness/lethargy, severe dehydration, convulsions or fitting)
- Assess if there have been any major changes in the child's circumstances (e.g., mother/caregiver died, breastfeeding has stopped, change of location)
- **Phase 1:** Give F75 only, amounts based strictly on weight (see National Protocol on Management of Severe Malnutrition).
- **Transition phase and Phase 2:** Replace F75 with F100 (70–80 ml per kg of body weight per day) and gradually introduce RUTF in small amounts until patient can take RUTF instead of F100.

### 2. Check the client for treatable conditions and exclude OIs such as TB.

- Ensure **Cotrimoxazole prophylaxis** for HIV+ children as per national protocol
- Explain to caregiver how to give medicines at home (i.e. doses, schedule); the caregiver should give the first dose of medication in front of health worker
- Treat any illnesses (e.g., for candida give nystatin [1ml x 4 for 7d] and also check mother's breast for candida and treat if indicated)
- If HIV+, **refer** for assessment to possibly begin ART, if not already started
- **If on ART, refer for assessment of clinical and immunological response**

### 3. Home management. This should be done only if the child has appetite (can eat RUTF), and the mother/caregiver's health and condition is conducive for appropriate care. Give RUTF to provide 50-100% additional energy according to the Table below.

Class of weight (kg)	RUTF Paste		OR Plumpy'Nut	
	Grams per day	Grams per week	Sachet per day	Sachet per week
3.0 – 3.4	105	750	1 ¼	8
3.5 – 4.9	130	900	1 ½	10
5.0 – 6.9	200	1400	2	15
7.0 – 9.9	260	1800	3	20
10.0 – 14.9	400	2800	4	30
15.0 – 19.9	450	3200	5	35
20.0 – 29.9	500	3500	6	40
30.0 – 39.9	650	4500	7	50

4. **If using home management**, ensure mother/caregiver understands the care plan and ask if s/he has any questions. You may need to demonstrate the use of the RUTF or other feeds to the mother/caregiver.
5. **If managed at home**, then follow up with the client in **1 week** to ensure weight gain of **at least 3-5 gm/kg/d**. Check the **mother's health (and if she needs ART)** and provide support/counseling so she can be able to care for other children in the home.
6. **Upon discharge from inpatient care**, ensure **Vitamin A supplements** and **deworming drugs** are given every 6 months if the child is under 12 months and has not been given these in the last 4 months (Vitamin A is delayed for children with edema until it subsides). Transfusion should be considered in severe anemia cases during **phase 1** and a folic acid tab (5 mg) should be given for clinical anemia.
7. **Transition to Nutrition Care Plan B** when **WFH >80% (or MUAC > 110 mm if MUAC was used) AND no edema was present for two consecutive weigh-ins** (children can usually tolerate this energy intake for **6-10 weeks**). Review and change to **plan A** if the child becomes severely malnourished again.
8. If the child is **not gaining weight, is losing weight, or edema is worsening**, assess for further investigation and treatment according to the national protocol.



## NUTRITION CARE PLAN B

1. **Check for treatable conditions.** Refer child for treatment where indicated.
2. Ensure **Cotrimoxazole prophylaxis is started for HIV+ children** as per national protocol.
3. **If HIV+ refer for ART assessment.**
4. **If on ART, refer for assessment of clinical and immunological response.** Failure to take ART correctly or to adhere at all can result in: related side-effects (e.g., vomiting, abdominal pain, diarrhoea, poor appetite, taste change); presence of an OI (e.g., TB, diarrhoea); development of the immune reconstitution syndrome; late ART-related side effects (e.g., lactic acidosis [with signs like abdominal pain, vomiting or fast breathing], lipodystrophy; inadequate food intake due to food access problems; possible early signs of treatment failure if on ART and over 6 mo of age. Refer if indicated.
5. **Check the mother's health** (+need for ART), and how she cares for the sick child and other children
6. **Nutrition counseling. Counsel on the Critical Nutrition Practices.** Ask the questions: What does the child eat and drink? Who gives the child their food and how does the child eat? Is food available at home?
7. **Meet age-specific needs and additional 20-30% food (energy) based on actual weight.** If possible, energy and nutrient needs should be met through a food-based approach. Nutrition supplements may be provided by the service/programs where available.

