

**Ethiopian Guide to Clinical
Nutrition Care
for Children and Adults Living
with HIV**

TRAINER'S MANUAL

**A three-day Training Course
for Clinical Care Providers**

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FOOD AND
NUTRITION
TECHNICAL
ASSISTANCE



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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired immune deficiency syndrome
ART	Antiretroviral therapy
BMI	Body mass index
CNP	Critical Nutrition Practice
CTC	Community-based Therapeutic Care
FADUA	Frequency, adequacy, density, utilization and active feeding
FBF	Fortified Blended Food
FBP	Food by prescription
FHAPCO	Federal HIV and AIDS Prevention and Control Office
HIV	Human immunodeficiency virus
IMNCI	Integrated Management of Neonatal and Childhood Illnesses
MOH	Ministry of Health
MUAC	Mid-upper arm circumference
NCP	Nutrition care plan
OI	Opportunistic infection
OVC	Orphans and vulnerable children
PLHIV	People living with HIV
RUTF	Ready-to-use therapeutic food
USAID	U.S. Agency for International Development
UNICEF	United Nations Children's Fund
VIPP	Visualization in program planning
WHO	World Health Organization

FOREWORD

The HIV care and support program emphasizes nutrition as an important component contributing to the effectiveness and improved quality of clinical care provided to people living with HIV. This clinical nutrition guide has been prepared to complement and upgrade existing nutrition services provided by health services.

This clinical nutrition guide aims at reinforcing skills and knowledge of health care providers designated to provide nutrition services in conjunction with other clinical services for PLHIV. It uses a simplified tool to assist assessment, classification and management of the nutrition need of PLHIV based on the magnitude of their nutrition problems.

It is the expectation of the Federal Ministry of Health that each care provider will be oriented and benefiting from this guide as a way of improving the clinical nutrition care services.

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ACKNOWLEDGEMENTS

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This training manual is a product of feedback from partners working in the area of nutrition and HIV. Gratitude is expressed to all who have contributed their recommendations. Special thanks go to staff from the Ministry of Health for their technical input, participation, and leadership support throughout the review process.

In particular, the support of the Nutrition and HIV/AIDS Technical Working Group has created a favourable environment for the collaborative effort which led to the review of this manual.

INTRODUCTION

This training manual is intended to equip health care providers with skills to provide clinical nutrition care for people living with HIV (PLHIV). The manual consists of tools and methodologies that trainers can use to train health care providers to counsel HIV-positive clients on critical nutrition practices and services. The training is based on the principles of Integrated Management of Neonatal and Childhood Illnesses (IMNCI).

Objectives of the Training

1. Orient health care providers in assessing, counselling using the algorithm for care and management of malnutrition for PLHIV in Ethiopia.
2. Reinforce the knowledge of health care providers on the critical nutrition practices for PLHIV to improve the quality of nutrition care and counselling.
3. Reinforce health care providers' negotiation techniques to improve PLHIV nutrition practices.

Target Audience

This manual is intended for trainers of health care providers who provide care to PLHIV. The manual is intended for use during in-service training, but trainers can also integrate it into pre-service courses as deemed appropriate.

Trainers

The course requires three to four facilitators per each class of 35 to 40 participants. One of the facilitators should be the course director. The facilitators will support participants in demonstrations, group discussions, and role plays to strengthen skills. Facilitators should have expertise in nutrition programming, counselling skills, experience in adult training, basic knowledge of HIV and AIDS, and familiarity with the Ethiopian national guidelines on nutrition and HIV/AIDS.

Description of the Training

The manual uses an adaptation of the WHO clinical algorithms to describe links between nutrition care and other clinical care and support services for PLHIV. These algorithms will be integrated into and referenced in existing care delivery standards to ensure harmonization and complementarity.

Note: The use of the term “client” in this manual refers to either a PLHIV or a caregiver.

Clinical nutrition care is presented in charts with sequences of steps. The charts use the IMNCI format: Assessment, Classification, and Nutrition Care Plans. The Assessment step focuses on taking clients' history and assessing their nutritional status. The Classification step consists of determining the severity of malnutrition based on the assessment information. Nutrition care plans are descriptions and schedules of services or support to be provided to clients.

Clinical Nutrition Guide for PLHIV: Timetable for three-days Training(should be rearranged for three days)

Session	Topic	Duration	
Day 1			
Registration			8:30 –9:00
Session 1	Introductions, Expectations, Objectives, Admin issue, Pre-test	1hr 15 min	9:00 – 10:15
Tea Break			10:15 – 10:30
Session 2	Introduction t basics of clinical nutrition	1hr and 30 min	10:30 – 12.00
Session 3	Nutrition and HIV Interactions	50 min	12:00 – 12:50
Lunch			12:50 pm – 1:50
Session 4	Assessment of Nutritional Status	2hrs	1:50 pm – 3: 50 pm
Tea break			3: 50 pm – 4:10 pm
Session 4	Assessment of Nutritional Status	1hr and 10 min	4:10pm – 5: 20pm
Daily Evaluation			5:20 – 5:25
Day 2			
Recap day 1			8:30 – 9:00
Session 4	Classification of Nutritional Status	1hr and 30 min	9:00 – 10:30
Tea Break			10:30 – 10:50
Session 4	Classification of Nutritional Status	1hr and 30 min	10:50 – 12:20
Lunch			12:20 – 1:20
Session 4	Nutrition Interventions	1hr and 55min	1: 20 – 3:15
Tea Break			3:15 – 3:35
Session 4	Nutrition Care plans A and B - Adults	1hr 40 min	3:35 – 5:.15
Daily Evaluation		5 min	5:15 – 5:20
Day 3			
Recap day 2			8:30 – 9:00
Session 4	Nutritional care plan C - Adults	40min	9.00 - 9:40
Session 4	Nutritional Care Plan A – Children	1hr	9:40 – 10:40
Tea break			10:40 – 11:00
Session 4	Nutritional Care plan B and C – Children	1 hr and 20 min	11:00 – 12:20
Lunch			

			12:20 – 1:20
Session 4	Nutrition care for PLHIV on ARV	40 min	1:20 – 2:00
Session 5	Linkages to community support Program	1hr	2:00- 3:00
Session 6	Logistics	40 min	3:00 – 3:40
Tea break			3: 40 –4:00
Session 7	Monitoring and Evaluation	1hr and 40 min	4:00 – 5: 40
Daily Evaluation	Daily evaluation and introduction to the field work	5 Min	5:40 – 5:45
Day 4			
Session 4	Field practice	2hrs	8:30 – 10:30
Tea break			10:30 – 11:00
Session 4	Feedback from field practice	40 min	11:00 – 11:40
Lunch			12:00 – 1:00
Session 8	Daily evaluation; post-test; certificate and closing	1hr	1: 00 – 2:00

Module A: Introduction and Basics of Nutrition

SESSION 1: INTRODUCTIONS, EXPECTATIONS AND OBJECTIVES

Estimated Duration: 1 hour and 10 minutes

Purpose

In this session, participants are introduced to each other and the objectives of the training.

Learning Objectives

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

- Communicate freely with each other and with trainers.
- Explain the purpose and objectives of the training.
- Relate their expectations of the training to the objectives.

Overview

Activity 1.1 Introduction and Expectation (**30** minutes)

Activity 1.2 Ground rules and Admin issues (**5** minutes)

Activity 1.3 Pre-test (**30** minutes))

Materials

- Flip charts and markers
- Masking tape
- Matching pair of pictures showing how to lead a healthy life with HIV/AIDS or existing counselling card on Nutrition and HIV/AIDS for each participant
- Course objectives written on a flip chart
- Numbers from 1 to 35 on pieces of paper in a container

- Folder for each participant
- **Handout 1: Pre-test for Clinical Nutrition Care for PLHIV Course**

Activity 1.1 Introductions, Expectations and objectives (35 minutes)**Training Methods: Game and Discussion**

- Give each participant a half of a nutrition and HIV picture.
- Ask participants to find the person with the other half of the picture and introduce themselves by name, place of work, responsibility and expectations from the training, and discuss something of human interest (e.g., favourite food, hobbies, likes, dislikes).
- Write participants' expectations on a flip chart.
- Present the objectives of the training on a flip chart
- Relate the objectives of the training with participants' expectations above. Post them on a wall where they can be referred to throughout the course.
- Explain if there are expectation that may not be met with this training and indicate references
- Expectations and objectives remain in view during training course

Activity 1.2 Ground rules and Admin issues (5 Minutes)**Training Methods: Discussion**

- Explain to participants' the need to follow certain rules during the duration of the training
- Present the course schedule (timetable) and give participants opportunity to discuss and suggest modifications.
- Ask participant to set ground rules, write it on a flip chart and post it on a wall visible to all.
- Inform participants what expenses are covered by the training organizers and whom to contact.

Activity 1.3 Pre-test (30 minutes)

Training Methods: Test

- Ask each participant to draw a number from the container. Explain that this will be his or her code number for the rest of the course.
- Distribute copies of the pre-test to the participants and ask them to write their code numbers on the top right-hand corner of the first page.
- Ask participants to complete the pre-tests individually. Give them a time limit of 30 minutes.
- Correct all the tests as soon as possible on the same day, using the Pre-test answer key.
- Identify topics that caused disagreement or confusion and need to be emphasized during the next three days.

Information for Facilitators

Pre-test Answer Key**Pre and Post-test in Clinical Nutrition Care for Children and Adults with HIV****Direction:** Circle one correct answer.**Participant's Code:**

1. Using one of the following communication skills **may not be always necessary** during our interaction with clients;
 - a. Sitting at the same level
 - b. Looking in the eyes
 - c. Taking time to listen
 - d. Touching the client
 - e. Avoiding barriers
2. One of the followings **is not true** about verbal communications
 - a. Closed ended questions are important to get quick answers and solve client's problem
 - b. Open ended questions allow the client to express his feelings
 - c. One should pay attention to what the client talks only
 - d. Gestures like nodding of the head is important in communicating with our clients
 - e. "a" and "c" are not true
3. One of the followings **is true** about counseling
 - a. Is always a one-on-one session
 - b. Counseling is all about teaching and giving advice to the client
 - c. Focuses on behavioral change
 - d. Addresses only the clients role in behavior change
 - e. Clients are told what to do
4. The followings **are true** about HIV and nutrition **except**,
 - a. All HIV infected individuals are at risk of weight loss and malnutrition
 - b. HIV increases the bodies energy need and therefore patients should eat more frequently than uninfected individuals
 - c. HIV infected individuals need high amount of proteins and vitamins
 - d. Eating different kinds of foods ensures getting a balanced diet
 - e. Mal-absorption may be a cause for malnutrition
5. One of the following **is false** about the impacts of malnutrition on HIV

- a. Decreases CD4 count
 - b. Increases viral load
 - c. Impairs response to ART
 - d. Increases mother to child transmission of HIV in pregnant women
 - e. Malnutrition does not predispose to opportunistic infections
6. **Critical Nutrition Practices** for PLHIV include the followings **except**:
- a. Regular nutritional assessment
 - b. Drinking plenty of clean and safe water
 - c. Doing regular physical exercise
 - d. Using herbal medications to treat HIV related symptoms
 - e. Eating variety of foods
7. The following messages help PLHIV to increase their energy intake and meet micronutrient requirements **except**,
- a. Eat locally available and affordable foods
 - b. Eat five times a day (three meals and two snacks-“mekses”)
 - c. Eat adequate amount of food, at least two cups of food (70ml) at each meal
 - d. Eat food from the different food types at each meal including fruits and vegetables
 - e. Eat high protein diet like meat, eggs and chicken at each meal
8. Dietary management of diarrhea include,
- a. Drinking lots of fluid (soups, boiled water, tea)
 - b. Eating foods rich in soluble fiber (banana, peas and lentils)
 - c. Consuming fermented foods like porridges and yoghurt
 - d. Consuming easily digestible rice, bread, potato, porridge, maize
 - e. All
9. Patients with nausea and vomiting should
- a. Eat small and frequent meals
 - b. Eat salty and dry foods to calm the stomach
 - c. Avoid spicy and fatty foods
 - d. Avoid caffeine (tea/coffee) and alcohol
 - e. All of the above
10. Muscle wasting in PLHIV can be prevented by all of the following **except**,
- a. regular weight bearing exercise
 - b. consuming adequate amount of food
 - c. eating variety of foods
 - d. eating excess amount of protein
 - e. increasing frequency and density of meals
11. The following anthropometric indicators are used to assess nutritional status in children less than 5 years **except**,
- a. Weight for height (W/H)- Z-Score
 - b. Mid-Upper Arm Circumference (MUAC)
 - c. BMI (Body Mass Index) for age
 - d. Weight-for-height - percentage
 - e. Weight for age
12. Nutritional status of pregnant women is **best** assessed by
- a. BMI
 - b. W/H- Z score

- c. MUAC
 - d. “a” and “c”
 - e. All
13. One of the following anthropometric criteria is true about a 4 year old child classified as having severe malnutrition,
- a. BMI for age less than -3 standard deviation (SD)
 - b. W/H Z-Score < -3 SD
 - c. MUAC between 12.5 – 13.5CM
 - d. W/H percentage between 70 and 80% of the median
 - e. None
14. One of the following anthropometric criteria is true about a pregnant woman classified as having severe malnutrition;
- a. BMI of 19
 - b. MUAC of less than 18 CM
 - c. MUAC of 22 CM
 - d. BMI of 18
 - e. None of the above
15. An adult with a BMI of less than 16 will be classified as having
- a. Severe malnutrition
 - b. Moderate malnutrition
 - c. Mild malnutrition
 - d. Normal
 - e. None
16. One of the following points is important when measuring the weight of a child
- a. the pointer should indicate at “Zero”
 - b. Cloths should be kept to the minimum
 - c. Ensure using an appropriate scale
 - d. Record the weight to the nearest 0.1kg immediately after weighing
 - e. All are important
17. One of the following points is important when measuring height
- a. Shoes must be removed always
 - b. The heels, buttocks and shoulder blades should touch the wall
 - c. Caps should be removed
 - d. Hair should be gently pressed down with the rules
 - e. All of the above
18. Clinical signs of severe wasting include the followings **except**,
- a. Loss of subcutaneous fat
 - b. Loss of muscle bulk around the shoulders, arms and buttocks
 - c. Sagging skin
 - d. Small hips compared to chest and abdomen
 - e. Small abdomen compared to the hips
19. According to the **National Algorithm for the Management of Malnutrition in PLHIV**, clients eligible for Nutrition Care Plan A have one of the following classifications,
- a. Severe malnutrition with complication
 - b. Severe malnutrition without complication
 - c. Moderate malnutrition with complications
 - d. All of the above

- e. “a” and “c” only
20. According to the **National Algorithm for the Management of Malnutrition in PLHIV**, clients eligible for Nutrition Care Plan B have the following classifications,
- Moderate malnutrition without complication
 - Signs of symptomatic disease
 - Significant weight loss for adults
 - Poor weight gain for children
 - All of the above
21. One of the followings is **true** about “**Appetite Test**” **except**
- It is conducted to decide whether admission is needed or not
 - If the patient fails the test it should be repeated the next day to decide admission
 - It should be conducted in a quiet place
 - The test may take one hour
 - Appetite test should be done for adults also
22. The followings **are true** about the management of severe malnutrition in children > 6 months of age **except**,
- Patients with severe malnutrition without complication and good appetite can be managed as an outpatient
 - F100 is used during phase 1 management
 - F75 is used during phase 1 management
 - Those with poor appetite should be managed as an inpatient
 - Ready-to- use- therapeutic food (RUTF) is introduced during the transition phase
23. The daily caloric requirement for healthy individuals above the age of 18 years is
- 1000 to 1500 Kcal
 - 2170 to 2430 Kcal
 - 3000 – 4000 Kcal
 - 60 -80 Kcal
 - None
24. The average energy values in Kcal of 100grams of “**Teff**”, “**Yabesha dinich**” and **raw beef meat** is **correctly expressed** in the following sequences;
- 500, 200, 300
 - 0, 100, 300
 - 50, 75, 100
 - 350, 100, 100
 - 100, 100, 350
25. The energy density of food can be increased by adding
- Butter
 - Oil
 - Sugar
 - all
 - None

Activity 1.3 Objectives of Course (5 minutes)

Training Methods: Presentation and Discussion

- Present the course objectives on a flip chart. Compare them with the participants' expectations and the outcome of the pre-test (e.g., topics participants need more practice and skill in counselling).
- The course schedule (timetable) is presented and participants are given opportunity to discuss and suggest modifications.
- Expectations and objectives remain in view during training course.

Activity 1.4 Discuss Administrative and Housekeeping Issues (5 minutes).

SESSION 2: INTRODUCTION TO BASICS OF CLINICAL NUTRITION

SESSION 2.1 BASICS OF CLINICAL NUTRITION

Estimated duration: 50 minutes

Purpose

In this session, participants will review the basics of nutrition to inform the nutrition education and counselling they will conduct with PLHIV.

Learning Objectives

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

- Define the terms food, nutrition and calorie
- Discuss what macronutrients and micronutrients are and their importance
- Explain the average daily calorie and common micronutrient needs by age and physiological conditions
- Explain the importance of dietary diversity and its role in promoting good health

Overview

Activity 2.1.1: Discussion on the definition of food, nutrition and calorie (**10** minutes)

Activity 2.1.2: Discussion on the definitions of macronutrients and micronutrients, examples and their importance (**10** minutes)

Activity 2.1.3: Review of the average daily calorie and common micronutrient needs by age and physiological condition (**15** minutes)

Activity 2.1.4: Explanation on the importance of dietary diversity and its role in promoting good health (**15** minutes)

Materials

- Flip charts and markers
- Masking tape
- Session objectives written on a flip chart
- Summary points on each activity

Detailed Activities

Activity 2.1.1 Definition of food, nutrition, nutrient and calorie (10 minutes)**Training Methodology- Plenary discussion and summary**

- On a flip chart write the terms food, nutrition, nutrients and calorie
- Ask participants what they understand by these terms, (One facilitator writes responses on a flipchart.)
- Explain what these words mean using the definition written on a flip chart
- Answer questions that may arise from the participants using information provided below

Information for Facilitators

Food is anything that provides the body with nutrients. In addition to its most critical biological importance to the body, food also has cultural and religious values.

Nutrition is the body's process of taking in and digesting food, storing in appropriate parts of the body and utilization to keep the body healthy and grow.

Nutrients are chemical substances in food that can be metabolized to provide energy used for growth, reproduction, immunity, breathing, work, and health.; They include macronutrients and micronutrients.

In nutrition, Calorie is a measure used to express Food energy, which is the amount of energy obtained from food that is available through cellular respiration. Each gram of food is associated with a particular amount of energy. Fat has the highest amount of energy per gram, 9 Calories (kcalories), Proteins and Carbohydrates provide 4 Calories (kcalories) per gram.

Activity 2.1.2: Discussion on the definitions of macronutrients and micronutrients, examples and their importance (10 minutes)

Training Method: Plenary discussion and summary

- Write the terms “Macronutrients” and “Micronutrients”
- In plenary ask participants the definitions of the terms- Macronutrients and micronutrients. Write their response on a flip chart.
- Summarize their definitions using the information provided below
- Again ask what happens to the body when there is inadequate consumption of micronutrients and macronutrients.
- Summarise the discussion by explaining the information given below on a flip chart

Information for Facilitator

Macronutrients = are nutrients that are needed by the body in large amount and which provide energy. These are carbohydrates, proteins, and fats

Micronutrients are nutrients that the body needs only in small amounts; these substances enable the body to produce enzymes, hormones and other substances essential for proper growth and development. These are dietary minerals and vitamins. Though needed in a very small amount the consequences of their absence are severe. Iodine, vitamin A and iron are most important in global public health terms and in Ethiopia; their lack represents a major threat to the health and development of populations the world over, particularly children and pregnant women in low-income countries.

Importance- what happens to the body when there is deficiency?

The insufficient, excessive or imbalanced consumption of micronutrients and macronutrients leads to a state of malnutrition resulting in a number of nutrition disorders..

Undernutrition = Inadequate amount, combination, and timeliness of energy or nutrients to carry out needed physiological functions. Under nutrition impairs growth, leads to wasting and stunting and ultimately death due to infectious and metabolic complication. Malnutrition also affects intelligence (IQ) and productivity.

Overnutrition = More energy and nutrients than the body needs over time

In the developing world, because of the high prevalence of under nutrition malnutrition often denotes under nutrition and the associated complications.

Activity 2.1.3: Review of the average daily energy and micronutrient requirements (15 min)

Training Method: Plenary discussion and summary

- In plenary ask participants why the body needs energy and when is the need very high.
- Summarize the discussion using the information below.
- Review the amount of energy required by age and sex
- Stress that though the body needs them in small amount, their deficiency causes severe health problems.
- Review the three micronutrients of public health importance: Iron, Iodine, Vitamin A and how much it is required at different ages.
- Participant should not try to memorize the recommended level of intakes.

Information to facilitators

Energy requirement (ER): This is the amount of food energy needed to balance energy expenditure in order to maintain body size, body composition and a level of necessary and desirable physical activity, and to allow optimal growth and development of children, deposition of tissues during pregnancy, and secretion of milk during lactation, consistent with long-term good health. For healthy, well-nourished adults, it is equivalent to total energy expenditure. There are additional energy needs to support growth in children and in women during pregnancy, and for milk production during lactation. Energy requirements also increase during illnesses like HIV. Refer table 2.1 for the daily energy requirement for different age group and gender.

Micronutrient daily requirements are measured by recommended nutrient intake (RNI) which varies with age, sex and physiologic status. Refer table 2.2 for details.

Table 2.1 Average Daily Requirements in Calories (Source: WHO, 1993)

	Status/Age	Energy Need (Calories)
Men	Average Active	2430
Women	Average active	2170
	Pregnant	2460
	Lactating	2570
Children	6–11 months old	730
	1–3 years old	1250
	2–5 years old	1500
	5–10 years old	1800
Boys	10–14 years old	2360
	15–18 years old	2800
Girls	10–14 years old	2040
	15–18 years old	2100

Table 2.2 Recommended daily micronutrient intake (RNI) for selected micronutrients

Nutrient	Unit	RNI	Child 1 - 3 Yrs	RNI Child 4 - 6 Yrs	RNI Child 7 - 10 Yrs	RNI Female: 19 - 50Yrs	RNI Male: 19 - 50Yrs	RNI Pregnant Women
Vitamin A	mg re	0.4000	0.4000	0.4500	0.5000	0.5000	0.6000	0.8000
Iron	mg	18.6000	11.6000	12.6000	17.8000	29.4000	13.7000	30.0000
Iodine	mg	0.0900	0.0900	0.0900	0.0900	0.1500	0.1500	0.2000

Activity 2.1.4: Explanation on the importance of dietary diversity and its relation to good health (15 minutes)

Training Method: Plenary discussion and summary

- Ask participants what they understand by dietary diversity and its importance.
- Write their responses on a flip chart
- Summarize the discussion based on the information provided below on dietary diversity and its importance

Information for Facilitators

Dietary diversity: Eating a variety of food from each of the food groups helps to ensure that you are getting a balanced diet. This includes both macro and micronutrients.

The four food groups

1. Cereals and staple grains (energy foods): *Chose whole grain foods more often*
2. Animal foods, legumes, nuts (body-building foods)
3. Fruits and vegetables (protective foods): *Chose a wide variety of fruits and vegetables, particularly brightly colored fruit and vegetables as they tend to have more micronutrients.*
4. Fats and sugar (extra energy foods)

SESSION 2. 2 LOCALLY AVAILABLE FOOD TYPES AND THEIR CALORIE CONTENTS

Estimated Duration: 40 minutes

Purpose

To assist participants identify locally available food types and know their caloric contents so that these helps them to assess the amount of calorie and food types taken by clients and provide counselling based on gap identified.

Learning Objectives

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

- List locally available food types and identify their groups
- Estimate the amount of calorie in the different meals and foods eaten locally

Overview

Activity 2.2.1 Small group work and presentation on locally available foods types, meals and snacks (**15** minutes)

Activity 2.2.2 Estimate the amount of calorie in the different meals and foods eaten locally (**25** minutes)

Materials

- Flip charts and markers
- Masking tape
- Session objectives written on a flip chart
- Summary points on each activity

Detailed Activities

Activity 2.2.1 Small group work and presentation on locally available foods types, meals and snacks (15minutes)

Training Method: Small Group work, presentation and discussion

- Ask participants to form a group of 5 - 6. Assign participants coming from similar areas in one group. (High land, low land, Pastoralist etc.)
- In their groups ask participants to:
 - List down the type of meals and snacks commonly prepared and consumed in their locality.
 - Describe the frequency and amount of meals and snacks consumed under normal circumstances.
- Participant shall write the list and present to the larger group.
- Use the template below for presentation. Each group shall not take more than 2 minutes to present their findings.

Type of Meals	Number of meals	Snacks	Number of Snacks

Activity 2.2.2 Review of the amount of calorie in the different meals and snacks eaten locally (25 minutes)

- Explain to participants' tables 2.3, 2.4, 2.5 contain the estimated calorie contents of bulk foods, meals and snacks consumed in parts of Ethiopia by citing certain examples.
- Referring to these tables explain to the groups the amount of calorie consumed by people based on the groups presentation on common meals and snacks
- Finalize the session by summarizing the importance of the exercise.
 - Assess the importance of local foods
 - Estimate energy content
 - Educating and counselling of clients

Information for facilitators

Review the energy values of various meals, snacks and bulk foods consumed in Ethiopia from tables 2.3, 2.4, 2.5 as studied by the Ethiopian Health and Nutrition Institute.

Table 2.3: Common Ethiopian meals, each providing 700 – 850 kilocalories

	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 , 1small 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 and 1 small ladle vegetable alicha, 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.

N.B. Small ladle = 50 g

Medium ladle = 70 g

Large ladle =100 g

Table 2.4: Energy Values of Locally Available Snacks (Mekses)

Snack (ingredients)	Amount in grams/ml	Calories	Protein
Kolo (roasted barley, wheat)	50 grams (1 small ladle)	195	5.1
Nifro (boiled wheat and chickpeas)	70 grams (1 medium ladle)	125	301
Kitta/ambasha	100 grams (1 slice)	222	6.8
Beso juice (beso and sugar)	55 grams (5 medium tablespoons beso and 1 teaspoon sugar)	205	5.05
Beso firfir (beso and oil)	65 grams (6 medium tablespoons beso and 1 teaspoon oil)	267	6.06
Sweet potato	100 grams (1 average-size sweet potato)	134	0.5
Boiled milk	140 ml (2 large coffee cups)	103	4.7
Tea with sugar	10 grams sugar (2 teaspoons)	40	0
Ashuk (roasted and boiled beans)	70 grams (1 large coffee cup)	192	11.48
Mango	100 grams (1 average-size mango)	44	0.30
Banana	100 grams (1 average-size banana)	88	0.8
Fried bread unleavened (wheat flour, spiced pepper, oil, salt, water)	300 grams	668	13.7
Thick porridge (wheat flour, oil, spiced pepper, salt, water)	350 grams	591	13.9
Chopped enjera with meat sauce (enjera, meat sauce)	300 grams	466	22.3
Chopped enjera without meat sauce (onion, pepper, oil, salt, water)	265 grams	456	7.6
Split wheat (kinche) (wheat, butter, salt)	160 grams	626	13.7

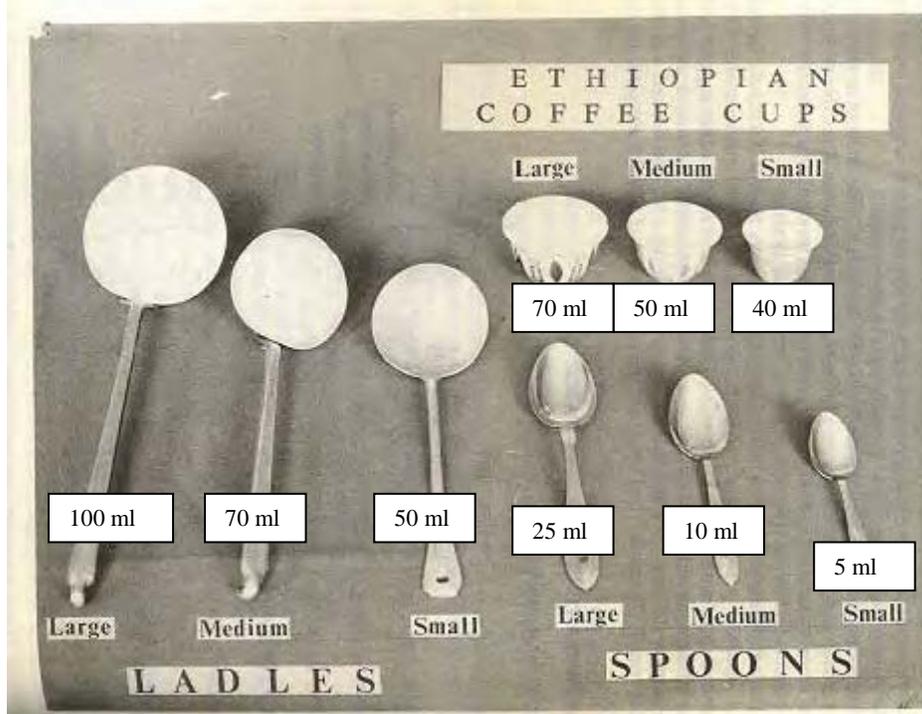
N.B. Small ladle = 50gm Medium ladle = 70 gm Teaspoon = 5 ml
 Tablespoon = 25 ml
 Large coffee cup = 70 ml

Table 2.5: Energy Values of Bulk Foods: *Values are for portions of 100 grams.*

Food	Local name	Energy (kilo-calories)	Protein (Grams)
Cereals:			
Barley, white, flour	Gebs, nech, duqyet	368	8.5
Corn, white, flour	Beqqollo, nech, duqyet	378	9.0
Sorghum, white, flour	Mashyilla, nech	375	8.1
Tef, red, flour	T'yef, qeyy, duqyet	355	9.0
Wheat, white, flour	Sindy, nech, duqyet	363	10.9
Starchy roots and tubers:			
False banana, flour	Inset, karta	196	.9
Potato Irish, raw	Yabesha dinnich, yalteqqe	104	1.3
Sweet potato, raw	Sikkwar dinnich, yalteqqe	136	1.3
Legumes:			
Kidney beans, whole, dried	Adengwarrye, difin, dereq	354	19.1
Lentil, split	Missir, kick	355	23.0
Peas, flour	Arer, duqyet	352	20.1
Vegetables:			
Carrot, raw	Carrot, yalteqqe	42	1.7
Cabbage, raw	T'iqill gommen, yalteqqe	21	.9
Ethiopian kale, raw	Gommen, yalteqqe	46	2.8
Onion (shallot), raw	Qeyy shinkurt, yalteqqe	71	1.06
Tomato, raw	Tyimatyim, yalteqqe	31	1.3
Fruits:			
Avocado, fresh	Avokado	110	1.6
Lemon, fresh	Lomyi	49	.4
Orange, fresh	Birtukan	34	.7
Pineapple, fresh	Ananas	35	.4
Meat, poultry other animal products:			
Beef, raw	Yeberye siga, t'rye	115	19.8
Mutton, raw	Yebeg siga, t'rye	91	19.7
Goat meat, raw	Yefiyyel siga, t'rye	99	19.9
Chicken, whole, raw	Doro, mulu, t'rye	93	16.4

Food	Local name	Energy (kilo-calories)	Protein (Grams)
Milk, cow, fresh	Yelam wetet, yaltefella	74	3.4
Egg, whole, raw	Inqulal, difin, t'rye	153	12.1
Fish:			
Lake fish, raw	Yehatq asa, t'rye	107	17.6
River fish, raw	Yewenz asa, t'rye	137	18.9
Sugars:			
Sugar, refined	Sikkwar	385	0.0
Fats:			
Butter, unspiced, raw	Qibye, qimem, yeলেলেw, t'rye	735	1.3
Oil, niger seed, fresh	Zeyt, nug	896	0.0

Figure 2.1. Common serving and measuring utensils in Ethiopia



SESSION 3: NUTRITION AND HIV INTERACTION

Estimated Duration: 50 minutes

Purpose

This session is intended to elucidate the importance of nutrition care for children and adults living with HIV by examining the interaction between the two and describing the consequences on nutritional status of the individual including the impact on treatment outcome and comprehend the role of Nutrition Assessment, Counselling & Support (NACS) in the context of the national nutrition programs.

Learning Objectives

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

- Describe the effect of malnutrition on HIV infection
- Describe the effect of HIV infection on nutritional status
- Discuss the importance of good nutrition in PLHIV
- Discuss the national nutrition program approach to nutrition and HIV
- Explain components of Nutrition Assessment, Counselling & Support (NACS)

Overview

Activity 3.1: Small group work and plenary presentation, discussion and summary on the interaction of Nutrition and HIV (**30** minutes)

Activity 3.2: Discussion on national nutrition program approach to nutrition and HIV (**5** minutes)

Activity 3.3: Overview of NACS (**15** minutes)

Materials

- Flip charts and markers
- Masking tape
- Session objectives written on a flip chart
- The “Vicious Cycle of Malnutrition and HIV” written on a flip chart
- NACS Components and importance written on a flip chart
- **Handout 2: Link between Nutrition and HIV**

Detailed Activities

Activity 3.1: Small group work and plenary presentation discussion and Summary (30 minutes)

Training Method: Small group work, presentation, discussion and summary by the facilitator

- Write the following on a flip chart:
 - Effect of malnutrition on HIV disease,
 - Effect of HIV disease on nutrition status
 - Effect of good nutrition for PLHIV.
- Divide participants in groups of 5 - 6.
- Assign one topic for each of the groups:
- Ask each group to brainstorm and write its responses on a flip chart.
- Ask each group to present, ask groups that did the same topic to add missing or additional ideas
- Summarize the discussion by emphasizing how HIV infection leads to malnutrition and malnutrition aggravates HIV disease progression through its effect on the immunity using the diagram of the vicious cycle of malnutrition and HIV. Ask participant to refer to **Handout 2: Link between Nutrition and HIV**.
- Stress on the fact that HIV infection leads to increased energy requirement and PLHIV are at increased risk for malnutrition which is associated with increased risk of death even with ART. Health workers are expected to support and counsel patients to maximize and diversify their food intake to prevent malnutrition and its consequences.
- Answer any question that may arise from the participants using the information provided below.

Information for Facilitators

There are over one million people living with HIV (PLHIV) in Ethiopia. The high rates of malnutrition in Ethiopia (e.g. 47 percent of children under age five are stunted) worsen the disease's impact and pose significant challenges to HIV care and treatment. HIV and malnutrition interact in a vicious cycle. For many PLHIV, the infection causes or aggravates malnutrition through reduced food intake, increased energy needs, or poor nutrient absorption. Malnutrition can hasten the progression of HIV and worsen its impact by weakening the immune system, increasing susceptibility to opportunistic infections and reducing the effectiveness of treatment.

Food and nutrition interventions help to break this vicious cycle by improving immune response, management of symptoms, response to treatment, nutritional status, and quality of life and productivity.

Handout 2: Link between Nutrition and HIV

1. The effects of malnutrition on HIV disease

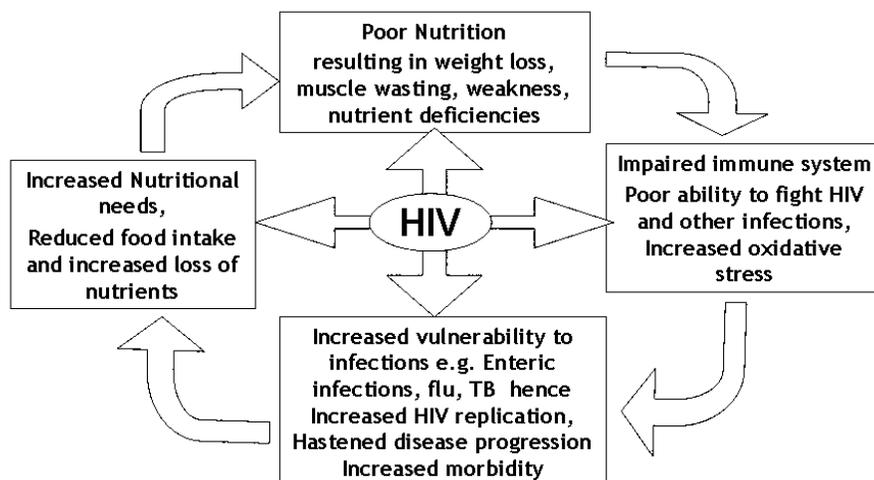
- Malnutrition weakens the immune system and thus the ability of the individual to fight the infection and control disease progression get weak
- Decreases CD4 count leads to appearance of opportunistic infections (OIs)
- Appearance of OIs leads to increase viral replication and further damage to the immune system
- Delays/weakens reaction to infections
- Malnutrition is associated with poor treatment outcome. Patient with SAM BMI < 16 are 4 to 5 times more likely to die in the first 90 days after starting ART. Patients with MAM are 2 to 3 times more likely to die in the first 90 days after starting ART

2. Effects of HIV on nutrition

- Decreased amount of food consumed (for example, due to mouth and throat sores, loss of appetite, side effects of medications, household food insecurity, etc.).
- Decreased nutrient absorption due to HIV infection of intestinal cells, frequent diarrhoea and vomiting, and opportunistic infections.
- Increased energy requirement!!
 - asymptomatic adults requires 10-15 percent additional energy;
 - symptomatic adults require 20-30 percent additional energy;
 - HIV-positive children who are symptomatic but not losing weight require 20-30 percent additional energy;
 - HIV-positive children who are symptomatic and losing weight require 50 – 100 percent additional energy.)
 - Unlike past believes, evidences have shown that there is no extra protein and micronutrients needs above the RDA.

Figure 3.1

Vicious Cycle of Malnutrition and HIV



3. Effects of good nutrition on HIV

- Decreases weight loss
- May delay disease progression and death
- Reduces incidences of opportunistic infections
- Improves survival and HIV-related outcomes
- Improves quality of life

Activity 3.2: Discussion on the national nutrition program approach to nutrition and HIV (5 minutes)

Training Method: Plenary discussion

- Ask participants how nutrition and HIV is addressed in the NNS and NNP.
- Ask participants whether they have read or come across on the national nutrition and HIV guideline, or if they know of any program or intervention
- Show participants the guideline and inform participants to refer to these guidelines.
- Summarize the discussion using the information provided below.

Activity 3.3: Overview of NACS (15 minutes)

Training Method: Plenary discussion and summary presentation

- Ask participants to recap why PLHIV need nutrition care.
- Ask participants to list the nutrition care services for PLHIV and OVC need and what support exists in their facility and community
- Introduce the concept of NACS by describing its components purpose based on the information provided below and ask participants to refer **Handout 3: Nutritional Assessment Counselling and Support**
- Inform participants that the main objective of the training is to enable health workers to practice NACS.

Information for Facilitators

Nutritional care and support for PLHIV and OVC is part of the National Nutrition Strategy (NNS) and National Nutrition Program (NNP). Improving the Care and Nutritional Status of People Living with HIV and AIDS is one component of the NNS and it is one of nutritional services for health facilities in NNP. PLHIV and OVC are priority targets of NNS and NNP.

The national Nutrition and HIV guideline is developed with an objective to improve the nutritional care for PLHIV and OVC through nutritional assessment, counselling, and support.

Handout 3: Nutritional Assessment Counselling and Support

The goal of Nutrition Care for PLHIV and OVC is to improve their Nutrition Status. The Nutritional care is called Nutrition Assessment, Counselling & Support (NACS). The components of NACS are:

- Assessment
 - Anthropometry (BMI, MUAC, Wt/Ht, Growth monitoring)
 - Clinical
 - Dietary
 - Household food security
- Counselling
 - Clinical (including adherence)
 - Dietary (including WASH & food safety)
 - Psychosocial

- Referral to social services including , Economic strengthening, livelihood & food security support; TSF
- Commodity Support
 - Therapeutic/supplementary Food support (Food By Prescription)
 - Safe Water Treatment
 - Multi-micronutrient supplements

Why NACS?

1. NACS recognizes the reciprocal impact between health & nutrition. It is the most powerful nutrition intervention for most AIDS patients is HAART & treatment of opportunistic infections.
2. NACS should support both corrective nutrition management, often for undernourished/wasted AIDS patients early in treatment, and chronic nutrition management as patients are stabilized on HAART
3. NACS is an element of health system strengthening, establishing the capacity of clinics to provide NACS for all adults and children, not just those who are HIV-infected or affected.
4. NACS includes patient referrals to community social services, including Economic strengthening, livelihood and food security support, and referrals from the community (nutrition surveillance) for nutrition and clinical care.

Note: NACS should be considered Standard of Care for patients from diagnosis to end-of-life care.

SESSION 4: AN INTEGRATED APPROACH TO THE NUTRITIONAL CARE OF PEOPLE LIVING WITH HIV

Estimated Duration: 16 hours and 5 minutes

Purpose

In this session, participants will assess and classify the nutritional status of PLHIV and develop a nutrition care plan.

Learning Objectives

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

- Assess and classify the nutritional status of a client.
- Assess health conditions that may affect nutrition and nutrition care and support of PLHIV.
- Understand principles of counselling and the key nutrition and HIV/ AIDS Care practices/behaviours
- Be familiar with clinical algorithm, nutrition care plans and support interventions that can support PLHIV.

Overview

Activity 4.1 Assessment of Nutritional Status (**3hrs and 10 minutes**)

Activity 4.2 Classification of Nutritional Status (**3hrs**)

Activity 4.3 Nutritional Interventions in the context of HIV and AIDS (**1hrs and 55 minutes**)

Activity 4.4 Nutrition Care Plans for management of malnutrition in PLHIV (**8 hrs**)

Materials

- Flip charts and markers
- Masking tape
- Session 4 objectives written on a flip chart
- 3 Weighing scales
- 3 Height boards
- 5 Growth reference charts and BMI charts
- 5 MUAC tapes
- Six sets of photographs of people with wasting, marasmus, and bilateral oedema
- **Handout 4 : Measuring Weight and Height /Length**
- **Handout 5: WHO 2007 Weight for Height Charts**
- **Handout 6: Calculating BMI**
- **Handout 7 : BMI Chart for Adults**
- **Handout 8: BMI for Age Charts for Children and Adolescents**
- **Handout 9: Sample Growth Chart**
- **Handout 10: Measuring MUAC**

- **Handout 11.a and Handout 11.b Clinical Algorithm for Managing Malnutrition in PLHIV- Children and Adults**
- **Handout 12: Classification of Acute Malnutrition – Children**
- **Handout 13: Classification of Malnutrition in Older Children and Adolescents**
- **Handout 14: Classification of Nutritional Status - Adults**

Activity 4.1 Assessment of Nutritional Status - 3 hrs and 10 minutes

Activity 4.1.1 Brain storming on nutritional assessment, indices, indicators, references and cut off points for acute malnutrition - 30 minutes

Training Methods: Discussion/Presentation, Exercise and Summary (30 minutes)

- Explain to participants the different types of malnutrition and emphasis on the importance of assessing acute malnutrition in people living with HIV using the information provided under “Information for Facilitator”.
- Ask participants how they assess nutritional status and record their response on flip chart.
- Present different ways of nutritional assessment used in clinical settings.
- Discuss the importance of using Nutritional Assessment Indices and Indicators and the WHO 2007 reference used to for nutritional assessment using the information provided under “Information for Facilitator”.
- Present the cut- off points for different degree of acute malnutrition using the 2007 WHO reference.

Information for facilitators

Malnutrition: Any condition caused by excess or deficient food energy or nutrient intake or by imbalance of nutrients.

Underweight : Indicates a combination of wasting and stunting in children under the age of five and is measured by weight for age indicator below -2 Z score of the WHO growth standard of 2007.

Chronic malnutrition: Indicates chronic malnutrition for under five children and is measured by height for age indicator below - 2 Z score of the WHO growth standard of 2007.

Acute malnutrition

Acute malnutrition indicates wasting of children under the age of five, most of the time, as a result of recent weight loss.

It is defined by weight for height indicator below -2 Z score of the WHO growth standard of 2007 or mu Mid-upper arm circumference measurement. below 11 cm

Nutritional Status:

Is the health status of individuals or population groups as influenced by intake and utilization of nutrients

Nutritional Assessment:

Is defined as method of gathering, analysing and interpreting information from dietary, biochemical laboratory, anthropometric and clinical information

Method of Assessing Nutritional Status:

- **Dietary:** assesses risk of inadequate intakes; food consumption patterns; intakes of major food sources of nutrients
- **Laboratory:** assesses both biochemical and functional tests. Biochemical tests measure either a nutrient in biological fluids or tissues or urine. Helpful in identifying the second and third stages in the development of a nutritional deficiency. Functional tests used to detect late stages in the development of a nutritional deficiency and the functional consequence of the deficiency of the specific nutrient.
- **Anthropometry:** involves measurements of the physical dimensions and gross composition of the body (WHO 1995). Also assess functional disturbances, growth; maturation (for adolescents); body composition (fat and fat free mass)
- **Clinical:** medical history and physical examination are the clinical methods used to detect signs and symptoms. Signs and symptoms develop during advanced stages of nutritional deficiency stages, therefore, diagnosis of nutritional deficiency should not rely on clinical methods only.

NUTRITIONAL ASSESSMENT INDICES AND INDICATORS:

Raw measurements alone have no meaning unless they are related to, for example, to age or sex of an individual (WHO 1995). Indices are constructed from raw measurements and are necessary for interpretation of measurements. Examples of indices include height -for -age, weight – for height, body mass index and etc.

Indicators are used at population level by comparison of with predetermined reference limits or cut-off points. The weight for height indicator with different cut off points for acute malnutrition is presented below.

<u>Severity of acute malnutrition</u>	<u>W/H Cut-off points</u>
Severe acute malnutrition	<u>W/H</u> < - 3 Z-score or
Moderate acute malnutrition	<u>W/H</u> < -2 Z-score or
Mild malnutrition	<u>W/H</u> -1 to -2 Z-scores or
Not malnourished	<u>W/H</u> > -1 Z-score or

Activity 4.1.2 Measuring weight and height/length – 30 minutes**Training Methods: Discussion/Presentation, Exercise and Summary (30 minutes)**

- Divide participants into small groups and if possible give each group a weighing scale and height board.
- Demonstrate on how to measure weight, height for children and adults ask participants, in pairs, to measure each other's weight, height and record weight, height on flip chart.
- Ask participants to refer to refer to **Handout 4: Measuring Weight and Height**
- Supervise the activity to ensure that each participant does the exercise correctly.

Information for Facilitator

Measuring Weight and Height/Length

Tell participants that there are different kinds of weighing scales available at facilities. If possible carry samples to display. Emphasize the principles of weighing (discussed below) remains the same for all types of scales being used.

1. Measuring Weight

- Body weight is composed of protein, fat, water and bone
- Choose appropriate scale for the age of the client- adult scale Pediatric weighing scale.
- Children below the age of 2 years should be weight lying or sitting but make sure that they are at centre not at the edge of the scale.
- Make sure the scale pointer is at zero and is on flat stable surface.
- Ensure that it is functioning well by weighing a known weight – yours!
- Explain to the person or care taker that you are going to weigh the client
- Ask the person to take off shoes, hat, and scarves so that he/she is wearing minimum clothing. In case of young children remove also diapers
- Ask the person to stand straight on the centre of the balance platform (if the person cannot stand without help, take MUAC).
- Read the weight as soon as the indicator on the scale has stabilized.
- Record the weight to the nearest 0.1 kg.
- Make sure the weighing scale is calibrated to **zero** before each measurement is taken.
- Record the weight to the **nearest 100 grams**.



2. Measuring Height/Length

- Measure children who are 85 cm long or less (or under two years old) lying down. Measure taller children while they are standing.
- Make sure the client is barefoot and wearing no headgear.
- Make sure the client's shoulder blades, buttocks, and heels touch the vertical surface of the height/length board.
- Make sure the client's knees are fully straight and his/her hands are held down to the side.
- Make sure the client's neck is straight and his/her eyes look straight ahead.
- Place the headpiece of the height/length board firmly on the client's head.
- Read the measurement to the nearest 0.5 centimetre.

Good nutrition improves the quality of life and health of PLHIV. This is why it is important to monitor nutrition status at least once a month.

Handout 4: Measuring Weight and Height/Length

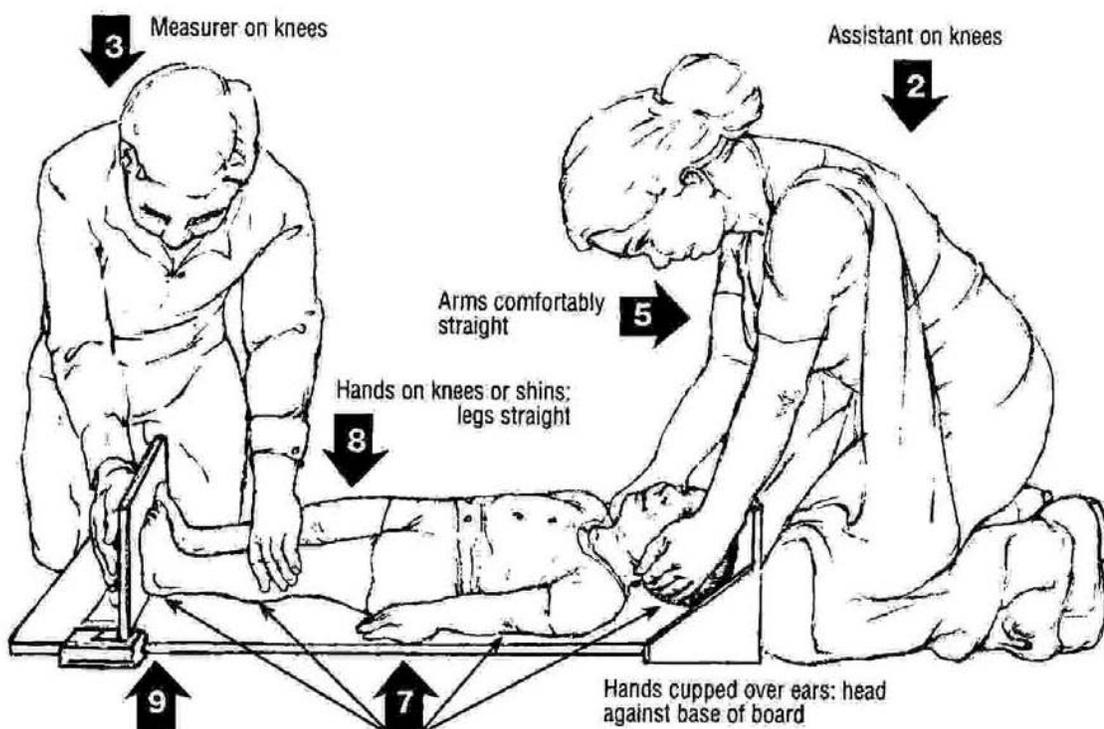
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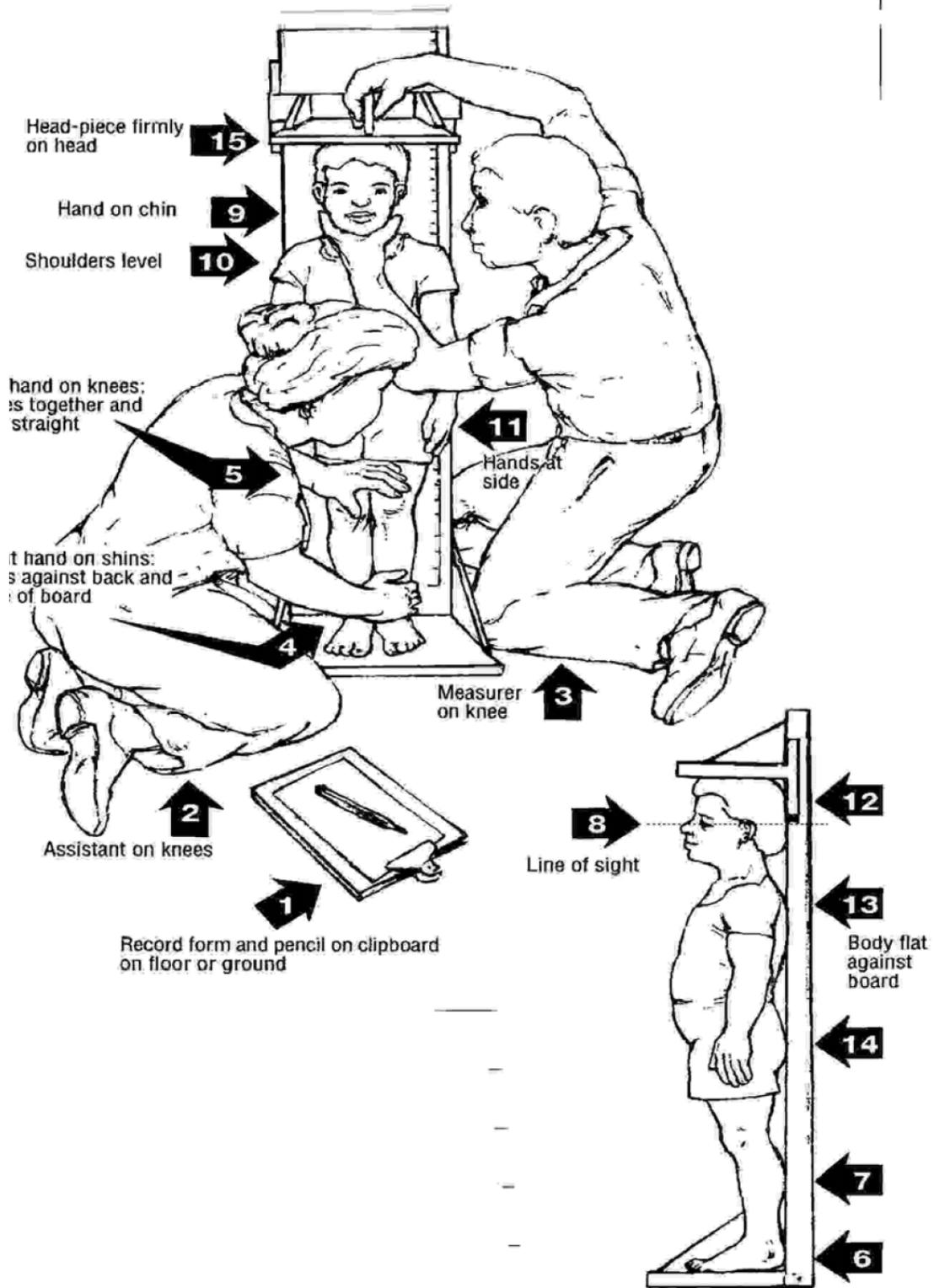
1. Measure weight

- Make sure the scale pointer is at zero.
- Ask the person to take off shoes, hat, and scarves so that he/she is wearing minimum clothing.
- Ask the person to stand straight on the centre of the balance platform (if the person cannot stand without help, take MUAC).
- Record the weight to the nearest 0.1 kg.

2. Measuring Height/Length

- Measure children who are 85 cm long or less (or under two years old) lying down. Measure taller children while they are standing.
- Make sure the client is barefoot and wearing no headgear.
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- Make sure the client's neck is straight and his/her eyes look straight ahead.
- Place the headpiece of the height/length board firmly on the client's head.
- Read the measurement to the nearest 0.5 centimetre.





Activity 4.1.3 Measuring MUAC - 30 minutes**Training Methods: Demonstration and Skills Practice (30 minutes)**

- Brainstorm on the use and ways of measuring MUAC and summarize with the information below.
- Give each participant, still in the small groups, a copy of **Handout 10 Measuring MUAC**. Explain the use of MUAC and demonstrate the correct procedure for measuring MUAC on one of the participants.
- Ask one group to come to the front of the class for a demonstration. The group should work in pairs. In each pair, one group member should measure the MUAC of the other and record it on the flip chart.
- Supervise the groups to make sure the participants are doing this correctly.
- Ask one or two groups to present their results.
- Repeat the demonstration if necessary, emphasizing areas that need strengthening.
- Ask participants in the larger group session to discuss the challenges of taking this measurement (e.g., not finding the midpoint accurately).

Information for Facilitators

Mid-upper arm circumference (MUAC) can be used for pregnant women or PLHIV with oedema, whose weight does not necessarily indicate their nutritional status. MUAC also can be used for patients who cannot stand to have their weight and height measured. MUAC is used as an alternative measure of “thinness” to weight-for-height. It is particularly used in children from one to five years; however, its use has been extended to include children over 65 cm in height – or children of walking age and adults. MUAC is not used for infants under six months old (*Source: Ethiopian OTP Training Manual, 2007*).

MUAC is the circumference of the left upper arm, measured at the midpoint between the tip of the shoulder and the tip of the elbow using measuring or MUAC tape. Following are steps to measure MUAC.