Additional energy needs of symptomatic HIV+ children		
Age group	20-30% Additional energy (kcal) per day	Food-based approach: Give as addition to meals and other snacks
6–11 months	180 kcal/day (in addition to 730 kcal/day)	2 large coffee cups of wheat flour porridge with oil/butter, milk and iodized salt
12–23 months	300 kcal/day (in addition to 1,250 kcal/day)	3 large coffee cups of enjera fetfet with shiro with oil/butter sauce
24–59 months	325 kcal/day (in addition to 1,500 kcal/day)	1 medium cup of beso drink and 1 average size banana
5–9 years	450 kcal/day (in addition to 1,800 kcal/day)	1 medium coffee cup of beso drink and one average size banana
10–14 years	575 kcal/day (in addition to 2,360 kcal/day)	2 large coffee cups of enjera fetfet with meat sauce

*\*For more options refer to Annex 5. Table 2 (snacks).*

8. **If child is moderately malnourished and supplementary food is available, provide supplementary food according to Table 3.** Children should graduate from food supplementation when they have received at least 2 months supplementation and WHZ > -2 for children under 5, BMI-for-age for children 5-17 years > -2 Z scores, or WHM > 80% or MUAC is greater than the cut-off for moderate malnutrition for their age group (i.e. 6mo-12mo > 120 mm, 12mo-59 > 130mm, 5-9 years > 145 mm, 10-14 years > 180 mm).

Supplementary food rations for HIV+ children		
Age group	RUTF	FBF
6–11 months	one 92 g. sachet of RUTF	50 g.
12–23 months	one 92 g. sachet of RUTF	100 g.
24–59 months	one 92 g. sachet of RUTF	100 g.
5–9 years	one 92 g. sachet of RUTF	200 g.
10–14 years	one 92 g. sachet of RUTF	200 g.

9. **Ensure the mother/caregiver understands the nutrition care plan and ask if s/he has any questions.** Counsel her on managing dietary related symptoms.
10. **Ensure adequate micronutrient intake.** Counsel to ensure diet is balanced and contains a variety of animal sourced foods, fruits and vegetables. If this is not possible, give a daily micronutrient supplement that provides 1 RDA of a wide range of vitamins and minerals. Anemic children may need supplementation. Children with diarrhoea should be given **Zinc for 14 days**.
11. **Vitamin A supplements** should be given every 6 months according to IMCI schedule. **Deworm** every 6 months if child is over 1 year of age.
12. **Review 1st visit in 2 wks.** If the child is responding to treatment, meet every **1-2 months depending** on the response. Change to **Nutrition Care Plan C** when WHZ > -2 OR WHM > 80% for children under 5 OR BMI-for-age > -2 for children over age 5-17 OR MUAC is greater than the cut-off for moderate malnutrition (see No. 9 above) AND the child has been in Plan B for at least 2 months AND there has been no weight loss in the past month AND there are no signs of symptomatic disease.

## NUTRITION CARE PLAN C

1. **Ask about general condition and if child is on any treatment including ART and TB medicine.** If the child is on ART, check that adherence counsel on management of diet related symptoms if indicated.
2. **Check the mothers health (+need for ART) and care of other children**
3. **Nutrition counseling. Counsel on the Critical Nutrition Practices.**
  - Encourage mother/caregiver that the child is growing well,
  - If breastfeeding, counsel on optimal breastfeeding practices. If on replacement feeding emphasis on proper feeding, safety and to avoid mixed feeding.
  - If a child is in complementary feeding age, promote optimum complementary feeding practice. i.e. FADUA – Frequency, Adequacy, Density, safety and hygiene, active feeding and variety.
4. Counsel to ensure child’s **age-specific energy/nutrient needs** are met and that additional 10 percent energy based on age of the child.

Age group	Additional energy (kcal) per day	Food-based approach Give as addition to meals and other snacks
6–11 months	75 kcal/day (in addition to 730 kcal/day)	1 large coffee cup of potato porridge with milk and Bu
12–23 months	125 kcal/day (in addition to 1,250 kcal/day)	1 large coffee cup of bulla porridge with milk and butter/oil
24–59 months	150 kcal/day (in addition to 1,500 kcal/day)	1 average-size mashed sweet potato
5–9 years	180 kcal/day (in addition to 1,800 kcal/day)	1 medium coffee cup of kolo
10–14 years	240 kcal/day (in addition to 2360 kcal daily need)	1 medium coffee cup of Kinche

*\*For more information, refer to Annex 5. Table 2 (snacks).*

5. **Ensure adequate micronutrient intake.** Counsel to ensure diet is varied and contains animal-source foods, fruits and vegetables. If this is not possible, give a daily micronutrient supplement that provides 1 RDA of a wide range of vitamins and minerals. Anemic children may need supplementation. Children with diarrhoea should be given zinc for 14 days.
6. Give **Vitamin A supplements** every 6 months according to the IMCI schedule. **Deworm** every 6 months if the child is over 1 year of age.
7. Ensure **Cotrimoxazole prophylaxis** is provided as per national protocol.
8. **Ensure the mother/caregiver understands the nutrition care plan and ask if s/he has any questions.**
9. **Advise the mother/caregiver of the need for periodic follow-up.**
10. **Review the child’s case in 2-3 months**, however tell the mother/caregiver to return earlier if problems arise.