- Remove clothing that may cover the client’s left arm. If possible, the client should stand erect and sideways to the measurer.
- Calculate the midpoint of the left upper arm by first locating the tip of the shoulder with your fingertips. Bend the client’s elbow to make a right angle. Place the tape at zero, which is indicated by two arrows, on the tip of the shoulder and

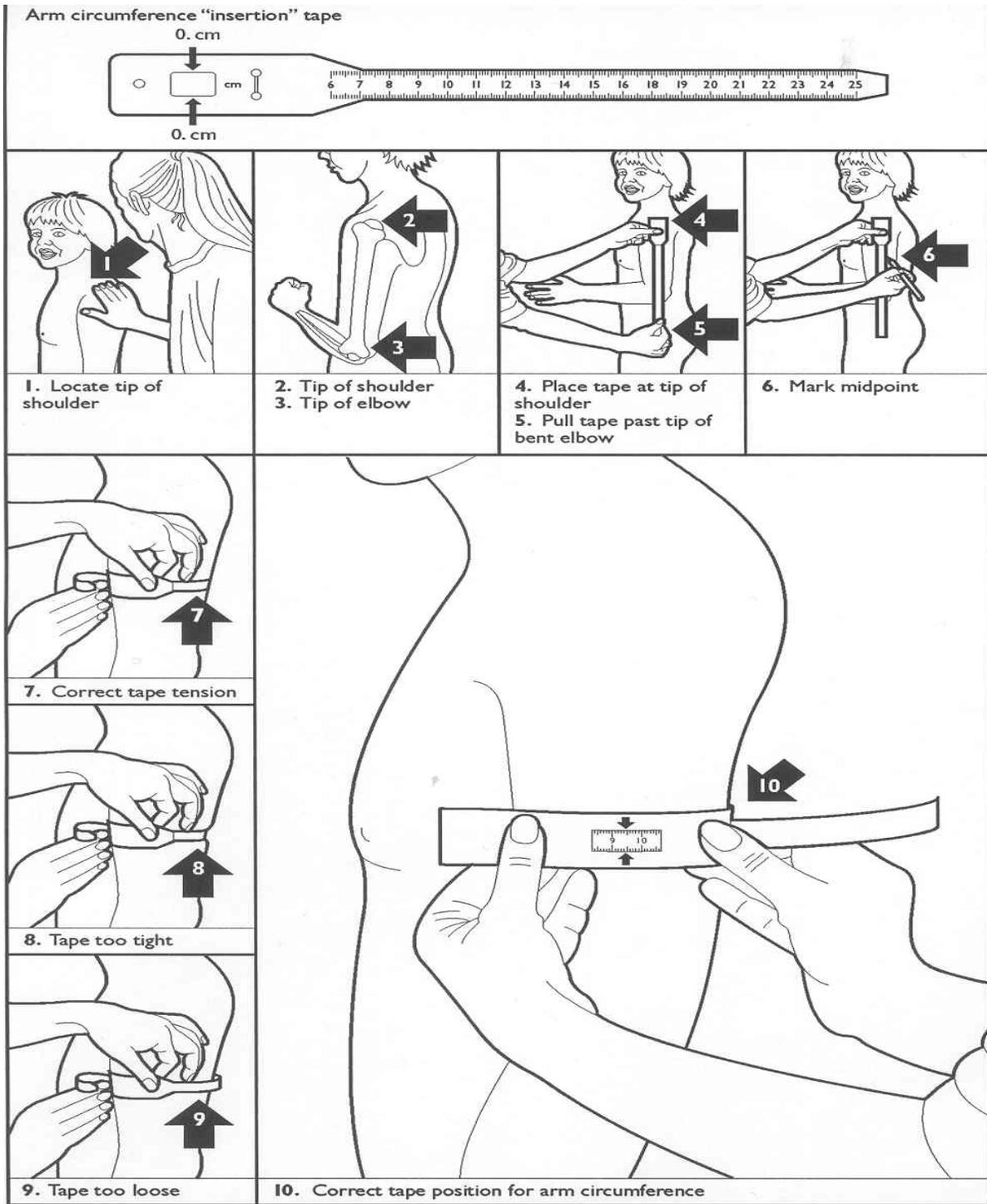
pull the tape straight down past the tip of the elbow. Read the number at the tip of the elbow to the nearest centimetre.

- Divide this number by two to estimate the midpoint. A piece of string bent in middle can also be used for this purpose; it is more convenient and avoids damage to the tape. Mark the midpoint with a pen on the arm.
- Straighten the client'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.
- Inspect the tension of the tape on the client's arm. Make sure the tape has the proper tension and is not too tight or too loose. Repeat any step as necessary.
- 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
- Immediately record the measurement.

Handout 10: Measuring MUAC

How to measure MUAC:

1. Keep your work at eye level. Sit down when possible. Very young children can be held by their mother during this procedure. Ask the mother to remove 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 a 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 centimetre. Divide this number by two to estimate the midpoint. As an alternative, 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.

Activity 4.1.4 Computing weight for height for children under the age of 5 years – 30 minutes

Training Method: Plenary discussion and exercise (30 minutes)

- Discuss the use of weight for height in assessing acute malnutrition explain to participants the importance of taking accurate weight and height measurement to compute this index
- Present the weight for height charts for boys and girls (**Handout 5: WHO 2007 weight for Height Charts**)
- Write the following figures below on flip chart and ask participants to calculate weight for height:
 - Length 45 cm; weight 2.4 kg - Boy
 - Height 90 cm; weight 10.1 kg – Boy
 - Length 65.5 cm ; weight 6.4 kg - Girl
 - Height 88cm ; weight 12kg – Girl
- Divide participants in groups of 4 – 5 and ask participants to compute weight for height for under five children.

Information for the facilitator

Weight for Height

“Measures body weight (in kilogram)relative to height (in centimetre). Low weight for height in children is described as thinness and reflects a pathological process referred to as “wasting”. It arises from a failure to gain sufficient weight relative to height or from losing weight”

Computing Weight-for-Height for Children Under 5 Years Old

The WHO 2007 W/H Z-Score reference chart is used for comparison. The left-hand axis on the Weight-for-Height Chart shows the child's weight. The bottom axis locates the child's height.

Plot the point on the chart where the line for the child's weight meets the line for the child's height. The median weight of the reference child with the same height is also plotted. The chart contains different reference lines with standard deviations values from the median value.

Handout 5: WHO 2007 Weight-for-Height Charts





2 to 5 years





2 to 5 years

Activity 4.1.5 Computing BMI for Adults – 20 minutes**Training Methods: Skills Practice (20 minutes)**

- Brainstorm on definition and computing of BMI and summarize using the information above.
- With the participants still in their small groups, ask each participant to refer to copies of **Handout 5: Measuring Weight and Height** and **Handout 6: Calculating BMI**. This handout includes a BMI chart for classifying nutritional status. Explain the use of BMI and the formula for calculating BMI.
- Ask the groups to calculate the BMI for the weight and heights they recorded on their flip charts.
- Supervise the activity to ensure each participant does the exercise correctly.
- Demonstrate how to calculate BMI if necessary, emphasizing areas that need strengthening.

Handout 6 : Calculating BMI**Computing BMI for Adults**

Body Mass Index (BMI) is a number calculated from a person's weight and height. BMI is a reliable indicator of body fatness for people. BMI does not measure body fat directly, but research has shown that BMI correlates to direct measures of body fat, such as underwater weighing and dual energy x-ray absorptiometry (DXA). BMI can be considered an alternative for direct measures of body fat. Additionally, BMI is an inexpensive and easy-to-perform method of screening for weight categories that may lead to health problems (*Source: cdc.gov*).

BMI is also used as measurement of adult malnutrition in HIV care and treatment programs, although measurement of weight loss is the most common one. If BMI is below the established cutoffs by WHO, nutrition intervention (improved diet, management of symptoms, or feeding assistance) is needed to slow or reverse the loss.

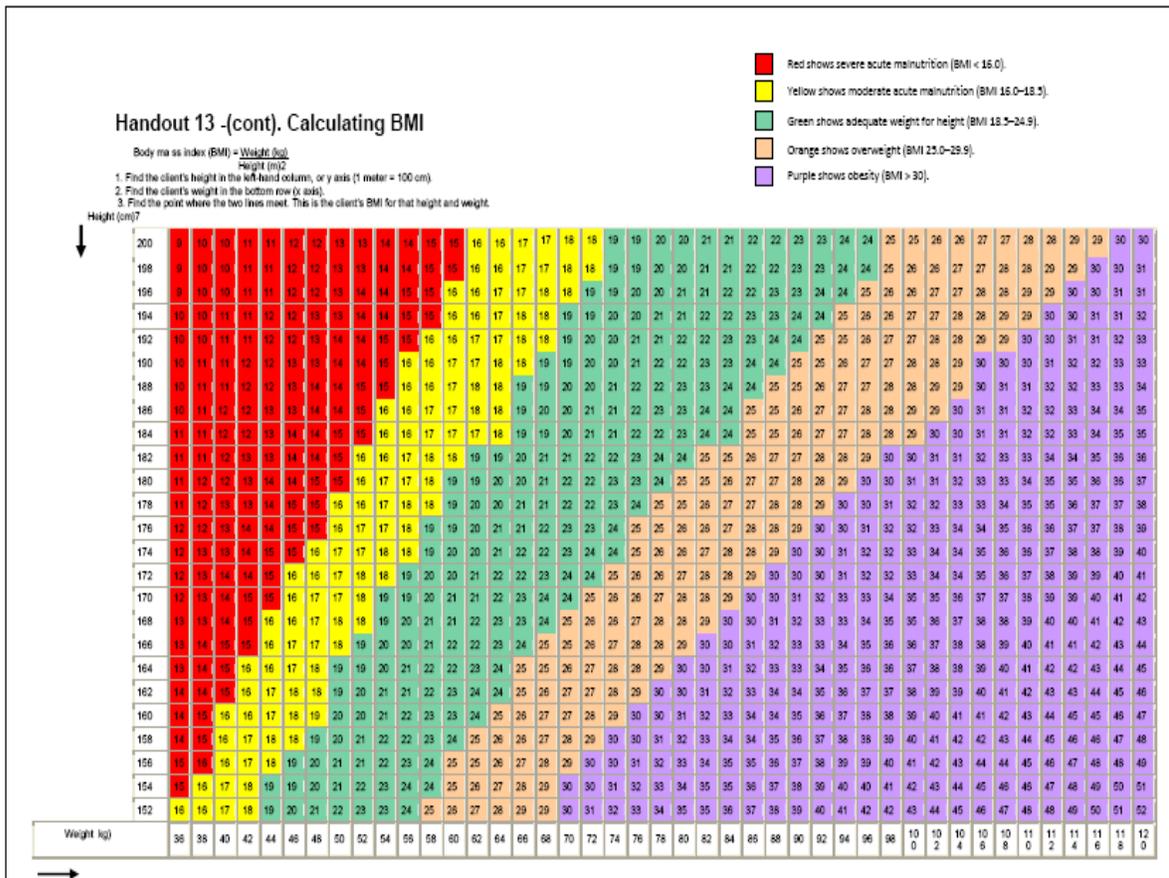
However, BMI does not account for changes in body composition that PLHIV may experience as a result of ART. BMI cutoffs are also not accurate in pregnant women or adults with oedema, whose weight gain is not linked to nutritional status. For these groups, MUAC can be an effective indicator of nutritional status. MUAC can also be problematic for individuals with changes in body composition due to ART (e.g., lipotrophy).

BMI is calculated as the weight of the client in kilograms divided by the square of the height in meters.

- **Calculate body mass index (BMI).**
- Convert cm to m (1 m = 100 cm)
- Calculate BMI using this formula (or using the BMI chart on the following page):

$$\frac{\text{Weight in kg}}{\text{Height in m}^2}$$

Handout 7: BMI Chart for Adults



Activity 4.1.6 Computing BMI for children from 5 – 19 years – 30 minutes

Training Method: Plenary discussion and exercise (30 minutes)

- Discuss the use of BMI for age as a way of assessing Nutritional Status and explain to participants that age is an important factor that influences BMI in growing children
- Explain the same formula used to calculate BMI is used to calculate for BMI for Age.
- Present the BMI for Age chart for older children and adolescents (**Handout 8.: BMI for Age chart for older Children and Adolescents**)
- Write the following figures below on flip chart and ask participants to calculate BMI for age:
 - 6yrs old girl with height of 110cm and weight of 18.3 kg
 - 15yrs old girl with height of 148cm and weight of 35kg
 - 8yrs old boy with height of 120cm and weight of 18kg
 - 16yrs old boy with height of 150cm and weight of 40kg
- Divide participants in groups of 4 – 5 and ask participants to compute the BMI for age

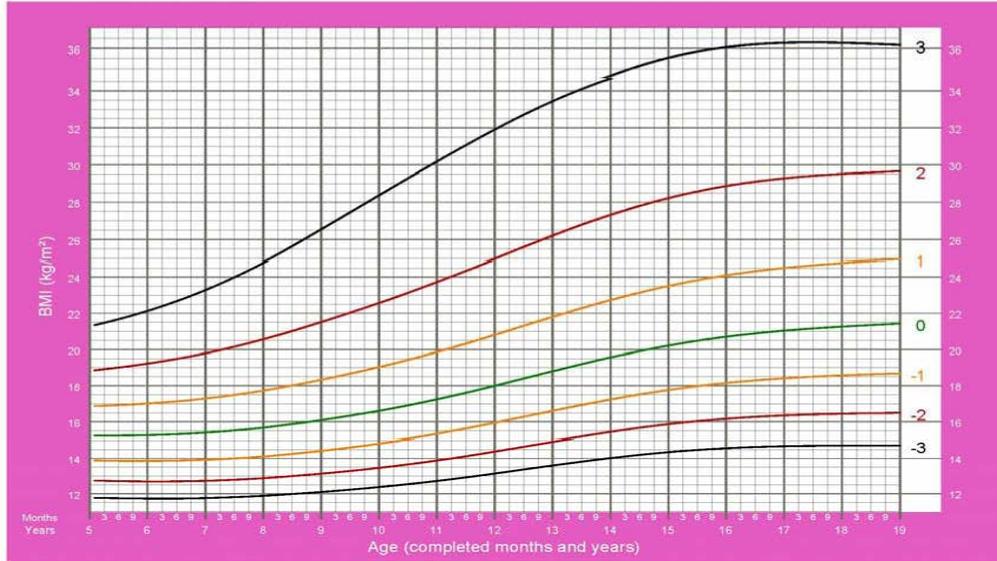
Information for Facilitators

BMI-for –Age: In children between the ages of 5 – 17 years, the computed BMI shall be compared against a BMI- for- Age Reference charts below, to decide whether the computed BMI indicates malnutrition or not, as children are in a dynamic growth process will show varying weight and height at different ages.

Handout 8: BMI-for-age Chart for older Children and Adolescents

BMI-for-age GIRLS

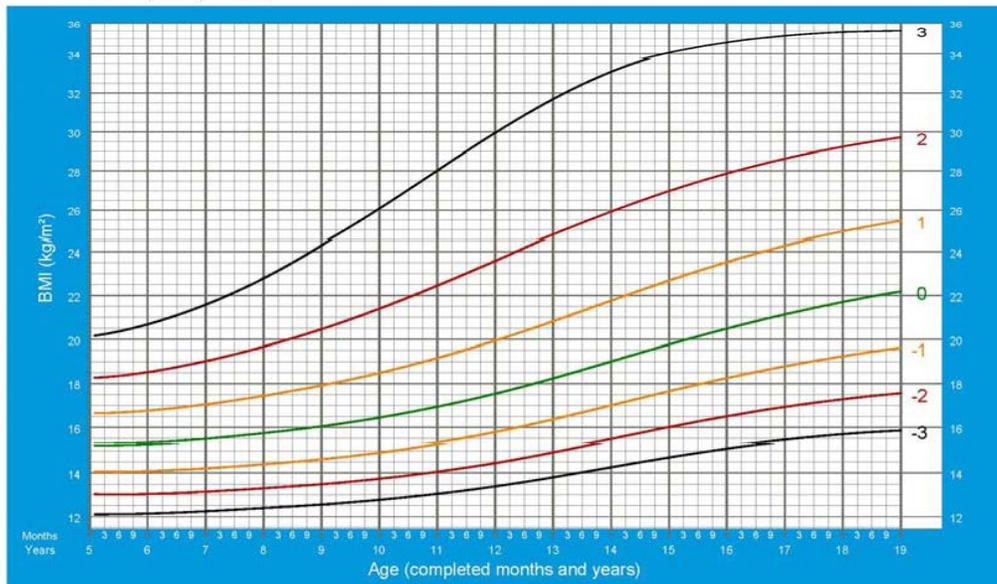
5 to 19 years (z-scores)



2007 WHO Reference

BMI-for-age BOYS

5 to 19 years (z-scores)



2007 WHO Reference

Activity 4.1.7 Assessing a Child's Growth Curve - 15 minutes

Training Methods: Exercise (15 minutes)

- Explain the use of weight for age by referring to the note below
- Divide participants in groups of 5 – 6.
- Ask the participants to refer **Handout 9: Sample Growth Chart**.
- Ask them to decide what the growth chart shows: weight gain, or poor weight gain (weight flattening, or weight loss)
- Ask one group to report its result.

Answers:

- The first growth chart shows a defaulting growth pattern.
- The second growth chart shows normal growth.
- The third growth chart shows stagnant growth.
- Give explanations as you give the answers.

Information for the Facilitator

Weight for Age

Weight for age reflects body mass relative to chronological age. Low weight for age is described as lightness and reflects a pathological condition referred to as “underweight” arising from gaining insufficient weight relative to age, or losing weight (Gibson 2005, pp 254)”

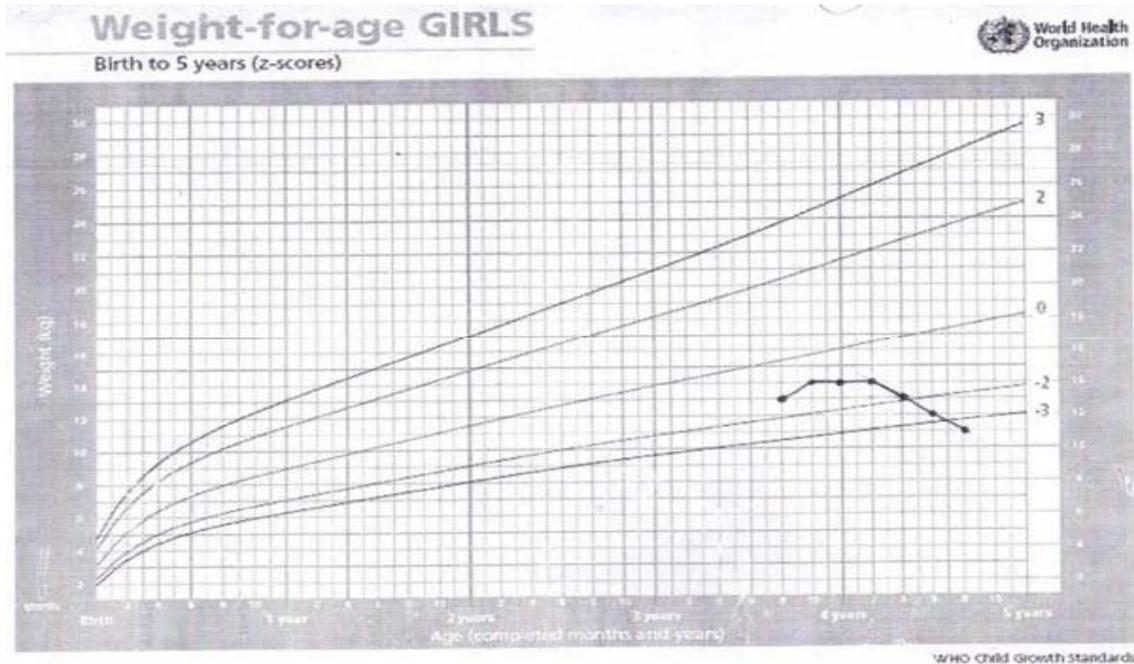
Weight for age is used to monitor the growth of children. Down ward trend of weight plots indicates loss of weight and require further evaluation even if the line remains within the normal curve. Weight for age does not differentiate between acute and chronic malnutrition. Children whose weight for age lies below the -3 Z score indicate severe underweight.

Computing Weight-for-Age for Children Under 5 Years Old

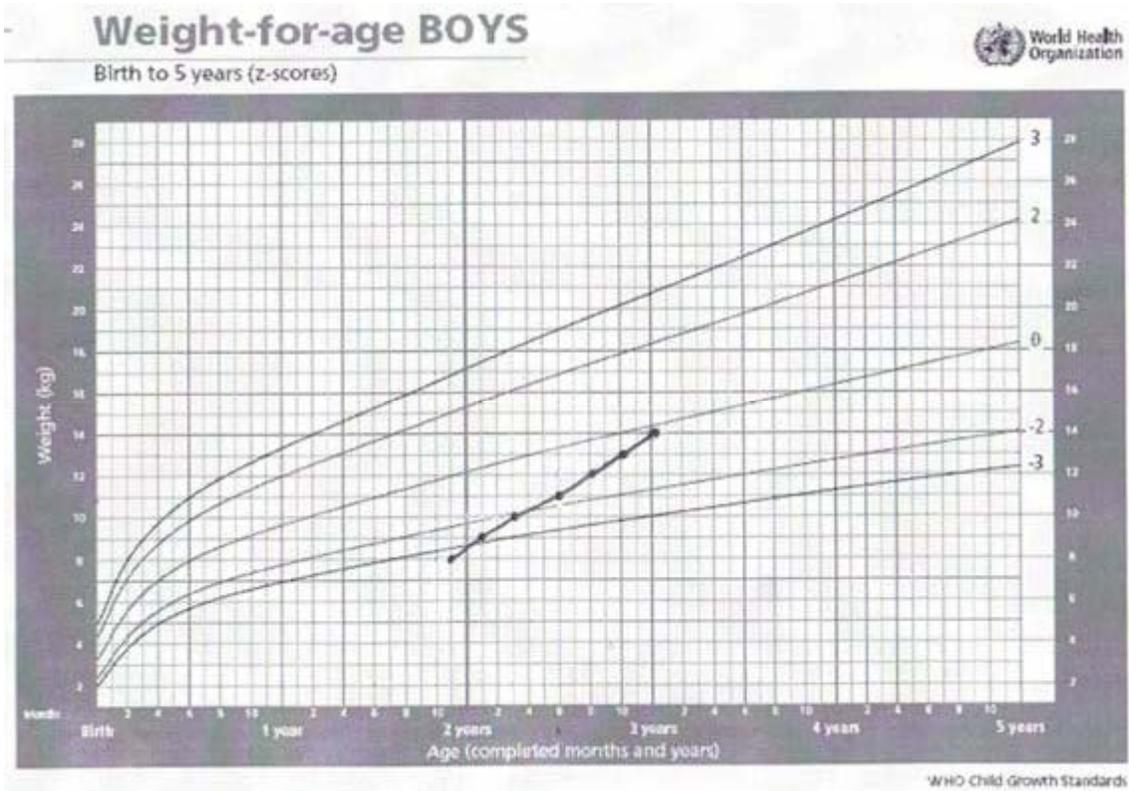
The left-hand axis on the Weight-for-Age Chart shows the child's weight. The bottom axis locates the child's age.

Plot the point on the chart where the line for the child's weight meets the line for the child's age. The median weight of the reference child with the same height is also plotted. The chart contains different reference lines with different standard deviations values from the median value.

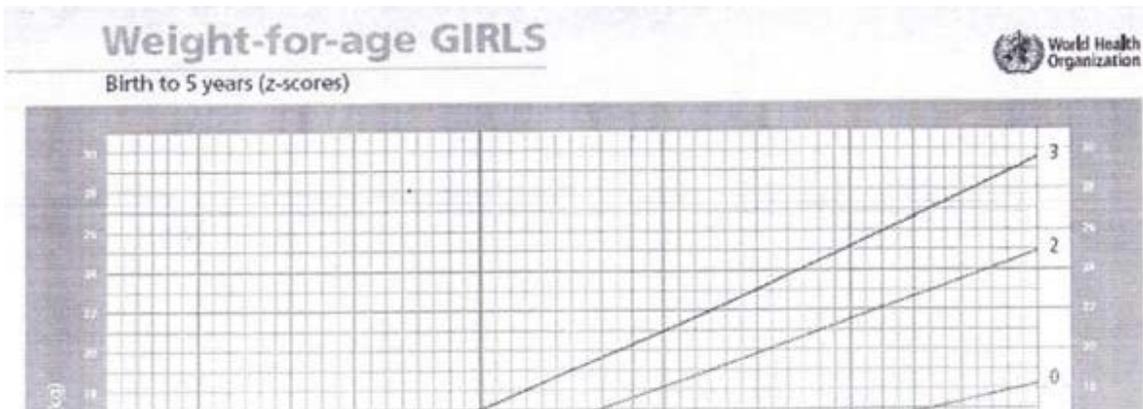
Handout 9: Sample Growth Chart

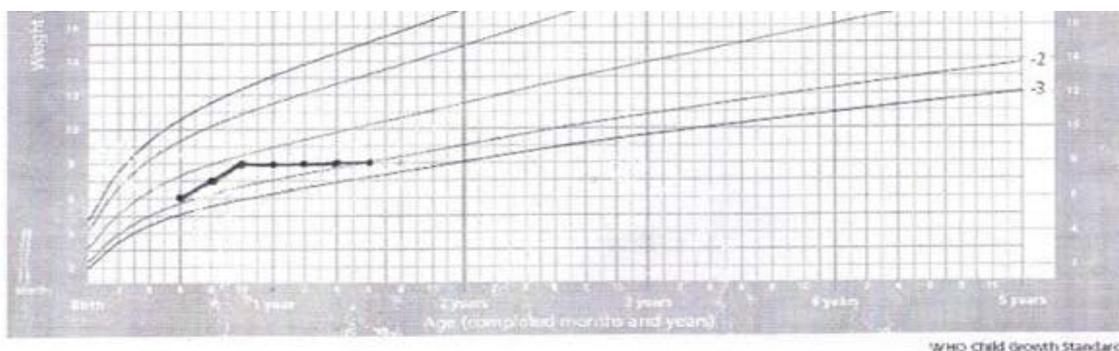


The graph above shows that the child is losing weight progressively. Normally one should not wait until the child's weight reaches less than -3. Preventive measures should be introduced earlier.



The graph indicated progressive weight gain – catch up growth





Again the growth chart shows failure to gain weight. The child weight was the same during the visits one can mistakenly pass this as no weight loss had it not been plotted on a growth chart

Activity 4.1.8 Demonstration of pictures of severely malnourished children – 5 minutes

Training Methods: Exercise and Discussion (5 minutes)

1. Ask the participants to remain in their groups of four. Give each group a set of photographs of people with severe malnutrition and oedema.
2. Ask the groups to look at the photographs and identify signs of severe malnutrition. One participant should list the signs on a flipchart.
3. Ask the group to discuss the sensitivity of those signs in the context of HIV and OIs.
4. Call on one or two groups to present the results of the discussion in the larger



Daily Evaluation (5 minutes)

Thank participants for their contributions. Give each participant a copy of the daily evaluation form for the day ask participants to complete the form without their names and leave them turned over on the tables as they leave.

Fill out this form as each topic is completed.

1 = Good 2 = Average 3 = Poor

Topic	Time allocated	Relevance to Your Work	Support from Facilitators	Resources	Contribution to Skills Improvement	Suggestions
Session 1						
1. Introductions, Expectations, Objectives						
2. Pre-test						
Session 2						
1. Nutrition and HIV/ADS Guideline Learning Skills						
2. Counselling tools						
Session 3						
1. Clinical Nutrition Practices and Messages						

Note to Facilitators: Briefly review the information covered and answer any questions participants have.

End of the Day 1

4.2. CLASSIFICATION OF NUTRITIONAL STATUS – 3HRS

Activity 4.2.1 Introduction to Algorithm for management of malnutrition in children and Adults - 30

Training Methods: Presentation (30 minutes)

- Ask participants to refer to the copies of **Handout 11.a and Handout 11.b Clinical Algorithm for Managing Malnutrition in PLHIV- Children and Adults.**
- Ask the participants to read through the first two parts of the algorithm under Assess column (history, look and feel and anthropometric measurement).
- Review in detail the first part of the algorithm using the information below for assessment and classification of the client's nutritional status.

Information for Facilitators

Key message: Regular and careful assessment of the client's nutritional status helps monitor HIV disease progression, can identify complications early, and thus offers the opportunity to intervene. Current nutritional status can give an idea of kind of nutrition care needed.

Managing Malnutrition in PLHIV follows the IMNCI Case Management Model, which uses the following steps:

1. Assess and Classify.
2. Identify Treatment.
3. Treat.
4. Counsel.
5. Follow up.

The first two columns of the algorithm describe what to **ask, look/feel**, or measure in order to assess malnutrition. Once the health provider assesses the client's nutritional status, he/she compares it against internationally accepted standards/references and **classifies** the client by degree of malnutrition: severe malnutrition, moderate/mild malnutrition, or normal. The classification determines the **nutrition care plan** to use.

Assess

Following the steps in the algorithm, the health care provider should refer to records or ask to determine the following:

- Noticeable weight loss over the past month or since the last visit.
- Whether there is active TB (being treatment).
- Diarrhoea for more than 14 days.
- Other chronic opportunistic infections.
- Nausea/vomiting, persistent fatigue and poor appetite.
- Whether the client has had noticeable changes in body composition/fat distribution, especially the thinning of limbs and face, breasts, stomach region, or back/hump.

Look/Examine, Measure - Adult

Remove some clothing if necessary to see properly.

1. Check for the presence of oedema in both feet.

Check for oedema in both feet and sacrum

Observation	Classification
No oedema	(0)
Bilateral oedema in both feet (below the ankles)	+
Bilateral oedema in both feet and legs (below the knees)	++
Bilateral oedema in both feet, legs, arms, and face	+++

Rule out other causes of symmetrical oedema, such as pre-eclampsia, severe protein urea, nephritic syndrome, nephritis, acute filariasis, heart failure and wet beriberi.

2. Check for danger signs

- Severe anaemia (paleness, pallor)
- Severe dehydration
- Active TB
- Bilateral severe oedema (+++)

Look/Examine, Measure - Children

1. Look for signs of severe wasting.

Remove some clothing if necessary to see properly.

For those under six months, signs of severe wasting (marasmus) include the following:

- Loss of subcutaneous fat. Look at the client from the side to see whether the fat of the buttocks is significantly reduced.

- Loss of muscle bulk around the shoulders, arms, buttocks, ribs, and legs. Is the outline of the ribs clearly visible? Are his/her hips small compared with the chest and abdomen?
- Sagging skin. In extreme cases, you see folds of skin that look like the client is wearing baggy pants, especially for children.

2. Check for the presence of oedema in both feet.

Check for oedema in both feet.

A child with (pitting) oedema in both feet may have kwashiorkor. Children with kwashiorkor or marasmic kwashiorkor should be treated on an inpatient basis if complicated. Using your thumb, press gently for 3 to 5 seconds on the top of each foot. The client has oedema if a dent remains after you lift your thumb. Nutritional oedema normally starts from the feet and extends upward to involve the arms and then the face. Oedema is classified as in the table below.