## Annex 9b. Algorithm and Nutrition Care Plans for the Management of Malnutrition in PLHIV - Adult

ASSESS		CRITERIA	CLASSIFICATION	TREATMENT PLAN
HISTORY	LOOK AND FEEL			
<p>Refer to records (or if needed ask to determine the following)</p> <p>1.Has the client lost weight in the past month or since the past visit?</p> <p>2.Has the client had:</p> <ul style="list-style-type: none"> <li>• Active TB or is on treatment for it?</li> <li>• Diarrhoea for more than 14 days?</li> <li>• Other chronic OIs or malignancies? (e.g., esophageal infections)</li> <li>• Mouth soars or oral thrush?</li> </ul> <p>3.Has the client had noticeable changes in his/her body composition, specifically his/her fat distribution?</p> <ul style="list-style-type: none"> <li>• Thinning of limbs and face&gt;</li> <li>• Change in fat distribution on the limbs, breasts, stomach region, back or shoulders?</li> </ul> <p>4.Has the client experienced the following?</p> <ul style="list-style-type: none"> <li>• Nausea and/or vomiting?</li> <li>• Persistent fatigue?</li> <li>• Poor appetite?</li> </ul>	<p>1.Check for edema on both feet and sacrum. In adults, rule out other causes of symmetrical edema (e.g., pre-eclampsia, severe proteinuria [nephrotic syndrome], nephritis, acute filariasis, heart failure, wet beri- beri).</p> <p>2.Measure weight (kg) and height (cm).</p> <p>3.Compute BMI (adults)</p> <p>4.Measure MUAC (pregnant and post-partum women and/or adults who cannot stand straight).</p> <p>5.Examine for conditions that cause secondary malnutrition (see above and in "History")</p> <p>6.Examine/observe for complications and danger signs:</p> <ul style="list-style-type: none"> <li>• Severe anemia (paleness, pallor of the palms)</li> <li>• Severe dehydration</li> <li>• Active TB</li> <li>• Bilateral severe edema</li> </ul>	<p><b>Bilateral pitting edema</b></p> <p><u>Adults (non-pregnant/post-partum)</u>                      BMI &lt; 16 kg m<sup>2</sup>                      (If BMI cannot be measured, use MUAC cut-off below.)</p> <p><u>Pregnant/postpartum women</u>                      MUAC &lt; 180 mm</p>	<p><b>SEVERE/MODERATE malnutrition with complications</b></p> <p>if client has any of the danger signs or severe edema (e.g., severe dehydration, poor appetite, bilateral edema)</p> <p><b>Acute malnutrition without complications</b></p> <p>If client has BMI or MUAC less than the severe malnutrition cutoff and does not have any of the danger signs</p>	<p>Admit or refer for inpatient care.</p> <p><b>NUTRITION CARE PLAN A (RED)</b></p>
		<p><u>Adults (non-pregnant/post-partum)</u>                      BMI 16 - 16.99 Moderate                      BMI 17 - 18.49                      (If BMI cannot be measured, use MUAC cut-off below.)</p> <p><u>Pregnant/postpartum women</u>                      MUAC 180 - 210 mm</p>	<p><b>MODERATE MALNUTRITION</b></p>	<p><b>NUTRITION CARE PLAN B (YELLOW)</b></p>
		<p><b>Regardless of BMI or MUAC:</b></p> <ul style="list-style-type: none"> <li>• Confirmed unintentional weight loss of &gt; 5% since the last visit</li> <li>• Reported weight loss: e.g. loose clothing which used to fit</li> </ul>	<p><b>SIGNIFICANT WEIGHT LOSS</b></p>	
		<p><b>Regardless of BMI or MUAC:</b></p> <ul style="list-style-type: none"> <li>• Chronic lung disease</li> <li>• TB</li> <li>• Persistent diarrhoea</li> <li>• Other chronic OI or malignancy</li> </ul>	<p><b>Signs of SYMPTOMATIC DISEASE</b></p>	
		<p><u>Adults (non pregnant/post-partum)</u>                      BMI ≥ 18.5                      (If BMI not possible, use MUAC)</p> <p><u>Pregnant/post-partum women</u>                      MUAC &gt; 210 mm</p> <p>In the absence of signs of symptomatic disease and significant weight loss</p>		<p><b>NORMAL</b></p>