Observation	Classification
No oedema	(0)
Bilateral oedema in both feet (below the ankles)	+
Bilateral oedema in both feet and legs (below the knees)	++
Bilateral oedema in both feet, legs, arms, and face	+++

3. Measure weight, height and MUAC

Compute weight/height

- Measure MUAC
- Weight/age (If weight/height and MUAC measurements are not possible)
- BMI for age

4. Check for danger signs

- Intractable vomiting
- High fever $>39^{\circ}\text{C}$
- Hypothermia $<35^{\circ}\text{C}$
- Convulsion/fitting
- Persistent diarrhoea
- Bilateral oedema (+++)
- Severe dehydration
- Extensive skin lesions
- Very weak, lethargic, unconscious
- Severe anaemia

5. Check for Severe Anaemia

Palmar pallor is a sign of anaemia. Look at the skin of the client's palm. Hold the palm open by grasping it gently from the side (do not stretch the fingers backward). Compare the colour of the palm with your own. If the client's palm is pale with some pink areas, he/she has some palmar pallor. If the palm is very pale, the client has severe palmar pallor.

Handout 11a: Clinical Algorithms for Managing Malnutrition in PLHIV - Children

ASSESS HISTORY		LOOK AND FEEL	CRITERIA	CLASSIFY	TREATMENT/ CARE PLAN
<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 last visit</p> <p>2. Does the child have:</p> <ul style="list-style-type: none"> • Cough for more than 21 days? This may be due to HIV-related chronic disease (e.g., pneumonia, PCP, TB, lymphocytic interstitial pneumonia [LIP]) or , others • Active TB on treatment • Diarrhea for 14 days or more • Other chronic OI or malignancy • Poor appetite <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Ask all questions, check with danger signs and complete all assessments with</p> </div>	<p>1. Those under 6 months of age look for signs of severe visible wasting: e.g.</p> <ul style="list-style-type: none"> • loss of muscle bulk • sagging skin/buttocks <p>2. Check the presence of oedema on both feet</p> <p>3. Measure the weight (kg) and height /length(cm)</p> <ul style="list-style-type: none"> • Compute weight-for-height/length, for children < 5 yrs. • Compute BMI for age for children 5 -19 yrs. <p>4. Measure the mid-upper-arm circumference (MUAC)</p> <p>5. If wt/ht and MUAC are not possible, then compute weight-for-age</p> <ul style="list-style-type: none"> • If weight-for-age is used, check the shape of the growth curve. • Or calculate percentage change in weight since last visit. <p>6. Examine/observe for danger signs of:</p> <ul style="list-style-type: none"> • Intractable vomiting • High fever >39°C/malaria • Hypothermia <35°C • Severe anaemia (paleness, palm pallor) • Convulsion/fitting • Persistent diarrhoea • Bilateral oedema +++ • Severe dehydration 	<p>Bilateral pitting edema</p> <p>OR</p> <p>WHZ below -3 of the WHO standard</p> <p>OR</p> <p>MUAC</p> <p>Children 6mo-59mo <11 cm Children 5yr-9yr <12.9 cm Children 10yr-14yr <16 cm</p> <p>OR</p> <p>Visible signs of severe malnutrition for under six months of age</p> <p>OR</p> <p>BMI for age: 5-19 years <-3 Z-score</p>	<p>Severe or moderate Malnutrition with medical complications</p> <ul style="list-style-type: none"> • If any of the danger signs OR • Infant < 6 months OR • Severe bilateral edema OR • Poor appetite 	<p>Admit or refer for inpatient care.</p> <p>NUTRITION CARE PLAN A (RED)</p>	
		<p>WHZ below -2 Z –score and > -3 Z – scores of the WHO standard</p> <p>OR</p> <p>MUAC</p> <p>Children 6 mo -59 mo 11- 12 cm Children 5yr-9yr 13 – 40cm Children 10yr-14yr 16- 18cm</p> <p>OR</p> <p>BMI for age: 5-19 years z-score from -2 to -3</p>	<p>MODERATE MALNUTRITION</p>	<p>Refer for Out Patient Care</p> <p>NUTRITION CARE PLAN B (YELLOW)</p>	
		<p>Regardless of WFH, MUAC or BMI for age:</p> <p>Growth Curve Faltering</p> <p>Confirmed significant weight loss of > 5% since the last visit</p>	<p>POOR WEIGHT GAIN</p>		
		<p>Regardless of W/H, MUAC or BMI for age:</p> <ul style="list-style-type: none"> • Chronic Lung disease • TB • Persistent diarrhea • Other Chronic OI or Malignancy 	<p>Signs of SYMPTOMATIC DISEASE</p>		

	<ul style="list-style-type: none"> • Extensive skin lesion • Very weak/lethargy • Severe Pneumonia or active TB? Any chest in-drawing 	<p>Child is gaining weight or maintaining a proper WFH WHZ < -1 Z – scores and > -2 Z-scores of the WHO standard OR BMI for age: 5-19 years z scores from -1 to -2 In the absence of signs of symptomatic disease and significant weight loss</p>	<p>GROWING APPROPRIATELY</p>	<p>NUTRITION CARE PLAN C (GREEN)</p>
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Handout 11 b: Clinical Algorithm for Management of Malnutrition for PLHIV – Adults

ASSESS	LOOK AND FEEL	CRITERIA	CLASSIFICATION	TREATMENT PLAN
<p>HISTORY</p> <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"> • Active TB or is on treatment for it? • Diarrhoea for more than 14 days? • Other chronic OIs or malignancies? (e.g., esophageal infections) • Mouth soars or oral thrush? <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"> • Thinning of limbs and face> • Change in fat distribution on the limbs, breasts, stomach region, back or shoulders? <p>4.Has the client experienced the following?</p> <ul style="list-style-type: none"> • Nausea and/or vomiting? • Persistent fatigue? • Poor appetite? 	<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"> • Severe anemia (paleness, pallor of the palms) • Severe dehydration • Active TB • Bilateral severe edema 	<p>Bilateral pitting edema</p> <p><u>Adults (non-pregnant/post-partum)</u> BMI < 16 kg m² (If BMI cannot be measured, use MUAC cut – off <18 cm)</p> <p><u>Pregnant/postpartum women</u> MUAC < 19 cm</p>	<p>SEVERE/MODERATE malnutrition <u>with complications</u></p> <p>if client has any of the danger signs or severe edema (e.g., severe dehydration, poor appetite, bilateral edema)</p> <p>Acute malnutrition <u>without complications</u></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>NUTRITION CARE PLAN A (RED)</p>
		<p><u>Adults (non-pregnant/post-partum)</u> BMI <18.5 (If BMI cannot be measured, use MUAC cut off 18 -21 cm)</p> <p><u>Pregnant/postpartum women</u> MUAC 19 – 22 cm</p>	<p>MODERATE malnutrition</p>	<p>NUTRITION CARE PLAN B (YELLOW)</p>
		<p>Regardless of BMI or MUAC:</p> <ul style="list-style-type: none"> • Confirmed unintentional weight loss of > 5% since the last visit • Reported weight loss: e.g. loose clothing which used to fit 	<p>Significant weight loss</p>	
		<p>Regardless of BMI or MUAC:</p> <ul style="list-style-type: none"> • Chronic lung disease • TB • Persistent diarrhoea • Other chronic OI or malignancy 	<p>Signs of SYMPTOMATIC DISEASE</p>	
		<p><u>Adults (non pregnant/post-partum)</u> BMI ≥ 18.5 (If BMI not possible, use MUAC cut off > 21 cm)</p> <p><u>Pregnant/post-partum women</u> MUAC > 21 cm</p> <p>In the absence of signs of symptomatic disease and significant weight loss</p>	<p>NORMAL</p>	<p>NUTRITION CARE PLAN C (GREEN)</p>

Activity 4.2.2 Classification of malnutrition using weight for height – children under the age of 5 years – 30 minutes

Training Methods: Plenary discussion and Exercise (30 minutes)

Weight for height index for under five children

- Review the use of weight for height indicator in the identification of acute malnutrition
- Present the cut-off points on a flip chart based on the table given below
- Ask participants to look at the weight for height charts and check for the previously computed values to classify nutritional status.
- Ask participants for any problems in using the chart and give explanations as needed
- Introduce the participants to the clinical algorithm wall chart and ask participant to use computed values to classify using the algorithm chart too.

Cut-off points to classify acute malnutrition based on weight for height:

The table below shows classification of nutritional status in children less than 5 years using the indicator W/H. Cut-off points using WHO 2006 – Z-Score

Table 4.1. Classification of acute malnutrition using Weight-for-height

Classification	W/H Cut-off points
Severe acute malnutrition	$\underline{W/H} < -3$ Z-score
Moderate acute malnutrition	$\underline{W/H} < -2$ Z-score
Mild malnutrition	$\underline{W/H} -1$ to -2 Z-scores
Not malnourished	$\underline{W/H} > -1$ Z-score

Activity 4.2.3. Classification of malnutrition using MUAC – children under the age of 5 years – 20 minutes**Training Methods: Plenary discussion and Exercise (20 minutes)*****MUAC measurement for under five children***

- Review the importance of MUAC in the identification of acute malnutrition
- Present the cut-off points on a flip chart based on the table given below helpful in classifying malnutrition ask participants to classify nutritional status using the algorithm chart
- Answer questions if any

Table 4.2. MUAC Cut-off points for Children 6m – 5 yrs

MUAC Cut-off points	Classification
6- 59 months: <11 cm	Severe Acute Malnutrition
6- 59 months: 11 – 12 cm	Moderate Acute Malnutrition
6- 59 months: >12 cm	Not malnourished

Handout 12: Classification of acute malnutrition for children**MUAC Cut-off points for Children 6m – 5 yrs**

MUAC Cut-off points	Classification
6- 59 months: <11 cm	Severe Acute Malnutrition
6- 59 months: 11 – 12 cm	Moderate Acute Malnutrition
6- 59 months: >12 cm	Not malnourished

Classification of acute malnutrition using Weight-for-height

Classification	W/H Cut-off points
Severe acute malnutrition	<u>W/H</u> < - 3 Z-score
Moderate acute malnutrition	<u>W/H</u> < -2 Z-score
Mild malnutrition	<u>W/H</u> -1 to -2 Z-scores
Not malnourished	<u>W/H</u> > -1 Z-score

Activity 4.2.4 Additional criteria used in classifying malnutrition in children in the context of HIV/AIDS – 15 minutes**Training Methods: Plenary discussion and Exercise (15 minutes)**

- On a flip chart present additional criteria used to classify nutritional status such as signs and symptoms and weight loss as mentioned below
- Ask participants for any questions and summarize by using the information given below their responses on a flip chart
- Ask participants to review the algorithm wall chart under “look and feel” column and help them understand how the information could be used to classify nutritional status
- Answer questions if any

Information for Facilitators

In addition to determining clinical outcome, complications, age, and severity of malnutrition also indicate in what set-up the client should get nutritional intervention, as an inpatient or outpatient setting.

Severely or moderately malnourished PLHIV who has any one of the following need in-patient care:

- Any one of the danger signs/ medical complications are present
 - High fever >39°C Axillary Temperature
 - Hypothermia < 35°C Axillary Temperature
 - Convulsion/fitting
 - Persistent diarrhoea

- Bilateral oedema (+++)
 - Severe dehydration
 - Severe anaemia (paleness, palm pallor)
 - Very weak/lethargy
 - Extensive skin lesions
 - Pneumonia, active TB, any chest in-drawing
- OR
- Infant < 6 months
 - Severe bilateral oedema (+++)
- OR
- Marasmus – Kwashiorkor (W/H < 70 %with oedema or MUAC < 11 cm with oedema)

Activity 4.2.5. Classifying nutritional status for those aged 5- 19 yrs – 30 minutes

Activity 4.2.5..1 Classification of Nutritional Status – Children 5 – 19 years old using MUAC- 15 minutes

Training Methods: Plenary discussion and Exercise (15 minutes)

MUAC- age 5 – 14 Years

- Review the importance of MUAC in the identification of malnutrition in children between the ages of 5 – 14 years
- Introduce MUAC the cut-off points for the age group 5 – 14 years on a flip chart based on the table given below
- Explain and show to participants how to classify nutritional with the MUAC values using the algorithm chart
- Answer questions if any

Table 4.3. MUAC Cut-off points for children age 5 – 14 years

Age	MUAC Level	Classification
5-9 years:	<12.9 cm	Severe Malnutrition
10-14 years:	<16 cm	
5-9 years:	<14 cm	Moderate Malnutrition
10-14 years	<18.0 cm	
5-9 years:	>14 cm	Normal

10-14 years:	>18 cm
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Activity 4.2.5.2. Classification of Nutritional Status – Children 5 – 19 years old using BMI for Age - 15 minute)

Training Methods: Plenary discussion and Exercise (15 minutes)

BMI for Age 5 – 19 Years

- Review the use of BMI for Age in the identification of malnutrition in children between the ages of 5 – 19 years
- Introduce BMI for Age cut-off points for the age group 5 – 19 years on a flip chart based on the table given below
- Ask participants to look at the BMI- for – age charts and check previously calculated values to classify nutritional status.
- Ask participants for any problems in using the charts and give explanations as needed
- Explain and show to participants how to classify nutritional with the MUAC values using the algorithm chart
- Ask participants to refer to **Handout 13: Classification of malnutrition in older children and adolescents**
- Answer questions if any

Table 4.4. Classification of Nutritional Status for children 5-19 years using BMI-for-age

BMI –for –Age	Nutritional Status
< -3 SD	Severely malnourished
-2 to -3 SD	Moderately malnourished
-1 to -2 SD	Mildly malnourished
> -1 SD	Normal weight

Source: WHO 2007

Handout 13: Classification of malnutrition in older children and adolescents**MUAC Cut-off points for children age 5 – 14 years**

Age	MUAC Level	Classification
5-9 years:	<12.9 cm	Severe Malnutrition
10-14 years:	<16 cm	
5-9 years:	<14 cm	Moderate Malnutrition
10-14 years	<18.0 cm	
5-9 years:	>14 cm	Normal
10-14 years:	>18 cm	

Classification of Nutritional Status for children 5-19 years using BMI-for-age

BMI –for –Age	Nutritional Status
< -3 SD	Severely malnourished
-2 to -3 SD	Moderately malnourished
-1 to -2 SD	Mildly malnourished
> -1 SD	Normal weight

Source: WHO 2007

Activity 4.2.6 Classification of Nutritional status – Adults – 40 minutes

Activity 4.2.6.1 Classification of adult nutritional status using BMI and MUAC

Training Methods: Presentation and Practice (40 minutes)

- Present the summary of the classification of nutritional status using anthropometric measurement on the flip chart and discuss the cut off points for different degrees of malnutrition.
- Ask the participants to remain in their groups and to take **Handout 14 - Classification of Nutritional Status - Adults**. Explain that they will practice using this chart to determine the nutritional status of several PLHIV.

MUAC for adults, pregnant and lactating women

- Indicate that MUAC is also used to assess nutritional status of adults, pregnant and lactating women.
- Explain why MUAC is preferred over BMI for pregnant and lactating women
- Review also other conditions where MUAC is used instead of BMI
 - Pregnant and lactating women
 - Oedematous patients
 - Bed ridden and acutely sick patients
 - Individuals in whom height cannot be measured accurately
- Write the figures below on the flip chart (or black board) so that all participants can see it clearly (do not write the answers shown in parentheses). After writing each number, ask participants to look at their BMI chart and classify the client's level of malnutrition.
 - Adult with BMI of 19
 - Adult with BMI of 27.5
 - Adult with BMI of 16.5
 - Adult with MUAC of 23 cm
 - Adult with MUAC of 17 cm
- Support participants on how to calculate and interpret BMI using the BMI look up chart, emphasizing areas that need strengthening.
- Ask participants how to classify nutritional with the MUAC and BMI values using the algorithm chart
- Answer questions if any

Information for Facilitators**Classification of Nutritional Status for Adults*****Severe Malnutrition***

Adults

- BMI <16 (non-pregnant/non post-partum)
- MUAC <18.0 cm (MUAC should be used for pregnant/post-partum women and for other adults whose height cannot be measured (e.g., cannot stand). BMI should be used to classify all other adults in clinical facilities.)

Moderate Malnutrition

Adults

- BMI 16–17.99 (non-pregnant/non-post-partum)
- MUAC < 18.0–21.0 cm (MUAC should be used for pregnant/post-partum women and for other adults whose height cannot be measured (e.g., cannot stand). BMI should be used to classify all other adults in clinical facilities)

Mild Malnutrition

Adults (non-pregnant/post-partum)

- BMI 18–18.49

Normal

Adults

- BMI >18.5
- MUAC >21.0 cm

Table 4.5. Summary table for BMI and MUAC cut offs

A) BMI

Adult BMI level	Nutritional Status
< 16 kg/m ²	Severely malnourished
16 -16.99 kg/m ²	Moderately malnourished
17 - 18.49 kg/m ²	Mildly malnourished
18.5 - 24.99 kg/m ²	Normal weight
25 - 29.99 kg/m ²	Overweight
> 30 kg/m ²	Obese

Source: WHO 1995

B) MUAC for adults non pregnant/lactating

Cut off	Nutritional Status
< 18.0 cm	Severely malnourished
18- 21 cm	Moderately malnourished
>21 cm	Normal

Handout 14: Classification of Nutritional Status - Adults***Severe Malnutrition***

Adults

- BMI <16 (non-pregnant/non post-partum)
- MUAC <18.0 cm (MUAC should be used for pregnant/post-partum women and for other adults whose height cannot be measured (e.g., cannot stand). BMI should be used to classify all other adults in clinical facilities.)

Moderate Malnutrition

Adults

- BMI 16–17.99 (non-pregnant/non-post-partum)
- MUAC < 18.0–21.0 cm (MUAC should be used for pregnant/post-partum women and for other adults whose height cannot be measured (e.g., cannot stand). BMI should be used to classify all other adults in clinical facilities)
- MUAC 19 -21 cm pregnant/lactating within 6 month

Mild Malnutrition

Adults (non-pregnant/post-partum)

- BMI 18–18.49

Normal

Adults

- BMI >18.5
- MUAC >21.0 cm
- MUAC > 22 cm pregnant/lactating within 6 month

Activity 4.2.7. Additional criteria used for classification of nutritional status in the context of HIV infection in adults - 15minutes

Training Method: Presentation and Discussion (15minutes)

- Present additional criteria that can be used to classify nutritional status by using clinical data such as key signs and symptoms of diseases including weight loss as using the information mentioned below.
- Ask participants to discuss the importance of using additional criteria to classify nutritional status and write their responses on a flip chart
- Summarize the discussion based on the information provided below.
- Ask participants to review the algorithm wall chart under “look and feel” column and help them understand how the information could be used to classify nutritional status
- Answer questions if any

Information for Facilitators

Signs of Symptomatic Diseases

Signs of symptomatic diseases do not directly determine the malnutrition classification, but they relate to nutrition problems that require special attention through provision of appropriate nutrition care services as the increase energy need. Major signs of symptomatic diseases include:

- Chronic lung diseases
- Persistent diarrhoea
- TB
- Fever
- Other chronic OIs and Malignancy

Chronic Lung Diseases

The common respiratory diseases among people living with HIV are opportunistic infections, which occur across the spectrum of clinical HIV infection: infection by *Streptococcus pneumonia*, *Mycobacterium tuberculosis* and *Pneumocystis*. Upper respiratory tract and lower respiratory tract infections are common, and lower respiratory tract infections are life-threatening.

Tuberculosis

M. tuberculosis is the leading cause of morbidity and mortality among PLWH worldwide. In Ethiopia the co-infection rate is 20-50 percent, creating a dual epidemic of symptomatic HIV infection and tuberculosis. Tuberculosis enhances progression of HIV infection by inducing immune activation, and HIV increases the risk of infection as well as reactivation of latent tuberculosis. Hence it is conceivable that tuberculosis can occur across the clinical spectrum of HIV infection.

Pneumonia

This can occur in immune-competent individuals but the risk increases six-fold among HIV-infected individuals. Bacterial pneumonia occurs during the whole spectrum of HIV disease, but tends to be more severe and recurrent as the CD4 count drops significantly; in addition, pneumonia can concomitantly present with sinusitis and/or bacteraemia. If not treated promptly, extra pulmonary complications like emphysema, meningitis, pericarditis, hepatitis and arthritis can follow. *Streptococcus pneumoniae* and *Haemophilus influenzae* are the most common aetiologies of community acquired pneumonia. Typically the patient presents with sudden onset of cough, sputum production, chest pain, fever and/or shortness of breath.

Persistent Diarrhoea

Diarrhoea is defined as passing more than four loose or watery stools per day for over three days. It may be acute or chronic, persistent or intermittent. Diarrhoea is among the most frequent symptoms of HIV disease. Delay in treatment can result in fluid loss and hemodynamic instability. Chronic diarrhoea may also lead to nutritional deficiencies and wasting. Diarrhoea is caused by opportunistic or pathogenic organisms, such as viruses (including HIV), bacteria, protozoa, fungi, helminths, non-infectious causes and drugs. (Diarrhoea occurs as an adverse reaction to a number of drugs).

Other Chronic OIs or Malignancy

Any chronic illness or malignancy associated with HIV needs to be identified and managed clinically. All such conditions increase nutritional demand due to the demands of the secondary infections in addition to HIV infection.

Fever

Fever is a common result of opportunistic infections in patients infected with HIV. However, causes of febrile illnesses in the general population can also be responsible. Unexplained fever occurs frequently in HIV-infected patients and in most patients with advanced immune deficiency. Unexplained chronic fever for over one month is suggestive of advanced immune deficiency state. This scenario is called “Fever of Unknown Origin” and is defined as fever over 38°C lasting more than four weeks as an outpatient or four days following patient admission, and that remains unexplained despite exhaustive clinical and laboratory evaluation.

Significant Weight loss

Weight loss does not directly determine a malnutrition classification, but it is a sign of nutrition problems that require appropriate nutritional assessment. When weight loss is reported to be unintentional and confirmed to be more than 5% of body weight since the last visit, it warrants appropriate nutrition intervention regardless of their BMI and MUAC status.

Activity 4.3. Nutrition Interventions in the context of HIV and AIDS – 1 hours 55 minutes

Purpose

In this session, participants will learn and familiarize themselves with available nutrition support services in the context of HIV/AIDS

Learning Objectives

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

- Know the specific nutrition and HIV/AIDS interventions
- Know the types of food commodities used for different types of malnutrition
- Understand the benefits of practicing critical nutrition practices

Overview

Activity 4.3.1: Types of nutrition support interventions integrated into the clinical care services for PLHIV (**30 minutes**)

Activity 4.3.2: The role that critical nutrition practices playing in addressing malnutrition in the context of HIV/AIDS (**1 hr and 2 5minutes**)

Activity 4.3.3: Session review (**5 minutes**)

Materials

- Flip charts and markers
- Masking tape
- Session 5 objectives written on a flip chart
- List of Existing Nutrition and HIV nutrition commodities/supplies on a flip chart

- Samples of food commodities approved for use in the National Nutrition and HIV/AIDS Guideline
- **Handout 15.: Nutritional Value of Plumpy Nut/92g**
- **Handout 16.: Fortified Blended Foods**

Detailed Activities

Note to Facilitators: Present an overview of the objectives of the session and the time allocated for each objective.

Activity 4.3.1. Types of nutrition support interventions integrated into the clinical care services for PLHIV – 30 minutes

Training Methods: Discussion/Presentation and Summary (30 minutes)

- Present types nutritional services provided to PLHIV
- Discuss therapeutic foods used to treat severe malnutrition
- Brainstorm the use of supplementary food in managing moderate malnutrition
- Discuss the benefits of critical nutrition practices in addressing malnutrition in the context of HIV and AIDS
- Summarize the information

Information for the facilitator

Therapeutic foods

Therapeutic foods are foods designed for specific, usually nutritional, therapeutic purposes. The common therapeutic foods currently used in the management of acute malnutrition includes Plumpy nut, BP-100, F-75 and F-100.

F-100 and F-75 formula milk

F-75 and F-100 therapeutic milk are formula milk designed for the treatment of severe acute malnutrition in in-patient set up. F-75 (75 kcal /100 ml), is used during the initial phase of treatment, while F-100 (100 kcal/100 ml) is used during the rehabilitation phase, after the appetite has returned and medical complication subsided.

These formulas can easily be prepared from the basic ingredients: dried skimmed milk, sugar, cereal flour, oil, mineral mix and vitamin mix (see Table 7). They are also commercially available as powder formulations that are mixed with water.

Table 4.6. Composition of F -75 and F – 100 diets

Composition of F-75 and F-100 diets		
Constituent	Amount per 100 ml	
	F-75	F-100
Energy	75 kcal _{th} (315 kJ)	100 kcal _{th} (420 kJ)
Protein	0.9 g	2.9 g
Lactose	1.3 g	4.2 g
Potassium	3.6 mmol	5.9 mmol
Sodium	0.6 mmol	1.9 mmol
Magnesium	0.43 mmol	0.73 mmol
Zinc	2.0 mg	2.3 mg
Copper	0.25 mg	0.25 mg
Percentage of energy from:		
protein	5%	12%
fat	32%	53%
Osmolarity	333 mOsmol/l	419 mOsmol/l

Plumpy Nut

Plumpy 'nut is an energy dense, fortified, ready to use therapeutic food designed for the treatment of acute malnutrition in children and adults in during the rehabilitation phase in therapeutic feeding centers or at home. The plumpy nut nutritional specification is close to that of F100 therapeutic milk, except that plumpy nut contains iron.

Plumpy Nut contains vitamins A, B-complex, C, D, E, and K, and minerals calcium, phosphorus, potassium, magnesium, zinc, copper, iron, iodine, sodium, and selenium. See table below for detail micronutrient content.

Handout 15: Nutritional Value of Plumpy Nut/92g

- Energy 545 kcal/100 g (500 kcal/92g)
- Protein 13.6 g/ 100g
- Fat 35.7 g/100g

Nutritional facts of Plumpy Nut		
Nutrient	Unit	Nutrients per 100g
Vitamin A	mg re	0.95
Vitamin B1 (thiamine)	Mg	0.5

Vitamin B2 (riboflavin)	Mg	0.6
Niacin (B3)	mg NE	5.0
Vitamin B6	Mg	0.6
Vitamin B12	Mg	0.0016
Folate	mg DFE	0.034
Vitamin C	Mg	50.00
Vitamin D	mg α -TE	0.0175
Vitamin E	Mg	20.00
Vitamin K	Mg	0.0225
Iodine	Mg	0.1050
Copper ²	Mg	1.6
Iron	Mg	12.00
Zinc	Mg	12.5
Phosphorus ²	Mg	450.0
Magnesium	Mg	110.0
Calcium	Mg	450.0
Potassium ²	Mg	1250.0
Selenium	Mg	00.025
Sodium ²	Mg	290.0

This product is semi solid, oil based and easy to eat for young children without any preparation. It is safe to store it in a dry place at room temperature and has a 2 year shelf life.

- Plumpy nut does not contain water and is therefore resistant to any bacterial contamination. So, opened packets of plumpy nut can be kept safely and eaten at a later time – the other family members should not eat any that is left over at a particular meal.
- Clients with moderate appetites and eat slowly can be provided with small regular meals of RUTF to eat as often as possible (every 3 to 4 hours)
- For breast-fed children, **always** give breast milk before the RUTF
- Always offer plenty of clean water to drink while eating RUTF
- This product should not be used for normal feeding, neither for patients below 6 months of age.

Handout 16: Fortified Blended Food (FBF)

Fortified blended food is supplementary food designed for the treatment of acute moderate malnutrition. FBF is fortified with essential micronutrients and pre-cooked flour but not instant product; it is designed to be cooked/fried or baked to complete their digestibility.

FBF is prepared from Maize (57.00%), Soy Beans (24.40%), Sugar (5.00%), Vegetable Oil (5.00%), Skim Milk Powder (8.00%), Premix (0.10%), Calcium Carbonate (0.30%),

Potassium Chloride (0.10%), Sodium Chloride (0.10%). See table below for detail micronutrient content.

They should be stored in a well-ventilated, cool, dry place. If FBF is stored beyond its date of expiry, loss of vitamins and minerals may occur.

Activity 4.3.2. Critical nutrition practices in management of malnutrition in the context of HIV/AIDS – 1 hr and 25 minutes

Purpose

In this session, participants will identify seven critical nutrition practices (CNP) and corresponding messages for improving and maintaining good nutrition among PLHIV.

Learning Objectives

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

- Identify seven critical nutrition practices for PLHIV.
- Identify key messages to communicate the critical nutrition practices for PLHIV.

Overview

Sub activity 4.3.2.1 Critical nutrition practices for PLHIV (**40 minutes**)

Sub activity 4.3.2.2 Key messages for communicating the critical nutrition practices for PLHIV (**40 minutes**)

Sub activity 4.3.2.3 Session review (**5 minutes**)

Materials

- Flip charts and markers
- Masking tape
- Session 3 objectives written on a flip chart
- Flip chart with a list of the seven CNP for PLHIV
- Twelve sets of seven yellow cards, each labelled with one of the seven CNP for PLHIV, cut into halves.
- Five sets of seven yellow cards, each labelled with one of the seven CNP for PLHIV
- Twelve sets of seven blue cards with messages to support the CNP
- Twelve sets of seven orange cards with reasons for the messages
- **Handout 17: Critical Nutrition Practices for PLHIV**
- **Handout 18: Managing Symptoms Associated with HIV in Adults**

Note to Facilitators: Present an overview of the objectives of the session and the time allocated for each objective.