## NUTRITION CARE PLAN A

1. **INPATIENT: clinical and nutrition management of severely malnourished adults**
  - Check and ensure, if indicated, that treatment is given for **accompanying illnesses** (e.g., pneumonia, active TB, chronic diarrhoea, fever, nausea and/or vomiting).
  - Ensure **Cotrimoxazole prophylaxis** is provided as per the national protocol for HIV-positive clients for CD4 < 350 and WHO stage 3 and 4.
  - If there are indications the client has hypoglycemia, severe dehydration, severe anemia, or other infections or medical complications, treat or refer for treatment as per national/WHO guidelines.
  - **If not tested for HIV and/or TB, conduct or refer the client for counseling and testing immediately.** If the client is HIV-positive and not on ART, refer him/her to an ART care clinic.
  - **Phase 1 (days 1–2):** Give F75 only with amounts given based strictly on weight. The amount per kg of body weight given is much less than for children and decreases with increasing age (See National Protocol for Management of Severe Malnutrition).
  - **Transition phase 1 and Phase 2:** Replace F75 with F100 (70–80 ml per kg of body weight per day). Gradually introduce RUTF in small amounts until patient can take 3 to 4 sachets a day and give other foods to meet remaining nutritional needs, such as FBF or BP-100.
  - **Do an appetite test.** If the client will not eat (the RUTF or the FBF), possibly due to anorexia and/or vomiting, admit the client for inpatient care and feed him/her via a Naso-Gastric tube.
  - Refer patients to where they can collect RUTF and/or FBF.
2. **OUTPATIENT: nutrition management of severely malnourished adults**
  - **If the client has an appetite and his/her health condition allows for HBC,** supply enough RUTF and FBF to last for 2 weeks (enough to provide daily energy needs), and explain how to prepare them.
  - If client can tolerate it, the consumption of **home foods** should be encouraged.
  - **Daily ration should be three 92 g sachets of RUTF (500kcal/92g) and 400 g of FBF (400 kcal/100 g).** This ration is the same for pregnant and post-partum women.
  - **Counsel on the key messages:** a) the need for periodic weight monitoring; b) how to increase energy density of diets at home; c) how to manage key symptoms through diet modification; d) any possible drug-food interactions; e) sanitation and hygiene, especially making drinking water safe; f) symptom management (e.g., nausea, loss of appetite, diarrhoea, mouth sores, rash)
3. **FOLLOW-UP management:**
  - Give ferrous sulphate tablets (usually after 14 days) if the client shows clinical signs of anemia.
  - If the client is managed at home, weigh him/her **bi-weekly** to ensure adequate weight gain.
4. **Transition to Nutrition Care Plan B** when BMI  $\geq 16$  (or  $\geq 17$  if no supplementary food is available) AND client has appetite AND can eat home foods AND has some mobility.
5. **If the client is not gaining weight, has lost weight for more than 2 months, or has worsening edema, refer him/her to a medical officer immediately.**



## NUTRITION CARE PLAN B

- Clinically manage moderately malnourished adults OUTPATIENTS.**
  - **Check for treatable conditions and refer** client for treatment where indicated.
- Ensure **Cotrimoxazole prophylaxis** is provided as per the national protocol for HIV-positive clients for CD4 < 350 and WHO stage 3 and 4
  - **If the client is not on ART**, refer for ART assessment.
  - **If client is on ART and losing weight**, assess: a) the likelihood of non-adherence; b) related side-effects (e.g., vomiting, abdominal pain, diarrhoea, poor appetite, taste change); c) OIs (e.g., TB, diarrhoea); d) development of immune reconstitution syndrome; e) development of late ART-related side effects (e.g., lactic acidosis signs such as abdominal pain, vomiting, or fast breathing); f) possible early signs of treatment failure if the client is on ART and older than 6 months (do a CD4 check); g) lipodystrophy. **Refer the client as indicated.**
  - **Assess inadequate food intake** (e.g., energy density of the food, quantity of food intake, food access problems). **Support the client appropriately.**
- Nutrition management of adults:** Counsel the client to increase his/her energy intake through home foods to **consume 20–30 percent more energy** based on his/her current weight, as in the **table below**.