Activity 4.3.2.1 Critical Nutrition Practices for PLHIV - 40 minutes

Training Methods: Demonstration and Presentation (40 minutes)

- Brainstorm on critical nutrition behaviours.
- Show participants the critical nutrition practice cards.
- Explain the meaning of the practices.
- Demonstrate on use of cards
- Divide participants into groups to practice
- Discuss and summarize the information.

Information for Facilitators

Critical Nutrition Practices for PLHIV

- 1. See a health care provider for periodic nutrition assessments (especially weight).**
 - Periodic weight helps you track the trend of weight change and take action early.
 - Unintentional weight loss or gain may imply poor health and lead to hospitalization.
 - Unintentional weight loss of more than 6 kg in 2–3 months indicates that your health or eating habits are not adequate to maintain your weight or that the disease is fast progressing to AIDS.

- 2. Increase energy intake by eating a variety of foods, especially energy- rich foods, and eating more often, especially if sick.**
 - People with HIV need to consume more energy every day than uninfected people of the same age, gender, and level of physical activity.
 - Eating a balanced diet ensures that your body gets all the nutrients required.
 - HIV infection affects digestion and absorption.
 - Increasing energy intake helps you get enough energy and other nutrients (proteins and micronutrients) that your body needs.
 - Fruits and vegetables help strengthen immunity.

- 3. Drink plenty of clean and safe (boiled or treated) water.**
 - The body needs water to remove the toxins caused by HIV or antiretroviral medications.

- Drink only clean, treated water to prevent infections such as diarrhoea.

4. Maintain a healthy lifestyle by avoiding alcohol, tobacco, sodas, and other coloured and sweetened drinks, and do physical activity (get exercise).

- Practicing safer sex avoids infection and transmission of other sexually transmitted infections.
- Alcohol interferes with digestion, absorption, storage, and utilization of food.
- Smoking interferes with appetite and increases your risk of cancer and respiratory infections, particularly tuberculosis.
- Most sweetened, coloured drinks sold in shops contain water, sugar, food colour and artificial flavour — they are not fruit juice. Junk foods have little nutrition value and can even harm our health, so try to avoid eating them.

5. Maintain high levels of hygiene and sanitation.

- People with HIV can easily get infections. These can make you feel weak, vomit, have diarrhoea, and lose your appetite.
- Diarrhoea affects digestion or absorption of food and sheds essential nutrients from your body.

6. Seek early treatment for infections and advice on managing some symptoms through diet.

- Illnesses affect the body's intake, digestion, absorption, and use of food. Late treatment of illnesses affects your nutritional status.
- Always seek advice from a health professional concerning use of nutrition supplements.
- Be aware of the aggressive advertising of some nutrition supplements which may have false claims.
- Nutrition supplements should not replace food and do not treat HIV.

7. Manage food and drug interactions and side effects.

- Not following your drug and food schedule may affect the effectiveness of the drugs or produce side effects that can affect your health or nutrition.
- Not adhering to prescribed drug regimens may make your body resistant to the drugs, making them less effective and possibly requiring you to change to stronger drugs.

Activity 4.3.2.2 Key Messages for Communicating Critical Nutrition Practices for PLHIV- 40 minutes

Training Methods: Small Working Groups (40 minutes)

- Divide participants into groups of four, preferably from the same workplace. Ask them to remember these groups for future exercises during the training
- Give each group a set of two cards with a critical nutrition practice (CNP) written on each one.
- Then give each group a set of two cards with the corresponding messages to support the CNP written on each one and two blank cards to write the reasons for the messages written on each one.
- Ask the groups to match the supporting messages and the reasons to the appropriate CNP. Give them a time limit of 15 minutes.
- Point out that a good message addresses: 1) a benefit of behaviour or a barrier to implementing the behaviour; and 2) the reason for the recommended behaviour.
- Walk from group to group to provide support where needed.
- In the full group, ask each group of four to present one message and one explanation that matches one CNP. Continue until all the CNPs have been presented.
- Ask other groups to add comments.
- Discuss and fill in gaps.
- Ask participants to refer to a copy of **Handout 17: Critical Nutrition Practices for PLHIV and Handout18: Managing Symptoms Associated with HIV in Adults.**

Sub activity 4.3.2. 3 Session Review - 5 minutes**Training Methods: Review Energizer (5 minutes)**

- Form a circle with participants.
- Throw a ball to one participant and ask him/her a question pertaining to a critical nutrition practice (CNP), supporting message, and/or explanation.
- When the participant has answered correctly to the satisfaction of the group, ask him/her to throw the ball to another participant, asking another question pertaining to a CNP, supporting message, and/or explanation.
- The participant who throws the ball asks the question. The participant who catches the ball answers the question.

Handout 17: Critical Nutrition Practices for PLHIV

Key Message	Explanation
1. See a health care provider for a periodic nutrition assessment (especially weight).	
<ul style="list-style-type: none"> ▪ If you have symptoms related to HIV, get weighed every month by a health care provider. ▪ If you are not showing symptoms associated with HIV, get weighed at least every 3 months. ▪ Keep a record of your weight in a book or on a weight chart. ▪ Seek clinical care if you unintentionally lose more than 6 kg of weight in 2 or 3 months. 	<ul style="list-style-type: none"> ▪ Periodic weight helps you track the trend of weight change and take action early. ▪ Unintentional weight loss or gain may imply poor health and lead to hospitalization. ▪ Unintentional weight loss of more than 6 kg in 2–3 months indicates that your health or eating habits are not adequate to maintain your weight or that the disease is fast progressing to AIDS.
2. Increase energy intake by eating a variety of foods, especially energy-rich foods, and eating more frequent meals, especially if sick.	
<ul style="list-style-type: none"> ▪ Eat locally available and affordable foods from each food group for varied meals and to increase energy intake. ▪ Eat five times a day (three meals and two snacks in a day). ▪ Eat at least two cups of food (70 ml each) at each meal. ▪ Eat foods from the different food types at each meal. 	<ul style="list-style-type: none"> ▪ People with HIV need to consume more energy every day than uninfected people of the same age, gender, and level of physical activity. ▪ The extra energy needed is based on the stage of the HIV illnesses. ▪ Eating a varied diet ensures that your body gets all the nutrients required. ▪ HIV infection affects digestion and absorption. ▪ Increasing energy intake helps you get

	<p>enough energy and other nutrients (proteins and micronutrients) that your body needs.</p> <ul style="list-style-type: none"> ▪ Fruits and vegetables help to strengthen immunity.
<ul style="list-style-type: none"> ▪ Enrich meals with energy-dense foods such as groundnut paste, oil/fat, sugar or honey, or milk powder. ▪ If your weight falls below normal, eat supplementary foods that are high in energy, protein, and micronutrients, such as corn-soy blend, where they are available and affordable. ▪ If you have lost a lot of weight (look wasted), seek clinical support from a health facility that offers antiretroviral therapy (ART). ▪ Caregivers: Practice “active support” (prepare and/or feed) when the client has no appetite or is not eating enough. 	<ul style="list-style-type: none"> ▪ Most staple foods are low in energy and nutrient density and therefore need enrichment or fortification. ▪ Severe weight loss requires medical care. The clinical staff may have to admit you or provide you with special foods to treat the malnutrition.
3. Maintain high levels of hygiene and sanitation.	
<ul style="list-style-type: none"> ▪ Wash your hands with flowing water and soap after using the toilet and before handling and preparing food to avoid infection. ▪ Be careful when buying ready-to-eat foods because they may be contaminated from being prepared or handled in unhygienic environments. 	<ul style="list-style-type: none"> ▪ People with HIV can easily get infections. These can make you feel weak, vomit, have diarrhoea, and lose your appetite. ▪ Diarrhoea affects digestion or absorption of food and sheds essential nutrients from your body.
4. Drink plenty of clean and safe (boiled or treated) water.	
<ul style="list-style-type: none"> ▪ Drink plenty of clean safe water; about eight glasses per day. ▪ Boil or treat drinking water. ▪ Have enough clean safe drinking water in the home at all times for drinking, making juice, and taking medicine. 	<ul style="list-style-type: none"> ▪ The body needs water to remove the toxins caused by HIV or the antiretroviral medications. ▪ Drink only clean, treated water to prevent infections such as diarrhoea.
5. Maintain a healthy lifestyle by avoiding unprotected sex, alcohol, tobacco, sodas, and other coloured and sweetened drinks and do physical activity (exercise)	
<ul style="list-style-type: none"> ▪ Practice safer sex, using condoms. ▪ Avoid alcohol, especially if you are taking medicines. 	<ul style="list-style-type: none"> ▪ Practicing safer sex avoids infection and transmission of other sexually transmitted infections.

<ul style="list-style-type: none"> ▪ Avoid smoking cigarettes and taking drugs without prescription. ▪ Limit your intake of junk food such as chips, sodas, and sugary foods such as cakes and candies. ▪ Seek help at the nearest health facility to manage depression and stress. ▪ Get enough rest. ▪ If possible, exercise regularly by doing household chores, walking or running 	<ul style="list-style-type: none"> ▪ Alcohol interferes with digestion, absorption, storage, and utilization of food. ▪ Smoking interferes with appetite and increases your risk of cancer and respiratory infections, particularly tuberculosis. ▪ Most sweetened, coloured drinks sold in shops contain water, sugar, food colour and artificial flavour — they are not fruit juice. Junk foods have little nutrition value and can even harm your health so try to avoid eating them. ▪ Stress and depression may interfere with your appetite and hence reduce food intake. ▪ Inadequate sleep may result in more fatigue and a feeling of ill health that affects appetite and strength. Regular exercise is necessary to strengthen and build muscle, improve appetite, manage stress, and improve overall health and alertness.
<p>6. Seek early treatment for infections and manage symptoms through diet.</p>	
<ul style="list-style-type: none"> ▪ Seek immediate clinical help for management of illness. ▪ Inform the health care provider of any traditional remedies or nutrition supplements you are taking. ▪ Manage symptoms with dietary practices at home where possible. <p>Also refer to Handout 18: Managing Symptoms Associated with HIV in Adults.</p>	<ul style="list-style-type: none"> ▪ Illnesses affect the body's intake, digestion, absorption, and use of food. Late treatment of illnesses affects your nutritional status. ▪ Always seek advice from a health professional concerning use of nutrition supplements. ▪ Be aware of the aggressive advertising of some nutrition supplements that may have false claims. ▪ Nutrition supplements should not replace food and do not treat HIV. ▪ Some traditional herbs may affect the way other drugs act in the body and can make the drugs ineffective or produce side effects. ▪ Dietary management can help manage certain symptoms, reduce their severity, and enable continued food consumption.

7. Take medicines as advised by the health worker and manage food and drug interactions or side effects.	
<ul style="list-style-type: none"> ▪ Take all medicines as advised by the health worker. ▪ Work with a health care provider or counsellor to make and maintain a drug-food schedule to help you plan times to take your medicines in relation to meals. Ask someone to help you keep the schedule. ▪ Ask about the side effects that are likely to result from drugs. ▪ Ask how you can manage drug side effects at home. ▪ Always adhere to the drug regimen given by health care providers. 	<ul style="list-style-type: none"> ▪ Not following your drug and food schedule may affect the effectiveness of the drugs or produce side effects that can affect your health or nutrition status. ▪ Not adhering to prescribed drug regimens may make your body resistant to the drugs, making them less effective and possibly requiring you to change to stronger drugs.

Handout 18: Managing Symptoms Associated with HIV in Adults

(Adapted from FANTA 2001, Pronsky et al. 2001, Nerad 2003, Castleman et al. 2004, and WHO 2003.)

Illness	Diet	Care and Nutrition Practices
Anorexia (appetite loss)	<ul style="list-style-type: none"> ▪ Try to stimulate appetite by eating favourite foods. ▪ Eat small amounts of food more often. ▪ Select foods that are more energy dense. ▪ Avoid strong-smelling foods. 	<ul style="list-style-type: none"> ▪ If appetite loss is a result of illness, seek medical attention for treatment.
Diarrhoea	<ul style="list-style-type: none"> ▪ Drink lots of fluids (soups, diluted fruit juices, boiled water, and tea) to avoid dehydration. ▪ Avoid strong citrus fruits (orange, lemon) because they may irritate the stomach. ▪ Consume foods rich in soluble fibre (millet, banana, peas, and lentils) to help retain fluids. ▪ Consume fermented foods (porridges, yogurt). ▪ Consume easily digestible foods (rice, bread, millet, maize porridge, potato, sweet potato, crackers). ▪ Eat small amounts of food frequently and continue to eat after illness to recover weight and nutrient loss. ▪ Eat soft fruits and vegetables (bananas, squash, cooked and mashed green bananas, mashed sweet potato, and mashed carrots). ▪ Eat eggs, chicken, or fish for protein. ▪ Drink nonfat milk if there is no problem with lactose. ▪ Boil or steam foods. ▪ <i>Avoid or reduce intake of these foods:</i> ▪ Some dairy products such as milk 	<p><u>Prevention</u></p> <ul style="list-style-type: none"> ▪ Drink plenty of clean boiled water. ▪ Wash hands with soap and water before handling, preparing, serving, or storing foods. ▪ Wash hands with soap and water after using a toilet or latrine or cleaning a child after defecation. <p><u>Treatment</u></p> <ul style="list-style-type: none"> ▪ Drink more fluids to prevent dehydration. Prepare rehydration solutions using oral rehydration salt packets or a home-made solution of 1 litre of boiled water, 4 teaspoons of sugar, and 1/2 teaspoon of iodized salt. ▪ Go to a health centre if symptoms such as severe dehydration (low or no urine output), fainting, dizziness, shortness of breath, bloody stools,

Illness	Diet	Care and Nutrition Practices
	<ul style="list-style-type: none"> ▪ Caffeine (coffee and teas) and alcohol ▪ Fatty foods ▪ Fried foods and extra oil, lard, or butter ▪ Gas-forming food (cabbage, onions, carbonated soft drinks) 	<p>high fever, vomiting, severe abdominal pain, or diarrhoea) persist for more than three days.</p>
Fever	<ul style="list-style-type: none"> ▪ Eat soups rich in foods that give energy and nutrients (maize, potatoes, and carrots). ▪ Drink plenty of liquids. ▪ Drink teas from lemon, guava, and gum tree. ▪ Drink more than usual, beyond thirst. ▪ Continue to eat small, frequent meals as tolerated. 	<ul style="list-style-type: none"> ▪ Drink fluids to prevent dehydration, particularly clean boiled water. ▪ Bathe in cool water. ▪ Rest. ▪ Take two aspirin or Panadol, if available, with meals three times a day. ▪ Go to the health centre in case of: <ul style="list-style-type: none"> – Fever lasting several days and not relieved with aspirin – Loss of consciousness – Severe body pain – Yellow eyes – Severe diarrhoea – Convulsion/seizure
Nausea and vomiting	<ul style="list-style-type: none"> ▪ Eat small and frequent meals. ▪ Eat foods such as soups, unsweetened porridge, and fruits such as bananas. ▪ Eat lightly salty and dry foods (e.g., crackers) to calm the stomach. ▪ Drink herbal teas and lemon juice in hot water. ▪ Avoid spicy and fatty foods. ▪ Avoid caffeine (coffee/tea) and alcohol. ▪ Drink liquids such as clean boiled water. 	<ul style="list-style-type: none"> ▪ Avoid an empty stomach; nausea is worse if nothing is in the stomach. ▪ Avoid lying down immediately after eating; wait at least 20 minutes to avoid vomiting. ▪ Rest between meals.
Thrush	<ul style="list-style-type: none"> ▪ Eat soft, mashed foods (carrots, scrambled eggs, mashed potatoes, bananas, soups, porridge). ▪ Eat cold or room-temperature foods. ▪ Avoid spicy, salty, or sticky foods; these may irritate mouth sores. ▪ Avoid sugary foods; these cause yeast to grow. ▪ Avoid strong citrus fruits and juices that may irritate mouth sores. ▪ Avoid alcohol. ▪ Drink plenty of liquids. 	<ul style="list-style-type: none"> ▪ Seek medical attention for treatment. ▪ If a spoon or cup is available, use it to eat small amounts of foods. ▪ Tilt head back when eating to help with swallowing. ▪ Rinse mouth with boiled warm salt water after eating to reduce irritation and keep infected areas clean so yeast cannot grow.
Anaemia	<ul style="list-style-type: none"> ▪ Eat more iron-rich foods (eggs, fish, meat, and liver), green leafy vegetables (collard greens, spinach), legumes (beans, lentils, groundnuts), nuts, oil seeds, and fortified cereals. ▪ Take iron supplements. 	<ul style="list-style-type: none"> ▪ If available, take one iron tablet a day with food. Take with vitamin C (tomatoes, orange juice) to help with absorption. ▪ Drink fluids to avoid constipation. ▪ Treat malaria and hookworm.
Muscle wasting	<ul style="list-style-type: none"> ▪ Increase food intake by increasing quantity of food and frequency of consumption. ▪ Improve quality and quantity of foods by providing a variety of foods. ▪ Increase energy foods in cereals and other staples. ▪ Eat small, frequent meals. 	<ul style="list-style-type: none"> ▪ Do regular weight-bearing exercise to build muscles.
Constipation	<ul style="list-style-type: none"> ▪ Eat foods that are high in fibre (maize, whole-wheat bread, green vegetables, washed fruits with the peel). 	<ul style="list-style-type: none"> ▪ Avoid using intestinal cleansing practices (e.g., enemas and

Illness	Diet	Care and Nutrition Practices
	<ul style="list-style-type: none"> ▪ Drink plenty of liquids. ▪ Avoid processed or refined foods. 	<p>medications).</p> <ul style="list-style-type: none"> ▪ Drink plenty of fluids, including boiled water.
Bloating or Heartburn	<ul style="list-style-type: none"> ▪ Eat small, frequent meals. ▪ Avoid gas-forming foods (cabbage, soda). ▪ Drink plenty of fluids. 	<ul style="list-style-type: none"> ▪ Eat long enough before sleeping so food can digest.
Tuberculosis	<ul style="list-style-type: none"> ▪ Consume foods high in protein, energy, iron, and vitamins. 	<ul style="list-style-type: none"> ▪ Seek medical attention immediately. ▪ Consult medical personnel about taking food with medications. ▪ If taking Isoniazid for treatment, take a vitamin B6 supplement to avoid a deficiency.
Loss of taste or abnormal taste	<ul style="list-style-type: none"> ▪ Use flavour enhancers (salt, spices, herbs, and lemon). ▪ Chew food well and move it around in mouth to stimulate receptors. 	

Activity 4.4: Nutrition Care Plans for Management of Malnutrition in PLHIV – 8 hrs

Purpose

In this session, participants will learn provide nutritional care for PLHIV and OVC with different degree of nutritional status in outpatient and in-patient care according to the national nutrition and HIV guideline.

Objectives

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

- Know the details of the different Nutrition Care Plans
- Know the criteria of transition from one Care Plan to other based on the outcomes of the nutritional support services

Overview

Activities

Activity 4.4.1. Nutrition Care Plan A: For Adults Classified with Severe Malnutrition (**1 hour**)

Activity 4.4.2. Daily Evaluation

Activity 4.4.3. Nutrition Care Plan B for Adults (**40 minutes**)

Activity 4.4.4. Nutrition Care Plan C for Adults (**40 minutes**)

Activity 4.4.5. Nutritional Care Plan A for Children (**1hr**)

Activity 4.4.6. Nutritional Care Plan B for Children (**40 minutes**)

Activity 4.4.7. Nutritional Care Plan C for Children (**40 minutes**)

Activity 4.4.8. Nutritional Care for PLHIV on ART (**40 minutes**)

Activity 4.4.9. Daily evaluation

Activity 4.4.10. Field Practice (**2hrs and 40 minutes**)

Materials

Flip charts and markers

Masking Tape

Session objectives written on a flip chart

Handout 11b: Clinical Algorithm for Managing Malnutrition in PLHIV - Adults

Handout 19: Nutrition Care Plan A – Adults

Handout 20: Nutrition Care Plan B – Adults

Handout 21: Nutrition Care Plan C - Adults.

Handout 11 a: Clinical Algorithm for Management of Malnutrition in PLHIV – Children

Handout 22: Case Study

Handout 23: Nutrition Care Plan A - Children.

Handout 24: Nutrition Care Plan B – Children

Handout 25: Nutrition Care Plan C - Children

Handout 26: Drugs Commonly Taken by PLHIV, Likely Side Effects, and Recommended Dietary Practices to Increase Drug Efficacy

Activity 4.4.1. Nutrition Care Plan A: For Adults Classified with Severe Malnutrition - 1 hour

Training Methods: Presentation (1hr)

- Ask participants to read through **Handout 19: Nutrition Care Plan A - Adults.**
- Review in detail the clinical protocol and summarize on the flip chart using the information below.
- Explain that the participants will use the care plan to counsel and manage severe malnutrition.

Information for Facilitators

Key message. Nutritional needs of PLHIV vary according to age (for children), stage of disease, presence of acute and/or chronic infections such as persistent diarrhoea or OIs, and drug treatment given.

Key message. Implementing a nutrition care plan starts with understanding what the client presently eats and drinks—type of food, how it is prepared, and amount and frequency. Nutritional needs are best met through **varied diets** in adequate quantities. When these are not available or demands are high, additional support may be needed through supplementary foods.

Key message. All people need regular, adequate and appropriate foods in order to grow, develop and maintain optimal body function. Nutrition is not just food but also includes the quantity of the food, how it is prepared and eaten, and how the body uses it. Food needs may be met either by improving diet based on foods available in the home (food-based approach) or through nutrition supplementation provided by a service or program.

Key message. Sick PLHIV should be fed with care and patience. The health care provider should understand who the main caregivers are and who else is involved with feeding and care. This helps the health care provider understand the quality and consistency of care practices. If the caregiver and environment are not stable, the client may need extra support (e.g., social support, child protection, or help from other community resources).

Nutrition care plans are interventions determined based on PLHIV clients' nutritional status and health conditions that affect nutritional needs and absorption/utilization. There are three nutrition care plans for treatment of malnutrition in PLHIV: Nutrition Care Plan A, Nutrition Care Plan B, and Nutrition Care Plan C.

Management of Severely Malnourished Adults

Nutrition Care Plan A for Adults

Inpatient Management

1. Manage Danger signs
2. Prevent and Manage Medical complications as indicated
3. Start therapeutic feeding according to the national SAM guidelines as follows:
 - **Phase 1** -
 - Give F-75 only (amount strictly based on weight). F75 is used during this phase to promote recovery of normal metabolic function and nutrition-electrolyte balance.
 - Weight gain is dangerous at this stage; that is why F75 is formulated.
 - Provide routine medications as per the national guideline (review routine medications in the annex)
 - Monitor progress
 - Transit to Transition Phase when appetite returns and edema starts to subside, medical complications resolved, no IV line or NGT required
 - **Transition Phase**- Helps for recovery of metabolic function.
 - Give F-100/RUTF based on weight
 - At the same time start giving RUTF gradually until the patient takes 3 – 4 sachets daily
 - Monitor weight gain (shall not exceed 6g/kg/day)
 - Continue the routine medications
 - Monitor clinical progress
 - Transit to Phase 2/OTP when the adult consumes 90% of the recommended daily intake and edema is significantly decreased (from ++ to +)
 - **Phase 2** – aims to promote rapid weight gain
 - Inpatient management with RUTF and FBF:
 - Unacceptable home circumstances.
 - OTP is preferred unless the above conditions exist
 - During OTP use RUTF – (3sachets of Plumpynut, 500kcal per sachet) and FBF (400gm, 400kcal per 100gm) and demonstrate **how to use RUTF and FBF** and give enough supplies to last to the next return date.
 - Continue giving routine medications/supplementation as per the national guideline
 - Ensure that weight gain is not due to fluid accumulation.

Follow-up Visit

- Follow up every month
- **Ask** if the patient finished the RUTF and FBF given in the last visit. Ask if there is any complaint for example diarrhoea, vomiting, fever, or any other complaint.
- **Asses** for any danger-signs and medical complications
- Perform appetite-test-every visit
- Take anthropometric measurement and record
 - Weight-every visit
 - Oedema-every visit
 - Standard clinical sign (vital sign)-every visit
 - MUAC-every visit
 - BMI quarterly
- If they are not gaining weight, have worsening oedema, or have been losing significant weight for more than two months, and failure to pass appetite test at any visit, consider further investigation and treatment according to the national protocol.

Table 4.6. Therapeutic Food Ration for Adult and Adolescents (>14 years)

Nutrition Care Plan A Out Patient		
Adult	Plumpy Nut per day	FBF
When there is Plumpy Nut only	4 sachets	0

4. Counsel on key messages:

- Need for periodic weight monitoring
- How to increase energy density of diets at home
- How to manage key symptoms through diet modification (especially, nausea, loss of appetite, diarrhoea, mouth sores/rash)
- Any possible drug-food interactions
- Sanitation and hygiene, especially making food and drinking water safe.
- If outpatient clients can tolerate, gradual introduction of **home foods** can be encouraged.

5. Transition to Care Plan B if

- BMI > 16 (can use 17 if no supplemental food) OR
 - MUAC >18cm (client admitted with MUAC)
- AND
- Client has appetite
 - Can eat home food
 - No oedema for two consecutive visits
 - Minimum stay in Nutrition care plan A (OTP) for two months month

Note: If the patient stays in nutrition plan A for 3 months with out fulfilling the above criteria, transfer to nutrition care plan B and investigate reason for failure and take action.

Handout 19: Nutrition Care Plan A - Adults

Nutrition Care Plan A for Adults

Inpatient Management

4. Manage Danger signs
5. Prevent and Manage Medical complications as indicated
6. Start therapeutic feeding according to the national SAM guidelines as follows:
 - **Phase 1 -**
 - Give F-75 only (amount strictly based on weight). F75 is used during this phase to promote recovery of normal metabolic function and nutrition-electrolyte balance.
 - Weight gain is dangerous at this stage; that is why F75 is formulated.
 - Provide routine medications as per the national guideline (review routine medications in the annex)
 - Monitor progress
 - Transit to Transition Phase when appetite returns and edema starts to subside, medical complications resolved, no IV line or NGT required
 - **Transition Phase-** Helps for recovery of metabolic function.
 - Give F-100/RUTF based on weight
 - At the same time start giving RUTF gradually until the patient takes 3 – 4 sachets daily
 - Monitor weight gain (shall not exceed 6g/kg/day)
 - Continue the routine medications
 - Monitor clinical progress
 - Transit to Phase 2/OTP when the adult consumes 90% of the recommended daily intake and edema is significantly decreased (from ++ to +)
 - **Phase 2 –** aims to promote rapid weight gain
 - Inpatient management with RUTF and FBF:
 - Unacceptable home circumstances.
 - OTP is preferred unless the above conditions exist
 - During OTP use RUTF – (3sachets of Plumpynut, 500kcal per sachet) and FBF (400gm, 400kcal per 100gm) and demonstrate **how to use RUTF and FBF** and give enough supplies to last to the next return date.
 - Continue giving routine medications/supplementation as per the national guideline

- Ensure that weight gain is not due to fluid accumulation.

Follow-up Visit

- Follow up every month
- **Ask** if the patient finished the RUTF and FBF given in the last visit. Ask if there is any complaint for example diarrhoea, vomiting, fever, or any other complaint.
- **Asses** for any danger-signs and medical complications
- Perform appetite-test-every visit
- Take anthropometric measurement and record
 - Weight-every visit
 - Oedema-every visit
 - Standard clinical sign (vital sign)-every visit
 - MUAC-every visit
 - BMI quarterly
- If they are not gaining weight, have worsening oedema, or have been losing significant weight for more than two months, and failure to pass appetite test at any visit, consider further investigation and treatment according to the national protocol.

Table 4.6. Therapeutic Food Ration for Adult and Adolescents (>14 years)

Nutrition Care Plan A Out Patient		
Adult	Plumpy Nut per day	FBF
When there is Plumpy Nut only	4 sachets	0

4. Counsel on key messages:

- Need for periodic weight monitoring
- How to increase energy density of diets at home
- How to manage key symptoms through diet modification (especially, nausea, loss of appetite, diarrhoea, mouth sores/rash)
- Any possible drug-food interactions
- Sanitation and hygiene, especially making food and drinking water safe.
- If outpatient clients can tolerate, gradual introduction of **home foods** can be encouraged.

5. Transition to Care Plan B if

- BMI > 16 (can use 17 if no supplemental food) OR
 - MUAC > 18cm (client admitted with MUAC)
- AND
- Client has appetite
 - Can eat home food
 - No oedema for two consecutive visits
 - Minimum stay in Nutrition care plan A (OTP) for two months month

Note: If the patient stays in nutrition plan A for 3 months without fulfilling the above criteria, transfer to nutrition care plan B and investigate reason for failure and take action.

Daily Evaluation (5 minutes)

Thank participants for their contributions. Give each participant a copy of the daily evaluation form for the day ask participants to complete the form without their names and leave them turned over on the tables as they leave.

Fill out this form as each topic is completed.