Additional energy needs of symptomatic PLHIV		
Age (years)	Additional (20-30%) energy (kcal) per day due to HIV	Food-based approach: Give as addition to meals and other snacks
15-17	700 kcal/day (in addition to 2,800 kcal/day)	2-3 large size coffee cups of Kinche
18+	525-600 kcal/day (in addition to 2,170-2,430 kcal/day)	3 large size coffee cups of Chechebsa
Pregnant and post-partum women	525-600 kcal/day (in addition to 2,455-2,670 kcal/day)	2 large size coffee cups of Beso firfir

*\*For more options Refer to Annex 5. Table 2 (snacks).*

- If the client is moderately malnourished, provide supplementary food according to the following specifications: one 92 g sachet of RUTF (500 kcal/sachet) and 200 g of FBF (400 kcal/100 g).** Clients should graduate from RUTF and FBF when they are no longer moderately or mildly malnourished (i.e. BMI > 18.5, for pregnant/postpartum women MUAC > 210 mm).
- Educate the client on how to **improve household food (increase energy intake and improve taste)** to achieve the extra food requirements for their disease stage.
- Provide **food supplements** according to RDA and **demonstrate** on their home use.
- Give the client a daily micronutrient supplement that provides 1 RDA of a wide range of vitamins and minerals, unless supplementary food or daily diet is already providing sufficient micronutrients. Clients who are anemic may need iron supplementation.
- Counsel on the key messages and Critical Nutrition Practices:** a) the need for periodic weight monitoring; b) how to increase the energy density of diets at home; c) how to manage **diet-related symptoms** (e.g., nausea and/or vomiting, poor appetite, diarrhoea, mouth sores, thrush); d) any possible drug-food interactions; e) sanitation and hygiene, especially making drinking water safe.
- Review the plan** with the client in a follow-up after one month. If the client is responding, review with him/her every **1-2 months depending** on the level of response.
- Change to **Nutrition Care Plan C** when BMI >18.5 for adults OR MUAC > 210mm for pregnant/postpartum women AND there is no weight loss AND there are no clinical signs of symptomatic disease.
- If the client is **not gaining weight for 3 or more months** or if s/he continues to **lose weight for 2 or more months**, you should refer the client to specialized investigation and care.

## NUTRITION CARE PLAN C

1. **Ask client whether s/he is on any treatment**, including ART and TB medicine. If the client is on ART, determine whether s/he is adhering to the treatment and managing diet-related symptoms well.
2. If the client is HIV-positive but not on ART, provide **Cotrimoxazole prophylaxis** for CD4 count < 350 and WHO stage 3 and 4.
3. **Counsel the client to eat enough food to meet increased energy and nutrient needs plus 10 percent energy**, as in the table below.

Additional energy needs of asymptomatic PLHIV		
Age (years)	Additional (10%) energy (kcal) per day due to HIV	Food-based approach: Give as addition to meals and other snacks
15-17	280 kcal/day (in addition to 2,800 kcal/day)	1 large coffee cup of Beso firfer
18+	225 kcal/day (in addition to 2,170-2,430 kcal/day)	1 large coffee cup of Kolo
Pregnant and post-partum women	225 kcal/day (in addition to 2,455-2,670 kcal/day)	2 medium coffee cups of Chechebsa

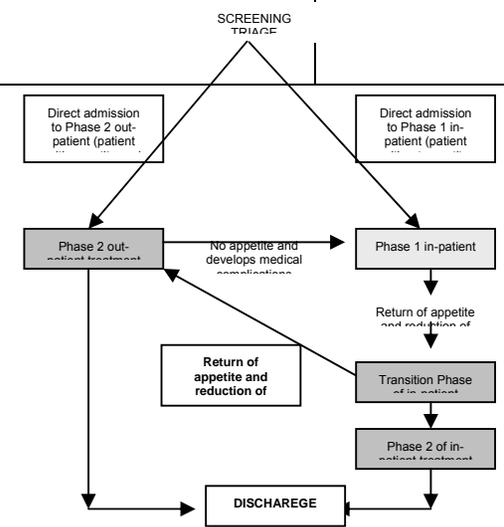
\* For more information refer to **Annex 5. Table 2 (snacks)**.

4. **Counsel client to eat a variety of foods served.** If this is not possible, give the client a daily micronutrient supplement that provides 1 RDA of a wide range of vitamins and minerals. Clients who are anemic may need iron supplementation.
5. **Advise the client and caregiver of the need for periodic weighing.**
6. **Counsel on key messages and Critical Nutrition Practices:** a) how to increase energy density of diets at home; b) how to manage diet-related symptoms (e.g., nausea and/or vomiting, poor appetite, diarrhea, mouth sores, thrush); c) any possible drug-food interactions; d) sanitation and hygiene, especially making drinking water safe; e) having physical exercise to strengthen muscles and improve appetite.
7. **Review the client's progress in 2–3 months** (or earlier if problems arise).

## Annex 10. National Guidelines for the Management of Severe Acute Malnutrition

These guidelines apply to children age 6 months to 18 years old. For management of SAM in infants under 6 months old or weighing < 3 kg, refer to the National Protocol for Management of Severe Acute Malnutrition, FMOH, March 2007.