1 = Good 2 = Average 3 = Poor

Topic	Time allocated	Relevance to Your Work	Support from Facilitators	Resources	Contribution to Skills Improvement	Suggestions
Session 1						
1. Introductions, Expectations, Objectives						
2. Pre-test						
Session 2						
1. Nutrition and HIV/ADS Guideline Learning Skills						
2. Counselling tools						
Session 3						
1. Clinical Nutrition Practices and Messages						

Note to Facilitators: Briefly review the information covered and answer any questions participants have.

- **End of the Day**

Day 2

Recap of Day 1

Activity 4.4.3 Nutrition Care Plan B for Adults - 40 minutes

Training Methods: Presentation (40 minutes)

- Ask participants to read through Nutrition Care Plan B : **Handout 20 : Nutrition Care Plan B - Adults**
- Review in detail the clinical protocol and summarize on the flip chart using the information below.
- Explain that the participants will use the care plan to counsel and manage severe

Information for Facilitators

For adults classified with moderate malnutrition, significant weight loss, poor weight gain, or signs of symptomatic disease, the following key messages apply:

Key message. PLHIV commonly experience weight loss, poor appetite, and suffer from symptoms such as mouth sores and diarrhoea. In spite of these, the client can often be managed at home if the correct help is offered early.

Key message. Symptomatic adults who are not severely malnourished need 20 to 30 percent additional energy for “catch-up” weight. Clients who present with OIs also need additional energy. The additional energy should come from home foods where possible or from supplementary foods, if available.

Nutrition Management of Moderately Malnourished Adults

Nutrition Care Plan B (OTP) for Adults

1. Nutritional management

For adults with moderate malnutrition, provide therapeutic and supplementary food using the protocol given in Nutrition Care Plan B as follows:

1. In situation where there is therapeutic and supplementary foods:

Nutrition Care Plan B		
When there is RUTF		300 g daily
When there is FBF		300 g daily
When there is RUSF	According to the National MAM Guideline	

- Provide adequate amount for one month every visit.
- Demonstrate **how to use RUTF and FBF** and give enough supplies to last to the next return date.
- Educate the client on how to **improve household food (increase energy and improve taste)** and achieve the extra food requirements appropriate for the disease stage.

B. Nutrition Management in situation where there is no therapeutic and supplementary foods:

- Counsel client to increase energy in foods to consume 20 to 30 percent more energy from home foods based on current weight, as shown in Table 6.5.

Age (years)	Additional (20-30 percent) energy (kcal) per day due to HIV	Food-based approach. Give in addition to meals and other snacks
15–17	700 (in addition to 2800 kcal daily need)	2-3 large size coffee cups kinche (split wheat)
18+	525 - 600 (in addition to 2170-2430 daily need)	3 large size coffee cups of chechebsa
<i>Pregnant and post-partum women</i>	525 - 600 (in addition to 2455 – 2670)	2 large size coffee cups of beso firfir

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 anaemic may need iron supplementation.

2. Counsel on key messages:

- Need for periodic weight monitoring
- How to increase energy density of diets at home
- How to manage key symptoms through diet modification (especially, nausea, loss of appetite, diarrhoea, mouth sores/rash)
- Any possible drug-food interactions
- Sanitation and hygiene, especially making food and drinking water safe.
- If outpatient clients can tolerate, gradual introduction of **home foods** can be encouraged.

3. Clinical Management

- Ensure that cotrimoxazole prophylaxis is provided as per the national protocol for HIV-positive adults with CD4 counts less than 350 and WHO stage 3 and 4
- **If client is HIV positive but not on ART, refer to assessment for ART.**
- If the **client is on ART and losing weight**, assess a) non-adherence, b) related side-effects (vomiting, abdominal pain, diarrhoea, poor appetite, taste change), c) opportunistic infection (e.g., TB, diarrhoea), d) development of immune reconstitution syndrome or late ART-related side effects (e.g., lactic acidosis signs such as abdominal pain, vomiting, or fast breathing), or e) possible early sign of treatment failure if on ART for longer than six months (do a check of CD4 levels), and f) lipotrophy. **Refer if indicated.**
- Assess inadequate food intake by evaluating a) energy density of the food, b) quantity of food intake, and c) food access problems. **Support appropriately.**

4. Follow-up Visit

- Follow up every month
 - **Ask** if the patient finished the RUTF and FBF given in the last visit. Ask if there is any complaint for example diarrhoea, vomiting, fever, or any other complaint.
 - **Asses** for any danger-signs and medical complications
 - Perform appetite-test-every visit
 - Take anthropometric measurement and record
 - Weight-every visit
 - Oedema-every visit
 - Standard clinical sign (vital sign)-every visit
 - MUAC-every visit
 - BMI quarterly
- **Review the plan** with the client in one month. If the client is responding, review the plan every one to two **months depending** on response.
- If the client is **not gaining weight for three or more months** or if he/she continues to **lose weight for two or more months**, refer the client to specialized investigation and care.

5. Transition to Nutrition Care Plan C

- **Change to Nutrition Plan C** when adult has been in Nutrition Care 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 AND
 - BMI \geq 18.5, or MUAC > 21 cm for adults (non pregnant adults)
 - MUAC >22 cm (for pregnant and lactating women)

Note: for clients admitted to nutrition care plan B directly they should stay in nutrition care plan B for 3 months

Handout 20: Nutrition Care Plan B- Adults

Nutrition Care Plan B (OTP) for Adults

1. Nutritional management

For adults with moderate malnutrition, provide therapeutic and supplementary food using the protocol given in Nutrition Care Plan B as follows:

1. In situation where there is therapeutic and supplementary foods:

Nutrition Care Plan B		
When there is RUTF		300 g daily
When there is FBF		300 g daily
When there is RUSF	According to the National MAM Guideline	

- Provide adequate amount for one month every visit.
- Demonstrate **how to use RUTF and FBF** and give enough supplies to last to the next return date.
- Educate the client on how to **improve household food (increase energy and improve taste)** and achieve the extra food requirements appropriate for the disease stage.

B. Nutrition Management in situation where there is no therapeutic and supplementary foods:

- Counsel client to increase energy in foods to consume 20 to 30 percent more energy from home foods based on current weight, as shown in Table 6.5.

Table 4.8. Additional Energy Needs of Symptomatic PLHIV		
Age (years)	Additional (20-30 percent) energy (kcal) per day due to HIV	Food-based approach. Give in addition to meals and other snacks
15–17	700 (in addition to 2800 kcal daily need)	2-3 large size coffee cups kinche (split wheat)

18+	525 - 600 (in addition to 2170-2430 daily need)	3 large size coffee cups of chechebsa
<i>Pregnant and post-partum women</i>	525 - 600 (in addition to 2455 – 2670)	2 large size coffee cups of beso firfir

- 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 anaemic may need iron supplementation.

2. Counsel on key messages:

- Need for periodic weight monitoring
- How to increase energy density of diets at home
- How to manage key symptoms through diet modification (especially, nausea, loss of appetite, diarrhoea, mouth sores/rash)
- Any possible drug-food interactions
- Sanitation and hygiene, especially making food and drinking water safe.
- If outpatient clients can tolerate, gradual introduction of **home foods** can be encouraged.

3. Clinical Management

- Ensure that cotrimoxazole prophylaxis is provided as per the national protocol for HIV-positive adults with CD4 counts less than 350 and WHO stage 3 and 4
- **If client is HIV positive but not on ART, refer to assessment for ART.**
- If the **client is on ART and losing weight**, assess a) non-adherence, b) related side-effects (vomiting, abdominal pain, diarrhoea, poor appetite, taste change), c) opportunistic infection (e.g., TB, diarrhoea), d) development of immune reconstitution syndrome or late ART-related side effects (e.g., lactic acidosis signs such as abdominal pain, vomiting, or fast breathing), or e) possible early sign of treatment failure if on ART for longer than six months (do a check of CD4 levels), and f) lipoatrophy. **Refer if indicated.**
- Assess inadequate food intake by evaluating a) energy density of the food, b) quantity of food intake, and c) food access problems. **Support appropriately.**

4. Follow-up Visit

- Follow up every month
 - **Ask** if the patient finished the RUTF and FBF given in the last visit. Ask if there is any complaint for example diarrhoea, vomiting, fever, or any other complaint.
 - **Asses** for any danger-signs and medical complications
 - Perform appetite-test-every visit

- Take anthropometric measurement and record
 - Weight-every visit
 - Oedema-every visit
 - Standard clinical sign (vital sign)-every visit
 - MUAC-every visit
 - BMI quarterly
- **Review the plan** with the client in one month. If the client is responding, review the plan every one to two **months depending** on response.
- If the client is **not gaining weight for three or more months** or if he/she continues to **lose weight for two or more months**, refer the client to specialized investigation and care.

5. Transition to Nutrition Care Plan C

- **Change to Nutrition Plan C** when adult has been in Nutrition Care 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 AND
 - BMI ≥ 18.5 , or MUAC > 21 cm for adults (non pregnant adults)
 - MUAC > 22 cm (for pregnant and lactating women)

Note: for clients admitted to nutrition care plan B directly they should stay in nutrition care plan B for 3 months

Activity 4.4.4 Nutrition Care Plan C for Adults (40 minutes)**Training Methods: Presentation (40 minutes)**

- Ask participants to read through Nutrition Care Plan C: **Handout 21: Nutrition Care Plan C - Adults.**
- Review in detail the clinical protocol and summarize on the flip chart using the information below.
- Explain that the participants will use the care plan to counsel and manage severe

Information for Facilitators

For adults with appropriate growth, normal nutritional status, and no signs of symptomatic disease, following are some key messages:

Key message. **Preventive measures** such as good hygiene and micronutrient supplementation. **Physical activity** helps PLHIV develop and maintain strong muscles and improves their sense of well-being.

Key message. Counselling on the **7 Critical Nutrition Practices** from Session 3 is very important to help maintain good health and nutritional status.

Key message. PLHIV should be **referred** to other health care facilities or programs when specific needs are identified or other resources are required. The frequency and interval between reviews depends on the condition and needs of the client.

Key message. Asymptomatic PLHIV require 10 percent additional energy due to virus replication and changes in metabolism. Quantities and example snacks to meet these requirements are given in Table 3 below.

Nutrition Management of Mildly Malnourished Adults**Nutrition Care Plan C for Adults****1. Clinical Management**

- If the client is on ART, determine whether the client is adhering to treatment and managing diet-related symptoms well.
- Ensure that cotrimoxazole prophylaxis is provided as per the national protocol for HIV-positive adults with CD4 counts under 350 and WHO stage 3 and 4.

2. Nutrition Management

Counsel the client to eat enough food to meet increased energy/nutrient needs plus 10 percent energy, as shown in Table 6.7.

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 (in addition to 2800 kcal daily need)	1 large coffee cup of beso firfir
18+	225 (in addition to 2170-2430 daily need)	1 large coffee cup of kolo
<i>Pregnant and post-partum women</i>	225 (in addition to 2455 – 2670)	2 medium coffee cups of chechebsa

Nutrition Counselling

- **Counsel on key messages and critical nutrition practices:**
- The need for periodic weight monitoring
- How to increase the energy density of diets at home
- How to manage **diet-related symptoms** (especially nausea/vomiting, poor appetite, diarrhoea, mouth sores/thrush)
- Any possible drug-food interactions
- Sanitation and hygiene, especially making food and drinking water safe.

3. Follow Up Management

- **Advise** the client and caregiver of the need for periodic weighing
- **Review the plan** with the client in two to three months or earlier if problems arise.

Handout 21: Nutrition Care Plan C

Nutrition Care Plan C for Adults

1. Clinical Management

- If the client is on ART, determine whether the client is adhering to treatment and managing diet-related symptoms well.
- Ensure that cotrimoxazole prophylaxis is provided as per the national protocol for HIV-positive adults with CD4 counts under 350 and WHO stage 3 and 4.

2. Nutrition Management

Counsel the client to eat enough food to meet increased energy/nutrient needs plus 10 percent energy, as shown in Table 6.7.

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 (in addition to 2800 kcal daily need)	1 large coffee cup of beso firfir
18+	225 (in addition to 2170-2430 daily need)	1 large coffee cup of kolo
<i>Pregnant and post-partum women</i>	225 (in addition to 2455 – 2670)	2 medium coffee cups of chechebsa

Nutrition Counselling

- **Counsel on key messages and critical nutrition practices:**
- The need for periodic weight monitoring
- How to increase the energy density of diets at home
- How to manage **diet-related symptoms** (especially nausea/vomiting, poor appetite, diarrhoea, mouth sores/thrush)
- Any possible drug-food interactions
- Sanitation and hygiene, especially making food and drinking water safe.

3. Follow Up Management

- **Advise** the client and caregiver of the need for periodic weighing
- **Review the plan** with the client in two to three months or earlier if problems arise.

Activity 4.4.5 Nutrition Care Plan A for Children - 1 hour

Activity 4.4.5.1 Review of Nutrition Care Plan A - 40 minutes

Training Methods: Presentation (40 minutes)

- Ask participants to read through Nutrition Care Plan A: **Handout 23: Nutrition Care Plan A - Children.**
- Review in detail the clinical protocol and summarize on the flip chart using the information below.
- Explain that the participants will use the care plan to counsel and manage severe acute malnutrition cases in children.

Information for Facilitators

Key message. Nutritional needs of PLHIV vary according to age (for children), stage of disease, presence of acute and/or chronic infections such as persistent diarrhoea or OIs, and drug treatment given.

Key message. Implementing a nutrition care plan starts with understanding what the client presently eats and drinks—type of food, how it is prepared, and amount and frequency. Nutritional needs are best met through **varied diets** in adequate quantities. When these are not available or demands are high, additional support may be needed through supplementary foods.

Key message. All people need regular, adequate and appropriate foods in order to grow, develop and maintain optimal body function. Nutrition is not just food but also includes the quantity of the food, how it is prepared and eaten, and how the body uses it. Food needs may be met either by improving diet based on foods available in the home (food-based approach) or through nutrition supplementation provided by a service or program.

Key message. Sick PLHIV should be fed with care and patience. The health care provider should understand who the main caregivers are and who else is involved with feeding and care. This helps the health care provider understand the quality and consistency of care practices. If the caregiver and environment are not stable, the client may need extra support (e.g., social support, child protection, or help from other community resources). Nutrition care plans are interventions determined based on PLHIV clients' nutritional status and health conditions that affect nutritional needs and absorption/utilization. There

are three nutrition care plans for treatment of malnutrition in PLHIV: Nutrition Care Plan A, Nutrition Care Plan B, and Nutrition Care Plan C.

Nutrition Management of Severely Malnourished Children

Nutrition Management Source: Protocol for the management of severe acute malnutrition Ethiopia: Federal Ministry of health 2007

Nutrition Care Plan A for Children

Inpatient Management

1. Manage Danger signs
2. Prevent and Manage Medical complications as indicated
3. Start therapeutic feeding according to the national SAM guidelines as follows:
 - **Phase 1 -**
 - Give F-75 only (amount strictly based on weight). F75 is used during this phase to promote recovery of normal metabolic function and nutrition-electrolyte balance.
 - Weight gain is dangerous at this stage; that is why F75 is formulated.
 - Provide routine medications as per the national guideline (review routine medications in the annex)
 - Monitor progress
 - Transit to Transition Phase when appetite returns and edema starts to subside, medical complications resolved, no IV line or NGT required
 - **Transition Phase-** Helps for recovery of metabolic function.
 - Give F-100 based on the weight of the child
 - At the same time start giving RUTF gradually
 - Monitor weight gain (shall not exceed 6g/kg/day)
 - Continue the routine medications
 - Monitor clinical progress
 - Transit to Phase 2/OTP when the child consumes 90% of the recommended daily intake and edema is significantly decreased (from ++ to +)
 - **Phase 2 –** aims to promote rapid weight gain
 - Inpatient management with either RUTF or F100 if there is:
 - No capable caretaker for outpatient management.
 - Unacceptable home circumstances.
 - No RUTF supply or no operational OTP program in the vicinity of the client.
 - OTP is preferred unless the above conditions exist

During OTP:

- Use RUTF according to Weight in Table 1 and demonstrate to the caregiver how to use RUTF, and give enough supplies to last to the next return date.

- Continue giving routine medications/supplementation as in table 6.1
- A weight gain of greater than 8 g/kg/day is expected
- **Follow-up Visit for phase 2 or OTP**
 - Follow up with all children after 2 weeks
 - **Ask** if the patient finished the RUTF given in the last visit. Is there any complaint for example diarrhoea, vomiting, fever, or any other complaint.
 - **Asses** for any danger-signs and medical complications
 - Perform appetite-test-every visit
 - Take anthropometric measurement and record
 - Weight-every visit
 - Oedema-every visit
 - Standard clinical sign (vital sign)-every visit
 - MUAC-every visit
 - Height/Length-every month/BMI for age
 - If they are gaining weight adequately (> 8 g/kg/day for children), you can follow-up monthly.
 - If they are not gaining weight, have worsening oedema, or have been losing weight for more than two months, and failure to pass appetite test at any visit, consider further investigation and treatment according to the national protocol.

Table 4.10. Amount of Plumpy Nut to Give for Children in Out- Patient SAM Cases (Nutrition Care Plan A)

Class of Weight (KG)	Plumpy Nut	
	Sachet per Day	Sachet per week
3.0-3.4	1 ¼	8
3.5-4.9	1 ½	10
5.0-6.9	2	15
7.0-9.9	3	20
10.0-14.9	4	30
15.0-19.9	5	35
20.0-29.9	6	40
30.0-39.9	7	50
>40	8	55

4. Counsel on key messages:

- a. Need for periodic weight monitoring
- b. How to increase energy density of diets at home
- c. How to manage key symptoms through diet modification (especially, nausea, loss of appetite, diarrhoea, mouth sores/rash)
- d. Any possible drug-food interactions
- e. Sanitation and hygiene, especially making food and drinking water safe.
- f. If outpatient clients can tolerate, gradual introduction of **home foods** can be encouraged.

5. Transition to Care Plan B

- W/H > -2 Z-scores
OR
- MUAC > 11 cm: 6 months – 59 months
- MUAC > 12.9 cm: 5-9 years
- MUAC > 16 cm: 10-14 years
OR
- BMI for age- >-2SD
AND
- No oedema for two consecutive visits
- Minimum stay in nutrition care plan A (OTP) for two months.

Note: If child stays in nutrition plan A for 3 months with out fulfilling the above criteria, transfer to nutrition care plan B and investigate reason for failure and take action.

Handout 22: Nutrition Care Plan A - Children**Nutrition Care Plan A for Children*****Inpatient Management***

5. Manage Danger signs
6. Prevent and Manage Medical complications as indicated
7. Start therapeutic feeding according to the national SAM guidelines as follows:
 - **Phase 1 -**
 - Give F-75 only (amount strictly based on weight). F75 is used during this phase to promote recovery of normal metabolic function and nutrition-electrolyte balance.
 - Weight gain is dangerous at this stage; that is why F75 is formulated.

- Provide routine medications as per the national guideline (review routine medications in the annex)
- Monitor progress
- Transit to Transition Phase when appetite returns and edema starts to subside, medical complications resolved, no IV line or NGT required
- **Transition Phase-** Helps for recovery of metabolic function.
 - Give F-100 based on the weight of the child
 - At the same time start giving RUTF gradually
 - Monitor weight gain (shall not exceed 6g/kg/day)
 - Continue the routine medications
 - Monitor clinical progress
 - Transit to Phase 2/OTP when the child consumes 90% of the recommended daily intake and edema is significantly decreased (from ++ to +)
- **Phase 2** – aims to promote rapid weight gain
 - Inpatient management with either RUTF or F100 if there is:
 - No capable caretaker for outpatient management.
 - Unacceptable home circumstances.
 - No RUTF supply or no operational OTP program in the vicinity of the client.
 - OTP is preferred unless the above conditions exist

During OTP:

- Use RUTF according to Weight in Table 1 and demonstrate to the caregiver how to use RUTF, and give enough supplies to last to the next return date.
- Continue giving routine medications/supplementation as in table 6.1
- A weight gain of greater than 8 g/kg/day is expected
- **Follow-up Visit for phase 2 or OTP**
 - Follow up with all children after 2 weeks
 - **Ask** if the patient finished the RUTF given in the last visit. Is there any complaint for example diarrhoea, vomiting, fever, or any other complaint.
 - **Asses** for any danger-signs and medical complications
 - Perform appetite-test-every visit
 - Take anthropometric measurement and record
 - Weight-every visit
 - Oedema-every visit
 - Standard clinical sign (vital sign)-every visit
 - MUAC-every visit
 - Height/Length-every month/BMI for age
 - If they are gaining weight adequately (> 8 g/kg/day for children), you can follow-up monthly.

- If they are not gaining weight, have worsening oedema, or have been losing weight for more than two months, and failure to pass appetite test at any visit, consider further investigation and treatment according to the national protocol.

Table 4.10. Amount of Plumpy Nut to Give for Children in Out- Patient SAM Cases (Nutrition Care Plan A)

Class of Weight (KG)	Plumpy Nut	
	Sachet per Day	Sachet per week
3.0-3.4	1 ¼	8
3.5-4.9	1 ½	10
5.0-6.9	2	15
7.0-9.9	3	20
10.0-14.9	4	30
15.0-19.9	5	35
20.0-29.9	6	40
30.0-39.9	7	50
>40	8	55

8. Counsel on key messages:

- a. Need for periodic weight monitoring
- b. How to increase energy density of diets at home
- c. How to manage key symptoms through diet modification (especially, nausea, loss of appetite, diarrhoea, mouth sores/rash)
- d. Any possible drug-food interactions
- e. Sanitation and hygiene, especially making food and drinking water safe.
- f. If outpatient clients can tolerate, gradual introduction of **home foods** can be encouraged.

5. Transition to Care Plan B

- W/H > -2 Z-scores
OR
- MUAC > 11 cm: 6 months – 59 months
- MUAC > 12.9 cm: 5-9 years
- MUAC > 16 cm: 10-14 years
OR
- BMI for age- >-2SD
AND
- No oedema for two consecutive visits
- Minimum stay in nutrition care plan A (OTP) for two months.

Note: If child stays in nutrition plan A for 3 months with out fulfilling the above criteria, transfer to nutrition care plan B and investigate reason for failure and take action.

Activity 4.4.5.2. Practice on case study - 20 minutes

Training Methods: Exercise and Discussion (20 minutes)

- Ask participants to form again the same small groups they were in on Day 1. Review the key messages above and answer any questions participants may have.
- Review the information above on Nutrition Care Plan A and answer any questions participants may have.
- Ask participants to refer again to **Handout 11a: Algorithm for Management of Malnutrition in PLHIV - Children**. Review with them Nutrition Care Plan A.
- Now ask participants to refer again to **Handout 22: Case Study**. Ask them to reread the information in Part I (only) and determine the support they would give Kebede based on the information on his nutritional condition. Also ask them to discuss the challenges likely to be faced.
- Ask one or two groups to share their results. Record responses on a flip chart or the blackboard so all participants can see them clearly.
- Ask the larger group session for any additional comments and fill gaps as needed.

Activity 4. 4.6 Nutrition Care Plan B for Children - 40 minutes**Training Methods: Discussion and Exercise (40 minutes)**

Review the information above on Nutrition Care Plan B and answer any questions participants may have.

- Ask participants to refer to **Handout 24: Nutrition Care Plan B - Children** and review Nutrition Care Plan B.
- Ask participants to refer again to **Handout 22: Case Study**. Ask them to re-read the information in Part 2 (only) and determine the support they would give Kebede based on the information. Also ask them to discuss the challenges likely to be faced.
- Ask one or two groups to share their results. Record responses on a flip chart or the blackboard so all participants can see them clearly.
- Ask the larger group for any additional comments and fill gaps as needed

Information for Facilitators

For children classified with moderate malnutrition, significant weight loss, poor weight gain, or signs of symptomatic disease, the following key messages apply:

Key message. PLHIV commonly experience weight loss, poor appetite, and suffer from symptoms such as mouth sores and diarrhoea. In spite of these, the client can often be managed at home if the correct help is offered early.

Key message. HIV-positive children who are losing weight and are symptomatic need 50 to 100 percent more energy than is required by healthy children the same age. HIV-positive children who are symptomatic but not losing weight need 20 to 30 percent additional energy. Symptomatic adults who are not severely malnourished need 20 to 30 percent additional energy for “catch-up” weight. Clients who present with OIs also need additional energy. The additional energy should come from home foods where possible or from supplementary foods, if available.

Nutrition Management of Moderately Malnourished Children**Nutrition Care Plan B (OTP) for children****1. Nutritional management**

For children with moderate malnutrition, provide therapeutic and supplementary food using the protocol given in Nutrition Care Plan B

A. In situation where there is therapeutic and supplementary foods:

- Provide **RUTF (500 kcal/sachet) or 200 g of FBF (400 kcal/100 g) or RUSF** daily as stated in table 6.3 below and in adequate amount for two weeks or one month every visit.
- Demonstrate **how to use RUTF and FBF** and give enough supplies to last to the next return date. .

Table 4.11. Supplementary food rations for HIV-positive children			
Age group	RUTF	FBF	RUSF
6 months – 11 months	one 92 g. sachet of RUTF	50g.	According to MAM GL.
12 months – 23 months	two 92 g. sachet of RUTF	100g.	According to MAM GL.
24 months – 59 months	two 92 g. sachet of RUTF	100g.	According to MAM GL.
5 years – 9 years	three 92 g. sachet of RUTF	200g.	According to MAM GL.
10–14 years	three 92 g. sachet of RUTF	200g.	According to MAM GL.

B. Nutrition Management in situation where there is no therapeutic and supplementary foods:

- Counsel parents on increasing energy intake using home prepared recipes as follows:
 - Additional energy needs. To meet their additional energy needs, HIV-infected individuals need to consume the following additional quantities of energy in addition to a full daily diet:
 - Children 6–12 months old: Additional 120–150 kcal/day
 - Children 12–23 months old: Additional 160–190 kcal/day
 - Children 2–5 years old: Additional 200–280 kcal/day
 - Children 6–9 years old: Additional 260–380 kcal/day
 - Children 10–14 years old: Additional 340–400 kcal/day
 - Adults: Additional 525 kcal/day

See Table 4.12 for adaptation of these quantities to local snacks.

Table 4.12. Additional Energy Requirements of Symptomatic PLHIV		
Age	Additional (20-30%) energy (kcal) per day due to HIV	Snack examples that can be given in addition to the meals and snacks
6 months – 11 months	120-150 kcal/day	One medium size mango and banana
12 months – 23 months	160-190 kcal/day	Quarter enjera fettfet with meat sauce
2 - 5 years	200-280 kcal/day	1 Medium cup beso drink and 1 banana
6– 9 years	260-380 kcal/day	1 large cup of beso firfir and 1 large cup of nifro
10–14 years	260–380 kcal/day	1 average size slice of kitta/ambasha
15–17 years	350-400 kcal/day	2 big-size cup kinche (split wheat)
18+ years	350-400 kcal/day	3 big-size cups of chechebsa

2. Provide routine medicines and Supplementation

- Ensure adequate micronutrient intake. If the client’s diet is not varied enough to provide sufficient micronutrients, give a daily micronutrient supplement that provides 1 RDA of vitamins and minerals. Clients who are anaemic may need iron supplementation.
- Provide vitamin A supplements to children every six months according to the national protocol.
- De-worm regularly, every six months.

2. Counsel on key messages:

- Need for periodic weight monitoring
- How to increase energy density of diets at home
- How to manage key symptoms through diet modification (especially, nausea, loss of appetite, diarrhoea, mouth sores/rash)
- Any possible drug-food interactions
- Sanitation and hygiene, especially making food and drinking water safe.
- If outpatient clients can tolerate, gradual introduction of **home foods** can be encouraged.

4. Clinical Management

- Ensure cotrimoxazole prophylaxis is provided to HIV-positive children, per the national protocol.
- Clinically stage and assess the client for ART.
- If the client is on ART, assess clinical and immunological response.
- If the client is a child, assess the mother's health, need for ART, and ability to care for other children.

5. Follow-up Visit

- Follow up with all children every 2 weeks or 4 weeks (if the child is gaining weight or if they are coming from a far place.)
 - **Ask** if the patient finished the RUTF and FBF given in the last visit. Is there any complaint for example diarrhoea, vomiting, fever, or any other complaint.
 - **Asses** for any danger-signs and medical complications, check for appetite test
 - Take anthropometric measurement and record
 - Weight-every visit
 - Oedema-every visit
 - Standard clinical sign (vital sign)-every visit
 - MUAC-every visit
 - Height/Length-every month/BMI for age
- A weight gain of greater than 8 g/kg/day is expected
- If they are not gaining weight, or develop oedema, or have been losing weight for more than two months, and failure to pass appetite test at any visit, consider further investigation and treatment according to the national protocol.

6. Transition to Care Plan C

Children should graduate from food supplementation when they have received at least two months of RUTF and FBF and fulfil the following:

- $W/H > -2$ Z-scores or 80 percent median (use 85 percent if no supplemental food)
- OR
- $MUAC > 12$ cm 6 months – 59 months
- $MUAC > 14$ cm 5-9 years
- $MUAC > 18$ cm 10-14 years
- BMI for age for 5-19 years > -2 Z score
- AND
- No weight loss
- No signs of symptomatic disease

Children with conditions with increased energy needs e.g. chronic lung disease or chronic infections e.g. TB or persistent diarrhoea. Children may, or may not, be on ART will transit to Nutrition Care Plan C when the underlying causes of poor weight gain, or causes of additional energy needs e.g. chronic lung disease, TB or HIV-related malignancy are effectively managed .

Note; for clients admitted to nutrition care plan B directly they should stay in nutrition care plan B for maximum of 3 months except children 6-24 months who will stay until they are 24 months old.

Handout 24: Nutrition Care Plan B - Children

Nutrition Care Plan B (OTP) for children

1. Nutritional management

For children with moderate malnutrition, provide therapeutic and supplementary food using the protocol given in Nutrition Care Plan B

A. In situation where there is therapeutic and supplementary foods:

- Provide **RUTF (500 kcal/sachet) or 200 g of FBF (400 kcal/100 g) or RUSF** daily as stated in table 6.3 below and in adequate amount for two weeks or one month every visit.
- Demonstrate **how to use RUTF and FBF** and give enough supplies to last to the next return date. .

Table 4.11. Supplementary food rations for HIV-positive children			
Age group	RUTF	FBF	RUSF
6 months – 11 months	one 92 g. sachet of RUTF	50g.	According to MAM GL.
12 months – 23 months	two 92 g. sachet of RUTF	100g.	According to MAM GL.
24 months – 59 months	two 92 g. sachet of RUTF	100g.	According to MAM GL.
5 years – 9 years	three 92 g. sachet of RUTF	200g.	According to MAM GL.
10–14 years	three 92 g. sachet of RUTF	200g.	According to MAM GL.

B. Nutrition Management in situation where there is no therapeutic and supplementary foods:

- Counsel parents on increasing energy intake using home prepared recipes as follows:

- Additional energy needs. To meet their additional energy needs, HIV-infected individuals need to consume the following additional quantities of energy in addition to a full daily diet:
 - Children 6–12 months old: Additional 120–150 kcal/day
 - Children 12–23 months old: Additional 160–190 kcal/day
 - Children 2–5 years old: Additional 200–280 kcal/day
 - Children 6–9 years old: Additional 260–380 kcal/day
 - Children 10–14 years old: Additional 340–400 kcal/day
 - Adults: Additional 525 kcal/day

See Table 6.4 for adaptation of these quantities to local snacks.

Table 4.12. Additional Energy Requirements of Symptomatic PLHIV		
Age	Additional (20-30%) energy (kcal) per day due to HIV	Snack examples that can be given in addition to the meals and snacks
6 months – 11 months	120-150 kcal/day	One medium size mango and banana
12 months – 23 months	160-190 kcal/day	Quarter enjera fetfet with meat sauce
2 - 5 years	200-280 kcal/day	1 Medium cup beso drink and 1 banana
6– 9 years	260-380 kcal/day	1 large cup of beso firfir and 1 large cup of nifro
10–14 years	260–380 kcal/day	1 average size slice of kitta/ambasha
15–17 years	350-400 kcal/day	2 big-size cup kinche (split wheat)
18+ years	350-400 kcal/day	3 big-size cups of chechebsa

2. Provide routine medicines and Supplementation

- Ensure adequate micronutrient intake. If the client’s diet is not varied enough to provide sufficient micronutrients, give a daily micronutrient supplement that provides 1 RDA of vitamins and minerals. Clients who are anaemic may need iron supplementation.
- Provide vitamin A supplements to children every six months according to the national protocol.

- De-worm regularly, every six months.

3. Counsel on key messages:

- Need for periodic weight monitoring
- How to increase energy density of diets at home
- How to manage key symptoms through diet modification (especially, nausea, loss of appetite, diarrhoea, mouth sores/rash)
- Any possible drug-food interactions
- Sanitation and hygiene, especially making food and drinking water safe.
- If outpatient clients can tolerate, gradual introduction of **home foods** can be encouraged.

4. Clinical Management

- Ensure cotrimoxazole prophylaxis is provided to HIV-positive children, per the national protocol.
- Clinically stage and assess the client for ART.
- If the client is on ART, assess clinical and immunological response.
- If the client is a child, assess the mother's health, need for ART, and ability to care for other children.

5. Follow-up Visit

- Follow up with all children every 2 weeks or 4 weeks (if the child is gaining weight or if they are coming from a far place.)
 - **Ask** if the patient finished the RUTF and FBF given in the last visit. Is there any complaint for example diarrhoea, vomiting, fever, or any other complaint.
 - **Asses** for any danger-signs and medical complications, check for appetite test
 - Take anthropometric measurement and record
 - Weight-every visit
 - Oedema-every visit
 - Standard clinical sign (vital sign)-every visit
 - MUAC-every visit
 - Height/Length-every month/BMI for age
 - A weight gain of greater than 8 g/kg/day is expected
 - If they are not gaining weight, or develop oedema, or have been losing weight for more than two months, and failure to pass appetite test at any visit, consider further investigation and treatment according to the national protocol.

6. Transition to Care Plan C

Children should graduate from food supplementation when they have received at least two months of RUTF and FBF and fulfil the following:

- W/H > -2 Z-scores or 80 percent median (use 85 percent if no supplemental food)
- OR
- MUAC > 12 cm 6 months – 59 months
- MUAC > 14 cm 5-9 years

- MUAC > 18 cm 10-14 years
- BMI for age for 5-19 years >-2 Z score
AND
- No weight loss
- No signs of symptomatic disease

Children with conditions with increased energy needs e.g. chronic lung disease or chronic infections e.g. TB or persistent diarrhoea. Children may, or may not, be on ART will transit to Nutrition Care Plan C when the underlying causes of poor weight gain, or causes of additional energy needs e.g. chronic lung disease, TB or HIV-related malignancy are effectively managed .

Note; for clients admitted to nutrition care plan B directly they should stay in nutrition care plan B for maximum of 3 months except children 6-24 months who will stay until they are 24 months old.

Activity 4.4.7 Nutrition Care Plan C for Children - 40 minutes

Training Methods: Presentation and Discussion (40 minutes)

- Ask participants to read through **Handout 25: Nutrition Care Plan C - Children**
- Review in detail the clinical protocol and summarize on the flip chart using the information below.
- Explain that the participants will use the care plan to counsel and manage moderately malnourished cases in children.

Information for Facilitators

For children with appropriate growth, normal nutritional status, and no signs of symptomatic disease, following are some key messages:

Key message. **Preventive measures** such as good hygiene, immunizations for children, and regular vitamin A supplements protect PLHIV against infection and undernutrition. **Physical activity** helps PLHIV develop and maintain strong muscles and improves their sense of well-being.

Key message. Counselling on the **7 Critical Nutrition Practices** from Session 3 is very important to help maintain good health and nutritional status.

Key message. PLHIV should be **referred** to other health care facilities or programs when specific needs are identified or other resources are required. The frequency and interval between reviews depends on the condition and needs of the client.

Key message. Asymptomatic PLHIV require 10 percent additional energy due to virus replication and changes in metabolism. Quantities and example snacks to meet these requirements are given in Table 3 below.

Management of Mildly Malnourished and Normal Children

Nutrition Care Plan C for children

1. Clinical Management

- Clinically stage and assess the client for ART.
- If the client is on ART, assess the clinical and immunological response (e.g., take blood biochemical measures at least every six months).
- Counsel on adherence to immunisations (for children), de-worming, micronutrient supplementation, hygiene and sanitation, and management of drug-related side effects.

2. Nutrition Management

Age	Additional (10%) energy (kcal) per day due to HIV	Snack examples that can be given in addition to the meals and snacks
6 months – 11 months	60-75 kcal	1 medium size banana and mango each
12 months – 23 months	80-95 kcal	One medium size banana
2 years - 5 years	100-140 kcal	1 medium size sweat potato
6 years – 9 years	130-190 kcal	1 large cup of asuk (roasted and boiled beans)
10 years – 14 years	170-230 kcal	1 slice kitta/ambasha
15 years – 17 years	200 kcal	1 big size tea cup of beso firfir
18+ years	200 kcal	1 big size tea cup of beso juice

Nutrition Counselling

- Assure the mother or caregiver that the child is growing well.
- **Counsel on 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** (especially nausea/vomiting, poor appetite, diarrhoea, mouth sores/thrush), d) any possible drug-food

interactions, e) and sanitation and hygiene, especially making food and drinking water safe.

- If they are breastfeeding, counsel on optimal breastfeeding or, if on replacement feeding, emphasise proper feeding, safety and avoiding mixed feeding.
- If the child is of complementary feeding age emphasise optimal complementary feeding practices (FADUA -- Frequency, Adequacy, Density, Utilization and Active feeding and variety).

Routine Supplementation

- Ensure adequate micronutrient intake. If the child's diet is not varied enough to provide sufficient micronutrients, give a daily micronutrient supplement that provides 1 RDA of vitamins and minerals. Clients who are anaemic may need iron supplementation.
- Provide vitamin A supplements to children every six months according to the national protocol.
- De-worm regularly, every six months.

3. Follow Up Management

- Review in two to three months, but tell the caregiver to return earlier if problems arise.
- If the client is a child, assess the mother's health, her need for ART, and her ability to care for other children.

Handout 25: Nutrition Care Plan C - Children

Nutrition Care Plan C for children

1. Clinical Management

- Clinically stage and assess the client for ART.
- If the client is on ART, assess the clinical and immunological response (e.g., take blood biochemical measures at least every six months).
- Counsel on adherence to immunisations (for children), de-worming, micronutrient supplementation, hygiene and sanitation, and management of drug-related side effects.

2. Nutrition Management

Age	Additional (10%) energy (kcal) per day due to HIV	Snack examples that can be given in addition to the meals and snacks
6 months – 11 months	60-75 kcal	1 medium size banana and mango each
12 months – 23 months	80-95 kcal	One medium size banana
2 years - 5 years	100-140 kcal	1 medium size sweat potato
6 years – 9 years	130-190 kcal	1 large cup of asuk (roasted and boiled beans)
10 years – 14 years	170-230 kcal	1 slice kitta/ambasha
15 years – 17 years	200 kcal	1 big size tea cup of beso firfir
18+ years	200 kcal	1 big size tea cup of beso juice

Nutrition Counselling

- Assure the mother or caregiver that the child is growing well.
- **Counsel on 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** (especially nausea/vomiting, poor appetite, diarrhoea, mouth sores/thrush), d) any possible drug-food interactions, e) and sanitation and hygiene, especially making food and drinking water safe.
- If they are breastfeeding, counsel on optimal breastfeeding or, if on replacement feeding, emphasise proper feeding, safety and avoiding mixed feeding.

- If the child is of complementary feeding age emphasise optimal complementary feeding practices (FADUA -- Frequency, Adequacy, Density, Utilization and Active feeding and variety).

Routine Supplementation

- Ensure adequate micronutrient intake. If the child's diet is not varied enough to provide sufficient micronutrients, give a daily micronutrient supplement that provides 1 RDA of vitamins and minerals. Clients who are anaemic may need iron supplementation.
- Provide vitamin A supplements to children every six months according to the national protocol.
- De-worm regularly, every six months.

3. Follow Up Management

- Review in two to three months, but tell the caregiver to return earlier if problems arise.
- If the client is a child, assess the mother's health, her need for ART, and her ability to care for other children.

Handout 26: Case Studies

1. Kebede is a 4 years old boy living with HIV. He is on ART and brought for regular follow up. His mother said, Kebede is not eating well, had diarrhea for the last three weeks, and has lost significant amount of his weight. When you assess him, he looks sick, weighs 9.0Kg, his height is 90cm, and his MUAC is 10.5cm. Otherwise he doesn't have any of the danger signs or symptoms suggestive of tuberculosis or other chronic lung diseases.
 - a. Classify the nutritional status of Kebede based on the information given.
 - b. How will you manage Kebede? List the care plan and describe the principles of management for Kebede.

2. Kebede is now 4 years and 2 months, on your follow up. Currently he doesn't have diarrhea and the appetite has improved. There is no fever and he is taking his medications properly. On examination, his weight is 10.6Kg, his height is 92cm, his MUAC is 11.1cm, and he doesn't have edema of legs.
 - a. Is Kebede a candidate to be transferred to next care plan?
 - b. Document Kebede's status on the follow up chart.
 - c. How will you manage Kebede now? Specify the support you will provide.

3. Nadia is a 35 years old female presented to OPD with cough of 2 months and weight loss. She had repeated respiratory problems before and treated accordingly. She was referred HCT clinic and found to be positive for HIV. On assessment she looks very sick, weighing 65Kg, height of 160cm, MUAC of 19.5cm, has severe palmar pallor, but no edema of legs.
 - a. How will you classify the nutritional status of Nadia? (Is there any additional information you need to classify Nadia? If yes, specify) (The facilitator will provide you the additional information, if any)
 - b. To which care plan Nadia be assigned? Why?
 - c. List the principles of management for Nadia. Please include management principles in addition to nutritional support.

Activity 4.4.8 Nutrition Care for PLHIV on ART - 40 minutes**Activity 4.4.8.1. Effect of Nutrition o ARV and vice versa – 20 minutes****Training Methods: Group Exercise and Discussion (20 minutes)**

- Divide the group into three, assign each group to one of the three assigned topics, and list points related to each topic. Assign Group 1 to discuss the effects of ARV on nutrition, assign Group 2 to discuss the effects of nutrition on ARV, and assign Group 3 to discuss the causes of failure to gain weight.
- Ask one or two of the groups to share their results. Record responses on a flip chart so all participants can see them clearly.
- Ask the larger group session for any additional comments and fill gaps, as needed, using the information below

Information for Facilitators

1. Effects of ARV Drugs on Nutrition
 - Decreased intake due to reduced appetite
 - Nausea and vomiting
 - Direct stimulation of the drug resulting in reduced appetite and hence reduced intake
 - Reduced absorption due to diarrhoea
 - Pancreatitis resulting in abnormal fat absorption and glucose abnormalities
 - Abnormal metabolism; mitochondrial dysfunction interfering with oxidative metabolism of fat resulting into lypoatrophy, lipohyperatrophy.
 - Hyperlipidemia, myocardial infarction, diabetes mellitus
 - Anaemia as a result of the use of the antifolate drugs cotrimoxazole, fansidar, and zidovudine
 - Hypoglycaemia due to quinidine
 - Improved health, resulting in improved appetite
2. Effect of Nutrition on ARV Drugs
 - Increases absorption – EFV increase by high-fat diet leads to toxicity
 - Decreases absorption so that some drugs need to be taken on an empty stomach (e.g., didanosine, certain protease inhibitors)
3. Failure to Gain Weight

Most PLHIV will gain weight once started on ART. Failure to gain weight can result from the following:

 - Failure to take ART correctly, either due to non-adherence or vomiting (severe wasting with other symptoms such as abdominal pain, vomiting, or fast breathing may be a sign of lactic acidosis)

- Early side effects of ART can cause nausea/vomiting, fatigue, and dyspepsia
- Late side effects of ART can cause lipoatrophy, insulin resistance, and lipidemia
- Malnutrition
- Opportunistic infections such as TB
- Immune reconstitution syndrome
- Late ART-related side effects such as lactic acidosis or lipodystrophy
- Inadequate food intake because of inadequate food supply, preparation, or caregiving
- Early signs of treatment failure if on ART for longer than six months

If very low weight persists or the client presents with visible severe wasting or oedema in both feet, depending on resources available:

- **Refer urgently.**
- Assess ART adherence.
- If possible, repeat the CD4 count test to check for immunological failure.
- Investigate for OIs, especially TB, and manage according to national protocols.
- Assess dietary intake and food security. Refer the client to a dietician or social worker if necessary.
- If these resources are not available, refer the client to an ART site for investigation and management.
- If these resources are available, review the client every two to four weeks and monitor weight until the cause of poor weight gain is identified and managed.
- If the client continues to lose weight, refer urgently to an ART site.

⇒ Also monitor the nutritional needs for ART and adherence to other medicines

⇒ Counsel on family planning

⇒ Monitor for food insecurity and link with appropriate support mechanisms

Effect of ARV drug on nutrition

1. Effects of ARV Drugs on Nutrition

- Decreased intake due to reduced appetite
- Nausea and vomiting
- Direct stimulation of the drug resulting in reduced appetite and hence reduced intake
- Reduced absorption due to diarrhoea
- Pancreatitis resulting in abnormal fat absorption and glucose abnormalities
- Abnormal metabolism; mitochondrial dysfunction interfering with oxidative metabolism of fat resulting into lipoatrophy, lipohyperatrophy.
- Hyperlipidemia, myocardial infarction, diabetes mellitus
- Anaemia as a result of the use of the antifolate drugs cotrimoxazole, fansidar, and zidovudine
- Hypoglycaemia due to quinidine
- Improved health, resulting in improved appetite

2. Effect of Nutrition on ARV Drugs

- Increases absorption – EFV increase by high-fat diet leads to toxicity
- Decreases absorption so that some drugs need to be taken on an empty stomach (e.g., didanosine, certain protease inhibitors)

3. Failure to Gain Weight

Most PLHIV will gain weight once started on ART. Failure to gain weight can result from the following:

- Failure to take ART correctly, either due to non-adherence or vomiting (severe wasting with other symptoms such as abdominal pain, vomiting, or fast breathing may be a sign of lactic acidosis)
- Early side effects of ART can cause nausea/vomiting, fatigue, and dyspepsia
- Late side effects of ART can cause lipoatrophy, insulin resistance, and lipidemia
- Malnutrition
- Opportunistic infections such as TB
- Immune reconstitution syndrome
- Late ART-related side effects such as lactic acidosis or lipodystrophy
- Inadequate food intake because of inadequate food supply, preparation, or caregiving
- Early signs of treatment failure if on ART for longer than six months

If very low weight persists or the client presents with visible severe wasting or oedema in both feet, depending on resources available:

- **Refer urgently.**
- Assess ART adherence.
- If possible, repeat the CD4 count test to check for immunological failure.
- Investigate for OIs, especially TB, and manage according to national protocols.
- Assess dietary intake and food security. Refer the client to a dietician or social worker if necessary.
- If these resources are not available, refer the client to an ART site for investigation and management.
- If these resources are available, review the client every two to four weeks and monitor weight until the cause of poor weight gain is identified and managed.
- If the client continues to lose weight, refer urgently to an ART site.

⇒ Also monitor the nutritional needs for ART and adherence to other medicines

⇒ Counsel on family planning

⇒ Monitor for food insecurity and link with appropriate support mechanisms

Activity 4.4.8.2. Dietary management of side effects of common ARV drugs – 20 minutes**Training Methods: Exercise and Discussion (20 minutes)**

- Review the information above on care for PLHIV on ART and answer any questions participants may have.
- Ask participants to refer again to **Handout 22: Case Study**. Ask them to read the information in Part 4 (only) and determine the support they would give Kebede based on the information. Ask them to discuss the challenges likely to be faced.
- Ask one or two groups to share their results. Record responses on a flip chart or the blackboard so all participants can see them clearly.
- Refer to **Handout 26: Drugs Commonly Taken by PLHIV, Likely Side Effects, and Recommended Dietary Practices to Increase Drug Efficacy**.
- Ask the larger group for any additional comments and fill gaps as needed.

Information for Facilitators

Key message. At some point PLHIV need antiretroviral treatment (ART). They still need appropriate and adequate nutrition to achieve the full benefits of ART. Growth of children on ART is a good indicator of response to treatment and ongoing adherence. Although ART can change the way the body uses fats, proteins, and energy, these metabolic changes can generally be managed without stopping treatment.

Key message. ART response could be assessed through clinical (weight and growth), immunological, and virological methods.

Key message. Some drugs interact with food in ways that can affect nutritional status and effectiveness of the drugs. Management of these interactions and adherence to medications is important, and use of drug-food timetables can help. Refer to the messages under Critical Nutrition Practice Number 7 for more information.

Handout 26: Drugs Commonly Taken by PLHIV, Likely Side Effects, and Recommended Dietary Practices to Increase Drug Efficacy

Medication	Purpose	Recommended to be taken with...	Potential side effects
Abacavir (ABC)	Antiretroviral	Can be taken without regard to food.	Nausea, vomiting, fever, allergic reaction, anorexia, abdominal pain, diarrhoea, anaemia, rash, hypotension, pancreatitis, dyspnea, weakness, insomnia, cough, and headache
Didanosine (ddl)	Antiretroviral	With water only, 1 hour before or 2 hours after eating. Avoid alcohol. Do not take with juice or antacid that has aluminium or magnesium.	Anorexia, diarrhoea, nausea, vomiting, pain, headache, weakness, insomnia, rash, dry mouth, loss of taste, constipation, stomatitis, anaemia, fever, dizziness, and pancreatitis.
Efavirenz	Antiretroviral	Can be taken with food, but do not take with a high-fat meal. Avoid alcohol.	Elevated blood cholesterol levels, elevated triglycerides levels, rash, dizziness, anorexia, nausea, vomiting, diarrhoea, dyspepsia, abdominal pain, flatulence
Lamivudine (3TC)	Antiretroviral	Can be taken without regard to food. Avoid alcohol.	Nausea, vomiting, headache, dizziness, diarrhoea, abdominal pain, nasal symptoms, cough, fatigue, pancreatitis, anaemia, insomnia, muscle pain, & rash.
Lopinavir	Antiretroviral	Can be taken without regard to food.	Abdominal pain, diarrhoea, headache, weakness, and nausea. May increase the risk of lipodystrophy and/or diabetes.
Nevirapine (NVP)	Antiretroviral	Can be taken without regard to food.	Nausea, vomiting, rash, fever, headache, skin reactions, fatigue, stomatitis, abdominal pain, drowsiness, paresthesia. High hepatotoxicity.
Ritonavir	Antiretroviral	With a meal if possible.	Nausea, vomiting, diarrhoea, hepatitis, jaundice, weakness, anorexia, abdominal pain, fever, diabetes, headache, dizziness. May increase the risk of lipodystrophy.
Stavudine (d4T)	Antiretroviral	Can be taken without	Nausea, vomiting, diarrhoea,

Medication	Purpose	Recommended to be taken with...	Potential side effects
		regard to food. Limit the consumption of alcohol.	peripheral neuropathy, chills and fever, anorexia, stomatitis, diarrhoea, anaemia, headaches, rash, bone marrow suppression, and pancreatitis. May increase the risk lipodystrophy.
Tenofovir (TDF)	Antiretroviral	With food.	Abdominal pain, headache, fatigue, and dizziness
Zidovudine (AZT)	Antiretroviral	With no food or with a low-fat meal. Do not take with a high-fat meal. Avoid alcohol.	Anorexia, anaemia, nausea, vomiting, bone marrow suppression, headache, fatigue, constipation, fever, dizziness, dyspnea, insomnia, muscle pain, and rash
Isoniazid	Treatment of tuberculosis	Take 1 hour before or 2 hours after meals. May cause possible reactions with foods such as bananas, beer, avocados, liver, smoked or pickled fish, yeast and yogurt. May interfere with vitamin B ₆ metabolism and require vitamin B ₆ supplementation. Avoid alcohol.	Anorexia and diarrhoea.
Rifampin	Treatment of tuberculosis	Take on an empty stomach 1 hour before or 2 hours after meals. Avoid alcohol.	Nausea, vomiting, diarrhoea and loss of appetite.
Fluconazole	Treatment of candida (thrush)	With food	Nausea, vomiting, diarrhoea. Can be used during breastfeeding.
Nystatin	Treatment of thrush	With food	Infrequent occurrence of diarrhoea, vomiting, nausea
Sulfonamides: Sulfamethoxazole, Cotrimoxazole (Bactrim [®] , Septra [®])	Antibiotic for treatment of pneumonia and toxoplasmosis	With food	Nausea, vomiting, and abdominal pain
Chloroquine	Treatment of malaria	With food	Stomach pain, loss of appetite, nausea, vomiting. Not recommended

Medication	Purpose	Recommended to be taken with...	Potential side effects
			for women who are breastfeeding
Quinine	Treatment of malaria	With food	Abdominal or stomach pain, diarrhoea, nausea, vomiting, lower blood sugar
Sulfadoxine and Pyrimethamine (Fansidar [®])	Treatment of toxoplasmosis	With food and continuous drinking of clean boiled water. Folic acid supplementation needed.	Nausea, vomiting, taste loss, and diarrhoea. Not recommended if folate deficient and for women who are breastfeeding.

Source: Adapted from FANTA 2001, Pronsky et al. 2001, Nerad 2003, Castleman et al. 2004, and WHO 2003.

Note to Facilitators: Thank participants for their contributions. Give each participant a copy of Daily Evaluation Form (Day 2). Ask participants to complete the form without their names and leave them turned over on the tables for you to collect.

Daily Evaluation Form (Day 2)

Fill out this form as each topic is completed.

1 = Good 2 = Average 3 = Poor

Topic	Time allocated	Relevance to your work	Support from facilitators	Resources	Contribution to skills improvement	Suggestions
Session 4						
1. Assessment of Malnutrition and associated Morbidity Adults and children						
2. Assessment and Classification of Nutritional Status Adults and children						
3. Nutrition Care Plans for adults and children						
4. Nutrition Care for ART Clients						

End of Day 2

Day 3

Recap of Day 2

Activity 4.4.10 Field Practice and feedback – 2hrs and 40 minutes

Learning Objectives

By the end of the session, participants will be able to: Practice the clinical nutrition management using the algorithm for children and adults

Overview

Field practice in health centers or villages (2 hours)

Feedback on practice session (40 minutes)

Total Time 2 hrs and 40 minutes

Materials

- **Handout 27 : Data Collection Form for Field Practice**
- **Handout 28: Summary Sheet for Field Assessment**

Advance Preparation

- Make an appointment at the health facility in advance to do the field practice during ART follow-up sessions.
- Prepare groups and give instructions the day before.

Detailed Activities

Activity 4.4.12.1 Feedback on Practice Session - 40 minutes

Training Methods: Assessment Exercise and Discussion

- Divide participants in pairs; one will do a nutrition assessment and one will give feedback after the assessment.
- Participants will change roles until each participant does an assessment for adults and children.
- After the assessment when the group gathers again in the training room, each pair of participants will summarize their experience by completing the summary sheet attached to the wall: age, weight, height, BMI, MUAC, history, look and feel, classification, and treatment/care plan.
- Participants will then receive feedback, and the larger group can discuss and summarize the main points.

Handout 27: Data Collection Form for Field Practice

Date (dd/mm/yy)	Age (yrs.)	Sex (M/F)	For women (P/M) (L/M)	Weight (KG)	Height (cm)	BMI (W/H²) use chart	MUAC (cm)

Handout 28: Summary Sheet for Field Assessment

Assess	Client 1	Client 2	Client 3	Client 4	Client 5	Client 6	Client 7	Client 8	Client 9	Client 10
Age										
Sex										
Weight										
Height										
Z-score/% for weight/height										
MUAC (cm)										
BMI (W/H²) Use chart for adults										
For women (P/M) (L/M) for adults										
History										
Look and Feel										
Classification										
Treatment/care plan										

SESSION 5: LINKAGES TO COMMUNITY SUPPORT PROGRAM

Estimated duration: 1 hour

Purpose:

This session introduces participants to the needs of economic strengthening opportunities and other support programs for the malnourished PLIHV and OVC clients; and explains the designed economic strengthening strategies for linkages.

Learning Objectives

By the end of the sessions, participants will be able to:

- State the economic strengthening strategies and opportunities for the FBP beneficiaries
- Explain the role of partners in their areas of intervention for economic strengthening
- Explain the process of referral linkages of beneficiaries from FBP to other services and vice versa

Overview

Activity 5.1: Brain storm on economic strengthening opportunities (20 minutes)

Activity 5.2: Identification of the role of key stakeholders Discussion on mechanisms of linkages of beneficiaries to ES (40 minutes)

Materials

- Economic Support (ES) strategies written on flip chart
- ES linkages system written flip chart
- Flipcharts, marker pens, masking tape

Detail activities

Activity 5.1: Brain storm on economic strengthening opportunities (20 min)

Training Method:

- Ask participants to form a group based on their geographic area
- Ask them to list economic opportunities available in their area
- Summarize and discuss with the larger group using the information for facilitator.

Focus on our strategy (IGA, urban gardening and back to work initiatives)

Information for the facilitator

NACS program provides counselling and nutritional support to malnourished PLHIVs and OVCs. Nonetheless, nutritional support would not address the multifaceted needs and challenges of PLHIVs and OVCs single-handedly, and it would be difficult, if not impossible, to graduate clients from the program and reduce relapse. Thus, the health facilities are expected to link PLHIV clients to a range of community based support program in order to improve their overall nutritional and HIV outcomes and prevent malnutrition and relapse. There are different kinds of community based support programs to mention some: Economic Strengthening opportunities, Livelihood and food security, psychological, and spiritual supports.

Objectives

The linkages aim to strengthen economic and social opportunities of clients in order to graduate clients from the program once their health status is restored so that the limited resource will be used to help others in need. It must also ensure beneficiary graduation after they receive support for the minimum duration necessary to achieve programmatic objectives.

Linkages Designs

The overall linkage will have two phases.

Phase one will be done at woreda, zonal, and regional level in order to have the buy-in of the key stakeholders in the linkage process. The main steps in this phase are:

- ⇒ Mapping of organizations providing community support programs and the type of support
- ⇒ Sensitize the program to the relevant government offices, NGOs, Networks and other key stakeholders.
- ⇒ Explicitly state what is going to be done with the program and what is missing.
- ⇒ Have a consultative discussion and support joint planning for consequent implementation and
- ⇒ Support the establishment of national strategies, protocols and guidelines on linkages.

Phase two will take place at health facility level and the health workers are responsible for the following main activities:

- ⇒ Identifying clients who are in need of economic support.
- ⇒ Referring these clients to the suitable service
- ⇒ Confirming the referral with a written communication; and
- ⇒ Recording the clients referred and secured.