ADMISSION CRITERIA	Age 6 months – 18 years		> 18 years			
	<ul style="list-style-type: none"> <li>Weight/height &lt; 70% or</li> <li>Presence of bilateral oedema or MUAC &lt; 110 cm when height &gt; 65 cm</li> </ul>		<ul style="list-style-type: none"> <li>MUAC &lt; 180 mm</li> <li>Presence of bilateral oedema unless clear cut other cause</li> </ul>			
PROTOCOL	PHASE 1	TRANSITION PHASE	PHASE 2			
THERAPEUTIC DIET	F75	F100 or RUTF	F100 or FUTF			
QUANTITY	Refer to national protocol		Refer to national protocol			
SURVEILLANCE	Every day	Every day	In-patient/Day care	Out-patient/OTP		
	<ul style="list-style-type: none"> <li>Weight and oedema</li> <li>Height</li> <li>Body temperature</li> <li>MUAC</li> <li>Appetite test</li> <li>Standard clinical signs</li> </ul>	<ul style="list-style-type: none"> <li>Every 21 days</li> <li>Every day</li> <li>Every week</li> <li>n/a</li> <li>Every day</li> </ul>	<ul style="list-style-type: none"> <li>Every 21 days</li> <li>Every day</li> <li>Every week</li> <li>Judge from intake chart</li> <li>Every day</li> </ul>	<ul style="list-style-type: none"> <li>3 times per week</li> <li>Every 21 days</li> <li>Every day</li> <li>Every week</li> <li>n/a</li> <li>Every day</li> </ul>	<ul style="list-style-type: none"> <li>Every week</li> <li>Every 21 day</li> <li>Every week</li> <li>Every week</li> <li>Every week</li> <li>Every week</li> </ul>	
CRITERIA FOR PROGRESSING TO NEXT PHASE	<p><b>From Phase 1 to Transition:</b></p> <ul style="list-style-type: none"> <li>Return of appetite and</li> <li>Beginning to lose oedema</li> </ul> <p><b>Children with gross oedema (+++) should wait in Phase 1 at least until their oedema reduces to moderate (++) or mild (+).</b></p>	<p><b>From Transition to Phase 2:</b></p> <ul style="list-style-type: none"> <li>Good appetite</li> <li>Marasmic patients spend at least 2 days in Transition</li> <li>Oedematous patients have completely lost oedema</li> </ul>	<p><b>Discharge criteria:</b></p> <p><b>Age 6 months to 18 years (option 1)</b></p> <ul style="list-style-type: none"> <li>Weight/height <math>\geq</math> 85% on at least one occasion (one weighing) and no oedema for 14 days</li> </ul> <p><b>6 months – 18 years (option 2)</b></p> <ul style="list-style-type: none"> <li>15% weight gain and no oedema in last 14 days</li> </ul> <p><b>&gt; 18 years</b></p> <ul style="list-style-type: none"> <li>15% weight gain and no oedema in last 14 days</li> </ul>			
CRITERIA FOR MOVING BACK TO PHASE 1	<ul style="list-style-type: none"> <li>If patient gains weight more rapidly than 10g/kg/day in Transition</li> <li>If there is increasing oedema</li> <li>If child without oedema develops oedemas</li> <li>If rapid increase in size of liver</li> <li>If any signs of fluid overload develop</li> <li>If tense abdominal distension develops</li> <li>If patient gets significant refeeding diarrhoea so that weight loss occurs</li> <li>If complication arises that necessitates intravenous infusion</li> <li>If Naso-Gastric tube is needed</li> </ul>		<b>Systematic Treatment</b>		<b>Direct admission in Phase 1 (in-patient)</b>	<b>Direct admission in Phase 2 (out-patient)</b>
			Vitamin A	1 dose at admission (conditional – see protocol) and 1 dose on discharge		1 dose on 4 <sup>th</sup> week (4 <sup>th</sup> visit)
			Folic acid	1 dose at admission if sign of anaemia		1 dose at admission if sign of anaemia
			Amoxicillin	Every day in Phase 1 + 4 days in Transition According to national protocol		1 dose at admission + 7 days treatment at home
			Malaria	According to national protocol		According to national protocol
			Measles (>9 months)	1 vaccine at admission if no card and 1 vaccine at discharge		1 vaccine on 4 <sup>th</sup> week (4 <sup>th</sup> visit)
			Iron	Add to F100 in Phase 2		No
			Albendazole	1 dose on first day of Phase 2		1 dose on 2 <sup>nd</sup> week (2 <sup>nd</sup> visit)



## Annex 11. Food-Antiretroviral Drug Interactions and Common Side Effects

Drug name	Food recommendation	Avoid	Possible side-effects
<b>Reverse transcriptase inhibitors</b>			
<b>Efavirenz (EFZ)</b>	- Can be taken without regard to food - Do not take with a high-fat meal (it increases absorption to potentially harmful levels)	- Alcohol	- Elevated blood cholesterol and triglyceride levels - Rash, dizziness, drowsiness, anorexia, nausea, vomiting, diarrhoea, mouth sores, fatigue, sleep disturbances, vivid dreams, dyspepsia, abdominal pain, flatulence
<b>Nevirapine (NVP)</b>	- Can be taken without regard to food		- Nausea, vomiting, rash, fever, headache, fatigue, stomatitis, abdominal pain, drowsiness, high hepatotoxicity, skin rash
<b>Abacavir (ABC)</b>	- Can be taken without regard to food	- Alcohol	- Nausea, vomiting, fever, allergic reactions, anorexia, diarrhoea, anaemia, rash, cough, headache, dizziness, hypotension, pancreatitis
<b>Didanosine (ddI)</b>	-Take on an empty stomach (e.g., 30 minutes before eating, 2 hours after eating) -Take with water only (food reduces its absorption)	- Alcohol - Grapefruit juice - Antacids containing aluminum or magnesium	- Nausea, headache, dizziness, diarrhoea, insomnia, anorexia, vomiting, dry mouth, loss of taste, constipation, anaemia, stomatitis, fever, pancreatitis
<b>Lamivudine (3TC)</b>	- Can be taken without regard to food	- Alcohol	- Nausea, headache, dizziness, diarrhoea, insomnia, vomiting, anaemia, stomatitis, fever, pancreatitis, muscle pain, nasal symptoms, abdominal pain, peripheral neuropathy
<b>Stavudine (d4T)</b>	- Can be taken without regard to food	- Limit the consumption of alcohol	- Nausea, headache, dizziness, diarrhoea, insomnia, anorexia, anaemia, stomatitis, fever, pancreatitis, chills and fever, peripheral neuropathy, bone marrow suppression - May increase the risk of lipodystrophy
<b>Tenofovir (TDF)</b>	- Take with a meal	- Alcohol	- Abdominal pain, headache, fatigue, dizziness

<b>Drug name</b>	<b>Food recommendation</b>	<b>Avoid</b>	<b>Possible side-effects</b>
<b>Zidovudine (ZDV/AZT)</b>	<ul style="list-style-type: none"> <li>- Take without food, but if it causes nausea or stomach problems, take with a low fat meal</li> <li>- May require zinc and copper supplementation</li> </ul>	- Alcohol	<ul style="list-style-type: none"> <li>- Anorexia, anaemia, nausea, vomiting, headache, bone marrow suppression, fatigue, constipation, mouth sores, dyspepsia, fever, dizziness, dyspnoea, insomnia, muscle pain, rash</li> </ul>
<b>Protease inhibitors</b>			
<b>Indinavir (IDV)</b>	<ul style="list-style-type: none"> <li>- Take on an empty stomach (e.g., 1 hour before eating, 2 hours after eating) or with a light non-fat meal.</li> <li>- Take with plenty of water to avoid kidney problems – at least 1.5 liters of fluids daily to prevent kidney stones.</li> </ul>	- Grapefruit	<ul style="list-style-type: none"> <li>- Nausea, headache, dizziness, diarrhoea, insomnia, vomiting, ascites, stomatitis, fever, pancreatitis, muscle pain, nasal symptoms, abdominal pain, regurgitation</li> <li>- May increase the risk of lipodystrophy</li> </ul>
<b>Lopinavir (LPV)</b>	<ul style="list-style-type: none"> <li>- Can be taken without regard to food</li> <li>- May be taken with a high-fat meal for better absorption</li> </ul>		<ul style="list-style-type: none"> <li>- Abdominal pain, diarrhoea, headache, weakness, nausea, rash, change in taste, anorexia, high blood sugar</li> <li>- May increase the risk of lipodystrophy</li> </ul>
<b>Nelfinavir (NFV)</b>	<ul style="list-style-type: none"> <li>- Take with a meal or light snack</li> <li>- To increase absorption, take with a meal containing less than 15g fat.</li> </ul>		<ul style="list-style-type: none"> <li>- Diarrhoea, flatulence, nausea, abdominal pain, rash</li> <li>- May increase the risk of lipodystrophy</li> </ul>
<b>Ritonavir (RTV)</b>	<ul style="list-style-type: none"> <li>- Take within 2 hours after a full meal with high calories and fat for better absorption.</li> </ul>		<ul style="list-style-type: none"> <li>- Nausea, headache, dizziness, diarrhoea, insomnia, anorexia, vomiting, weakness, insomnia, diabetes, fever, numbness around the mouth</li> <li>- May increase risk of lipodystrophy, pancreatitis, and hepatitis</li> </ul>
<b>Saquinavir (SQV)</b>	<ul style="list-style-type: none"> <li>- Take with a meal or light snack</li> <li>- Take within 2 hours of a high-fat and high-calcium meal</li> </ul>	- Garlic supplements	<ul style="list-style-type: none"> <li>- Mouth ulceration, taste changes, nausea, vomiting, abdominal pain, diarrhoea, constipation, flatulence, rash, weakness, headache, insomnia, hepatic impairment</li> <li>- May increase the risk of lipodystrophy</li> </ul>



### How to use the meal planner:

1. Under the *date* column, write the day, month, and year...
2. In the *medication* column, write any drugs you are taking for this period and day.
3. In the *special instructions* column, write reminders of what to eat with the medicine.
4. In the *symptoms* column, write any symptoms you may suffer from on that day.
5. The next section is broken into six parts: *morning*, *mid-morning*, *mid-day*, *mid-afternoon*, *evening*, and *night*. Write the exact time you expect to eat. Insert times that match your lifestyle. Then list or draw foods you will eat throughout the day. .
6. Repeat this procedure for every day of the week. This can be done early in the morning for the same day or late in the evening the next day.

## Annex 13. Monitoring and Evaluation Indicators

Most of the indicators in the table below can be disaggregated by type of program, intervention, or service, if that information is useful.

<b>Incorporation and application of the Guideline and recommendations into programs, services, and other delivery points</b>	<ul style="list-style-type: none"> <li>• Percentage/number of programs and services that accurately include key information and recommendations from the Guidelines<sup>2</sup></li> <li>• Percentage/number of counselors, service providers, etc., trained in information and recommendations from the Guidelines.</li> <li>• Percentage/number of HIV counseling and testing programs that include nutrition care and support</li> <li>• Percentage/number of private sector companies with nutrition care and support activities</li> <li>• Percentage/number of HBC programs that include nutrition care and support</li> <li>• Percentage/number of hospitals offering nutrition care and support</li> <li>• Percentage of key implementers (e.g., counselors) who know 3 key recommendations from the Guidelines<sup>3</sup></li> <li>• Approximate number of beneficiaries receiving inputs from programs and services that incorporate recommendations from the Guidelines</li> <li>• Percentage of beneficiaries (e.g., PLHIV, service providers) who receive the Guidelines who know 3 key recommendations<sup>4</sup></li> <li>• Percentage of counselors scoring higher than 75 percent on a nutrition counseling checklist<sup>5</sup></li> </ul>
<b>Behavior change by PLHIV</b>	<ul style="list-style-type: none"> <li>• Frequency of eating</li> <li>• Dietary diversity (e.g., the number of different types of foods consumed)</li> <li>• Protein intake</li> <li>• Energy intake</li> <li>• Practice of recommended dietary responses to symptoms (e.g., nausea, diarrhoea, thrush)</li> <li>• Timing of meals to manage food-drug interactions</li> </ul>
<b>Impact on health, nutrition, and well-being of PLHIV<sup>6</sup></b>	<ul style="list-style-type: none"> <li>• Weight or weight-for-age (WFA)</li> <li>• BMI</li> <li>• Physical activity</li> <li>• Ability to perform basic work activities</li> <li>• Frequency and severity of OIs</li> <li>• Frequency and severity of symptoms</li> <li>• Ability to eat</li> </ul>

<sup>2</sup> This can be measured by identifying a few key recommendations from the guidelines and finding out how many programs/services include them. To avoid having to measure all programs, a random sample of institutions receiving the guidelines could be used.

<sup>3</sup> One way to measure this is to identify three key recommendations or points of information and check the knowledge of a sample of implementers.

<sup>4</sup> This, too, could be measured by identifying key recommendations and checking the knowledge of a sample of beneficiaries.

<sup>5</sup> This may involve a counsellor checklist to assess communication of nutrition information.

<sup>6</sup> While these are all indicators that nutrition care and support is expected to improve, using them to evaluate the impact of nutrition interventions can be problematic because a) many confounding factors can affect these indicators more strongly than nutrition does, and b) the long-term health and nutrition status of PLHIV often decline, and nutrition interventions may just reduce the severity of the decline; therefore, additional tools may be needed to measure this level of impact.

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