Food Security for Households Affected By HIV/AIDS

Food security means that people at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive life. HIV/AIDS can reduce the food security of PLWHA and affected households. Food insecurity limits the capacity for

nutritional care and support. Ways to improve food security for PLHIV and their affected families should be designed and implemented at the household and community level. The options include:

- ⇒ promote the production and consumption of indigenous foods for diet diversification;
- ⇒ increased production of nutrient rich crops;
- ⇒ Small, income generating activities (IGA);
- ⇒ improve access to appropriate paid labour;
- ⇒ rearing animals both as source of food and income
- ⇒ Linking to Food support programs like title II, WFP,
- ⇒ Link clients to peer support groups of PLHIV and AIDS support organizations such as faith based organizations (FBOs), community based organizations (CBOs) and non-government organizations (NGOs) working in the area:

Activity 5.2: Identification of the role of key stakeholders and discussion on mechanisms of linkages of beneficiaries to ES (40 minutes)

Training Method (group work)

- Using the list the name of organization they provided in activity 10.1
- Explain their expected role
- Design a proposed strategic step for partnership using the instruction for facilitator below
- Discussion on mechanisms of linkages of beneficiaries to ES

Instruction for facilitator

Economic Strengthening Opportunities for Households Affected By HIV/AIDS

Several community and organization level programs aim improving economic strengthening (ES) opportunity for PLHIV clients and their households. Some of the ES interventions to link PLHIV clients include.

- ⇒ Income Generating Activities (IGA)
- ⇒ Urban Gardening

⇒ Back to Work Initiative: involving the public and private sectors in assisting PLHIVs to develop improved livelihoods is another aspect of the graduation strategy of the program.

⇒ Link to PSNP

SESSION 6: LOGISTICS

Estimated duration: 40 minutes

Purpose

In this session the participants will be familiar how to manage, dispense and keep record of Food by Prescription commodities in health facilities to maximize proper utilization and minimize loss.

Learning Objective:

The objective of this training is to provide a brief guideline to health workers:

- how to manage, and dispense Food By Prescription (FBP) commodities
- keep record of the commodities
- maximize proper utilization and minimize loss of the commodities
- strengthen the link between health workers and pharmacists (dispensary)

Stock Transaction, Management and dispensing

Overview

Activity 1: Overview of FBP commodities logistic system (**15 minutes**)

Activity 2: Health workers and pharmacists responsibilities (**15 minutes**)

Activity 3: Dispensing system to clients (**10 minutes**)

Materials

- Flip chart and markers
- Marker pens
- Masking tape

Activity 6.1: Overview of Food by Prescription Program (FBP) commodities logistic system (15 minutes)

Training Methodology- Discussion and summary

- On a flip chart write the steps of Food By Prescription commodities logistic system
- Ask participants to refer **Handout 29: FBP Commodities Logistic System**
- Explain the stapes of FBP commodities logistic system

- Ask participant if they have any question and summarize

Information for the Facilitator

SUPPLY CHAIN MANAGEMENT OF FBP COMMODITIES

Central to Facility level Logistic Management

Nutrition and HIV commodities especially the therapeutic food procurement and distribution mainly uses integrated Pharmaceutical Logistics System (IPLS) for ARV and other HIV commodities of Pharmaceutical Fund and Supply Agency (PFSA). RUTF and FBF are the two main commodities in the pipeline and presumed to be procured optionally from both international and local markets.

In the IPLS, the whole process of commodity movement begins with procurement of commodities based on the national quantification, which is done under the leadership of PFSA in consultation with partners. PFSA stores the commodity in its central warehouse and upon receipt of regional allocation regional hubs or facilities delivers stock to each regional PFSA hubs, which further deliver stocks to respective health facilities up on request by health facilities with nutrition and HIV services.

In the IPLS system, the document that serves to link the health facility and regional PFSA hubs, called Reporting and Requesting Form (RRF) is used. Plumpy’Nut and FBF are enlisted among the pharmaceuticals that are to be reported with consumption and requested for stock every two months. Each health facility is expected to quantify its average monthly consumption and place stock requests accordingly in such a way that it would not run out of stock until the following reporting and requesting period. Each facility is expected to have a maximum stock for 4 months and minimum stock for 2 months depending on its storage capacity. If facilities face untimely stock out situation, they can also place an emergency stock refill to their regional PFSA hubs.

There are other systems to deliver RUTF to facilities, which is through the Regional Health Bureau. In this system, UNICEF delivers to the regional Health Bureaus stores based on their stock report and demand. The RHBs in turn distribute to the health facilities including the health posts.

Facility level logistic management

IPLS has the intra-facility management as well where by products are dispensed through the pharmacy (preferably ART pharmacy) of the facility. Inter Facility Reporting and Requesting Form (IFRR) is the link between the facility store and dispensary unit to record the transaction and dispense of commodities between the store and pharmacy.

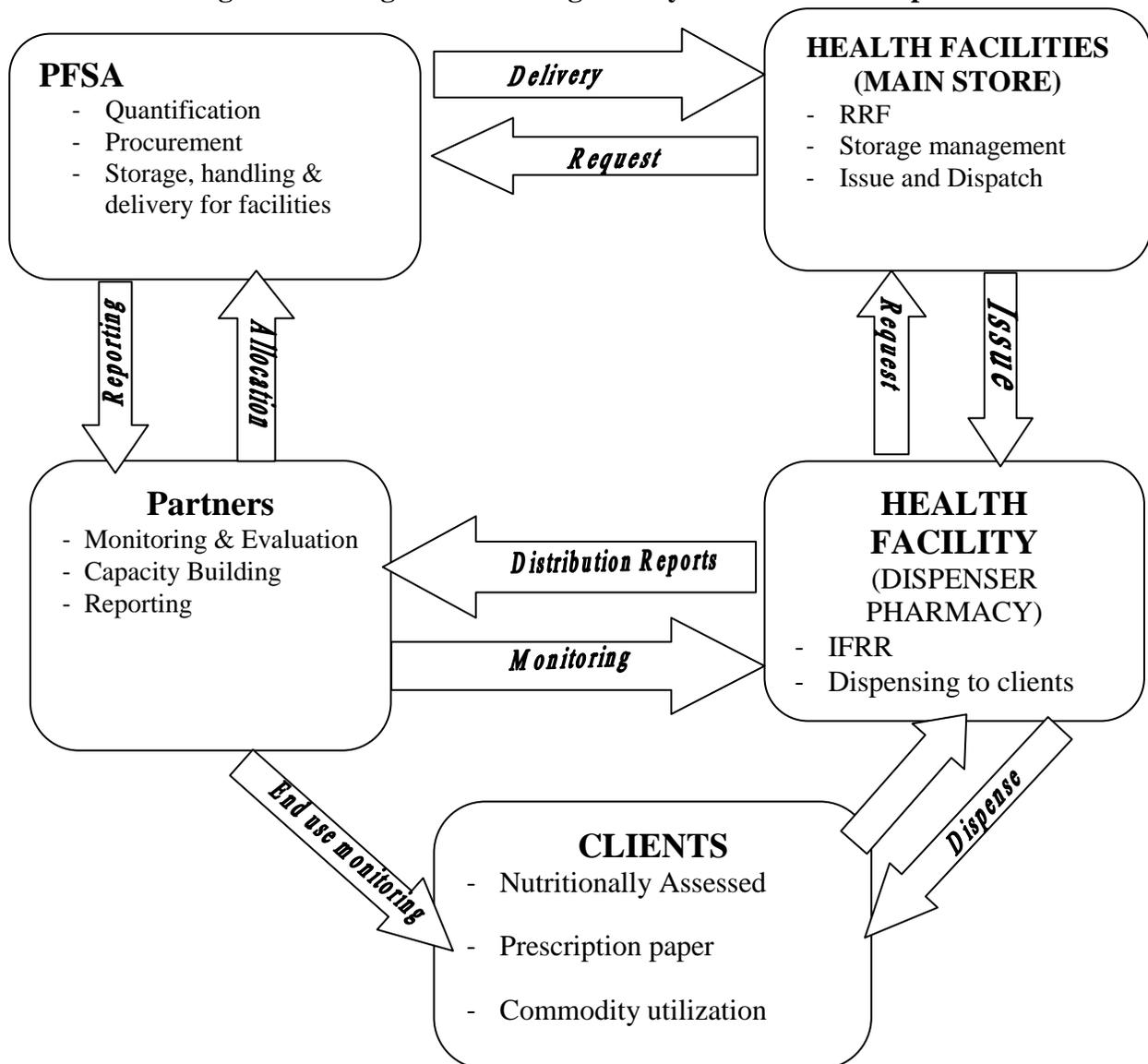
The health worker writes a prescription to the clients based on their nutritional status and the clients receive the commodities from the pharmacy.

Roles and Responsibilities

The role of PFSA is to procure and distribute the commodities to regional hubs and health facilities. They also provide capacity building for the storekeepers and pharmacy staffs. The health facilities are responsible to manage the commodities properly, documentation of consumption record, report timely to PFSA hubs by the RRF, documentation and management of issuing of commodity to the dispensary units by the IFRR and documentation of prescription papers and record keeping of periodic dispensary of the commodity.

Partners will provide technical support in the procurement, distribution, reporting and utilization of commodities and capacity building activities.

Figure 9.1: Diagram of the Logistics System – FBF/ Ethiopia



SESSION 7: MONITORING AND EVALUATION

Estimated time (1 hour and 40 minutes)

Purpose

This session introduces participants to know the importance of monitoring and evaluation in nutrition and HIV program implementation. It also introduces the data collection formats, namely, “the Registration Book and Monthly Reporting Format”, and how to record, analyse and report.

Learning Objectives

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

- Describe the similarities and differences of monitoring and evaluation
- Know Nutrition and HIV/FBP program indicators and their importance
- Describe the contents of Registration Book and Reporting Format
- Record data in the registration book
- Consolidate and report data using the monthly reporting format
- Know the interpretation and analysis of the indicators at facility level

OVERVIEW

- | | |
|--------------|------------------------------------------------------------------------|
| Activity 7.1 | Basics of monitoring and evaluation and indicators (30 min) |
| Activity 7.2 | Introduction to registration book and reporting format (40 min) |
| Activity 7.3 | Data analysis and interpretation (15 min) |
| Activity 7.4 | Reporting (15 min) |

Materials

- Registration book (3/ participant)
- Reporting format (3/participant)
- Case studies
- Materials: flipchart, marker pens, masking tape
- **Handout 32: Case studies**
- **Handout 33: Reporting Formats**
- **Handout 34: Report Flow Structure**

Activity 7.1 Basics of monitoring and evaluation and indicators – 30 minutes

Training methods: Brainstorming and discussion (30 minutes)

- What are the similarities and the differences between monitoring and evaluation?
- What are the possible indicators to monitor Nutrition and HIV/ FBP program?
- Current practice of nutrition and HIV data collection
 - What nutrition data are collected for PLHIV on ART/PreART and for malnourished OVC?
 - How is the information collected? Who is collecting it? When is it collected? How frequently? How it is recorded?? How is it analyzed? What are the challenges?
- Discuss and summarize the National nutrition and HIV/FBP indicators.

Information for facilitators

Monitoring and Evaluation

Monitoring is the routine ongoing assessment of activities applied to assess resources invested (inputs) in the program, services delivered (outputs) by the program, outcomes that are related to the program. Evaluation is non-routine assessment and is concerned with the extent to which desired changes have occurred in the light of program objectives, and whether the project is responsible for such changes.

Monitoring and evaluation (M&E) information are used to inform and improve program design, management and supervision. Collection of nutrition-related information from clients is an important component of nutritional care and support that helps increase awareness among PLHIV, counsellors and other service providers about a client's diet and nutritional status, thereby supporting care, treatment and counselling processes.

The Objectives are to:

- Assess the quantity, quality and timeliness of program inputs;
- Verify that inputs are transformed, through activities, into outputs that generate results;
- Provide information to improve targeting;
- Identify operational constraints to program effectiveness thus helping managers to improve implementation;

- Determine if a process or service, such as counselling, clients flow and care, is meeting national or some other accepted/set quality standards;
- Determine whether a program is servicing the target groups.
- Redesign an on-going program or shape a new program;
- Identify impacts that are attributable to a program

Nutritional Assessment Care and Support (NACS) Indicators

An indicator is a pre-determined signal that a specific point in a process has been reached or result achieved. The nature of the signal will depend on what is being tracked and needs to be very carefully chosen. In management terms, an indicator is a variable that is used to assess the achievement of results in relation to the stated goals/objectives.

Monitoring and evaluation exercise cannot be commenced without the use of indicators. For each NACS input, process, output, outcome and impact to be measured, a verifiable and measurable indicator is identified. This enables to monitor each stage of the program implementation and identify gaps that may require additional attention or resources. The following are the selected programmatic indicators for NACS to measure the progress made as a result of NACS interventions:

- Number of clients clinically assessed for malnutrition
- Number of clients clinically assessed and found to be severely malnourished
- Number of clients clinically assessed and found to be moderately malnourished
- Number of clients who received nutritional counselling
- Number of clients who received therapeutic and/or supplementary food
- Number of clients graduated during the reporting period
- Number of clients who were lost to follow up
- Number of clients who died during the reporting period
- Number of clients defaulted from the service
- Number of clients who are non-responders
- Number of clients linked to economic strengthening or other services during the reporting period

Activity 7.2 Recording and reporting using registration book and reporting format (40 min)

Activity 7.2.1 Recording in the registration book – 20 minutes

Training methods :Group work and discussion (20 minutes)

- Ask participant to form group of 7 participant
- Distribute copies of the registration book and reporting formats to participants
- Introduce the registration book using one of the data they have collected

during the field visit

- Ask them refer to **Handout 32: Case studies** and fill in the case studies in the registration book
- Provide feedback to each group
- In plenary, ask them to provide comments on the usefulness and challenges of the registration book at their workplace

Information to facilitator

Standardized Recording and Reporting system

To generate the above listed indicators, it is important to have a uniform data collection and reporting system. Standard recording and reporting ensures that key information gets stored. This helps in: easy retrieval by care providers to get an overview of the patient's progress over time; exchange of information between the different health care providers as well as with partner staff; and facilitate compilation and comparison of indicators at different levels, and most importantly measure the progress made by each patient and the program itself. The NACS M&E tools are registration and book periodic reporting format

Registration Book

There are two types of patient recording tools for NACS: 1) Therapeutic Feeding Program(TFP) inpatient and OTP card and TFP Registration book: it is used for children under five years with SAM (See the National Protocol for the Management of SAM); 2) NACS registration book: it is used for Children/adolescents >5-17 years with MAM and PLHIV adults with MAM and SAM.

The NACS registration book contains information on:

- (a) Routine performance indicators that are indicated above
- (b) Patient management – such as follow up of patients
- (c) In-depth analysis – such as measuring outcomes etc

The register book contains information for a certain number of patients at a time. Each row in the register contains complete information about a patient. It helps to keep track of the patient's baseline and follow-up care and treatment history.

The register book is used from the time of patient admission evaluation to treatment through successive visits to graduation, based on the discharge criteria. It contains key individual information like anthropometric measures and nutritional status, nutritional counselling, nutritional support/ therapeutic information and outcomes of treatment

(death, recovered, defaulted, lost to follow up, non-responders and transfers). It is cross-linked to the ART card to get more additional information about the client.

In the process this register will be part of the ART/Pre ART and future nutrition registers of HMIS. Successive columns are filled for each visit/every month until the patient graduates from the program.

Monthly/Quarterly Reporting (Periodic Reporting Format)

The Monthly Quarterly service delivery report inform health providers, facility heads, and program managers at federal, regional, and woreda level about the status and quality of an NACS service provision during the reporting period. It helps to assess the performance, and identify gaps and take informed remedial actions on the program.

The NACS program Monthly Report compiles the indicators at one point in time (at the end of each month). The indicator describes the cumulative number of clients disaggregated by age sex and type of service they obtained for the reporting period. Existing clients and new clients, age, sex and adult female disaggregate it being further sub – categorized into PMTCT (pregnant/postpartum).

The service delivery coverage report will be compiled on a monthly basis, within 3 - 5 days after the end of the reporting month

Handout 32: Case Studies

Reg.#	Name	Age mm/YY	Sex	HIV Status	Admission/1 st visit	2 nd visit	3 rd visit	4 th visit	5 th visit	6 th visit
1	Gadissa Geteta	30 mm	M	-ve	MUAC =10.8 cm No Oedema Idii bbvbbdaaaNNN No medical complication pass appetite test	MUAC =11.4cm No Oedema No medical complication and pass appetite test	MUAC =11.8 cm No Oedema No medical complication and pass appetite test	MUAC =12.4 cm No Oedema No medical complication Appetite test=pass	MUAC =13.cm No Oedema No medical complication Appetite test=pass	MUAC =13.6 cm No Oedema No medical complication Appetite test=pass
2	Hadas Kirose	62 mm	F	+ve	MUAC =12.8 cm No Oedema No medical complication pass appetite test	MUAC =13.1 cm No Oedema No signs of symptomatic disease appetite test=pass	MUAC =13.5 cm No Oedema No medical complication appetite test=pass	Absent	Absent	MUAC =12.4cm No Oedema Has cough for 2 weeks, fever and apatite test =failed
3	Lamiso Bonja	27 yy	M	+ve	BMI =17.2 No Oedema No signs of symptomatic disease	BMI =17.6 No Oedema No medical complication pass appetite test	BMI =18 No Oedema No signs of symptomatic disease appetite test=pass	BMI=18.6 Oedema No signs of symptomatic disease appetite test =pass		
4	Bekabil Salelew	34 yy	M	+ve	BMI = 15.2 Has signs of symptomatic disease	BMI =14.6 No improvement in his clinical condition	Absent	Absent	Home care givers found that the person was died during last month	
5	Tesfsansh Alemu	25mm	F	+ve	MUAC 11.3cm No oedema No medical complication His weight decreased in the last two consecutive follow up Appetite test =pass	MUAC 11.6cm No oedema No medical complication Appetite test =pass	MUAC 12cm No oedema No medical complication Appetite test =pass	MUAC 12.2 cm No oedema No medical complication Appetite test =pass	MUAC 12.4cm No oedema No medical complication Appetite test =pass	MUAC 12.6cm No oedema No medical complication Appetite test =pass

Sub activity 7.2.2. Compile data using reporting format – 20 minutes

Training methods: Group discussion (20 minutes)

- Ask the group to stay in the same group
- Ask them to refer to **Handout 33 Reporting Format**
- Ask to prepare a monthly report from the registration book they filled in activity **7.2.1.**
- Provide feedback to each group
- In plenary, ask them if they have any difficulties to use the reporting format

Handout 33: Reporting Format

Region _____

Zone _____

Woreda _____

Name of the health facility: _____

Reported by: _____

Reporting period (_____/_____/_____) to (_____/_____/_____)

Indicator/Activity	Existing Clients					New Clients					Total						
	Children (< 18 years)		Adults (>= 18 years)			Children (<18 Years)		Adults (>= 18 years)			Children (<18 Years)			Adults (>=18 Years)			
	Sex		Sex			Sex		Sex			Sex			Sex			
	M	F	M	Pregnant/ Postpartum (PMTCT)	Others	M	F	M	Pregnant/ Postpartum (PMTCT)	Others	M	F	Total	M	Pregnant/ Postpartum (PMTCT)	Others	Total
Number of clients assessed for malnutrition																	
Number of clients clinically assessed and found to be severely malnourished																	
Number of clients clinically assessed and found to be moderately malnourished																	
Number of clients who received nutritional counselling																	
Number of clients who received therapeutic and/or supplementary food																	
Number of clients graduated during the reporting period																	
Number of clients who were lost to follow up																	
Number of clients defaulted from the service																	
Number of clients died during the reporting period																	
Number of clients linked to ES or other services during the reporting period																	

Activity 7.3 Data analysis and interpretation (15 min)

Training methods : Group Work

- Ask the group to stay in the same group
- Ask them to analyze the data they have prepared in activity 7.2.2
- Provide feedback to each group
- In plenary, ask them if they have any difficulties

Information to Facilitators

Data Analysis and Interpretation

The data collected must be utilized daily by the health provider to monitor the clients Progress and monthly by the health facilities to assess the performance of the program. It should also be utilized by the woreda, Zonal, and regional level quarterly.

There should also be a Data Quality Assurance mechanism to periodically improve the reliability, completeness, and quality of the NACS data.

Activity 7.4 Reporting – 15 minutes

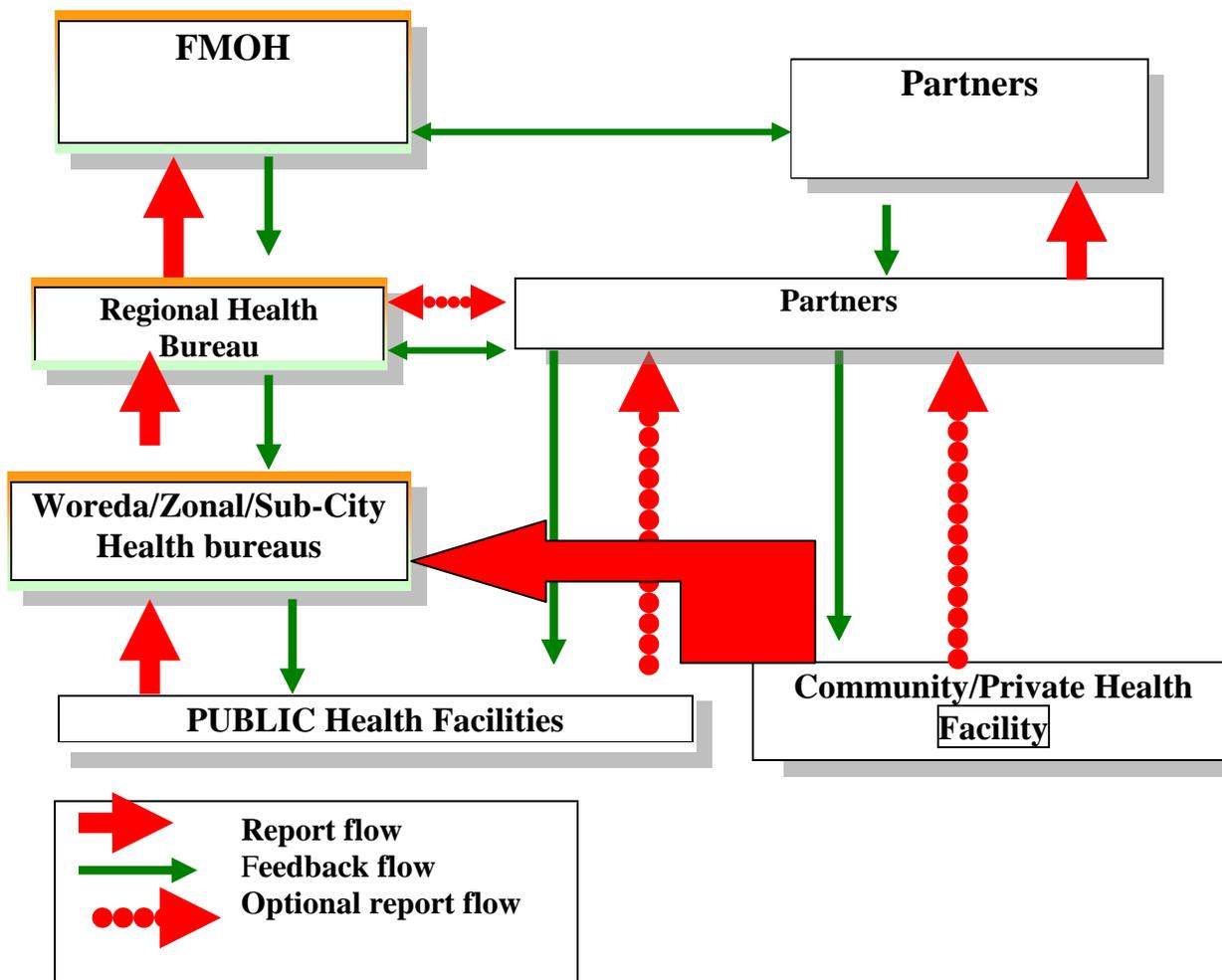
Reporting

The reporting flow summarized in the flow chart shows how the data recorded and collated can effectively flow from the service delivery level to the higher levels responsible for supervision of programs (Zonal, regional, and federal) and share to partners. It should be aligned with HMIS reporting.

Table 7.1: Data Reporting by level and timing

Facilities level	Woreda / zone level	Monthly
Woreda / zone level	Regional level	Quarterly
Regional level	MoH/Federal level	Quarterly

Figure 7.1: REPORT FLOW STRUCTURE



SESSION 8: POST-TEST AND EVALUATION OF TRAINING

Estimated Duration: 1 hour

Purpose

In this session, participants will take a post-test to assess their knowledge of clinical nutrition care for PLHIV and evaluate the course.

Learning Objectives

By the end of the session participants will have:

- Evaluated whether their knowledge of nutrition and HIV has improved
- Evaluated the training on Clinical Nutrition for PLHIV

Overview

Activity 8.1 Post-test (30 minutes)

Activity 8.2 Evaluation of Course (30 minutes)

Materials

- **Handout 35:** Post-test
- **Handout 36:** Course Evaluation Form

Note to Facilitators: Present an overview of the objectives of the session and the time allocated.

Detailed Activities

Activity 8.1 Post-test (30 minutes)

Training Method: Test and Discussion (30 minutes)

- Thank participants for their participation in the training.
- Give each participant a copy of **Handout 35: Post-test**.
- Ask participants to write their code numbers (previously assigned by random drawing of numbers) on the post-test, but not their names.
- Ask participants to complete the post-test individually. Give a time limit of 30 minutes.

Activity 8.2 Course and daily Evaluation (30 minutes)

Training Method: Evaluation Exercise

- Distribute **Daily course evaluation form (Day 3)** and **Handout 36: Course Evaluation Form** to each of the participants and ask them to complete the form without writing their names on it.
- Explain that their suggestions will be used to improve future workshops.

Handout 35: Post-test for Clinical Nutrition Care for PLHIV Course**Direction:** Circle one correct answer.**Participant's Code:**

1. Using one of the following communication skills **may not be always necessary** during our interaction with clients;
 - a. Sitting at the same level
 - b. Looking in the eyes
 - c. Taking time to listen
 - d. Touching the client
 - e. Avoiding barriers
2. One of the followings **is not true** about verbal communications
 - a. Closed ended questions are important to get quick answers and solve client's problem
 - b. Open ended questions allow the client to express his feelings
 - c. One should pay attention to what the client talks only
 - d. Gestures like nodding of the head is important in communicating with our clients
 - e. "a" and "c" are not true
3. One of the followings **is true** about counseling
 - a. Is always a one-on-one session
 - b. Counseling is all about teaching and giving advice to the client
 - c. Focuses on behavioral change
 - d. Addresses only the clients role in behavior change
 - e. Clients are told what to do
4. The followings **are true** about HIV and nutrition **except**,
 - a. All HIV infected individuals are at risk of weight loss and malnutrition
 - b. HIV increases the bodies energy need and therefore patients should eat more frequently than uninfected individuals
 - c. HIV infected individuals need high amount of proteins and vitamins
 - d. Eating different kinds of foods ensures getting a balanced diet
 - e. Mal-absorption may be a cause for malnutrition
5. One of the following **is false** about the impacts of malnutrition on HIV
 - a. Decreases CD4 count
 - b. Increases viral load
 - c. Impairs response to ART
 - d. Increases mother to child transmission of HIV in pregnant women
 - e. Malnutrition does not predispose to opportunistic infections
6. **Critical Nutrition Practices** for PLHIV include the followings **except**;
 - a. Regular nutritional assessment
 - b. Drinking plenty of clean and safe water
 - c. Doing regular physical exercise
 - d. Using herbal medications to treat HIV related symptoms
 - e. Eating variety of foods
7. The following messages help PLHIV to increase their energy intake and meet micronutrient requirements **except**,

- a. Eat locally available and affordable foods
 - b. Eat five times a day (three meals and two snacks-“mekses”)
 - c. Eat adequate amount of food, at least two cups of food (70ml) at each meal
 - d. Eat food from the different food types at each meal including fruits and vegetables
 - e. Eat high protein diet like meat, eggs and chicken at each meal
8. Dietary management of diarrhea include,
- a. Drinking lots of fluid (soups, boiled water, tea)
 - b. Eating foods rich in soluble fiber (banana, peas and lentils)
 - c. Consuming fermented foods like porridges and yoghurt
 - d. Consuming easily digestible rice, bread, potato, porridge, maize
 - e. All
9. Patients with nausea and vomiting should
- a. Eat small and frequent meals
 - b. Eat salty and dry foods to calm the stomach
 - c. Avoid spicy and fatty foods
 - d. Avoid caffeine (tea/coffee) and alcohol
 - e. All of the above
10. Muscle wasting in PLHIV can be prevented by all of the following **except**,
- a. regular weight bearing exercise
 - b. consuming adequate amount of food
 - c. eating variety of foods
 - d. eating excess amount of protein
 - e. increasing frequency and density of meals
11. The following anthropometric indicators are used to assess nutritional status in children less than 5 years **except**,
- a. Weight for height (W/H)- Z-Score
 - b. Mid-Upper Arm Circumference (MUAC)
 - c. BMI (Body Mass Index) for age
 - d. Weight-for-height - percentage
 - e. Weight for age
12. Nutritional status of pregnant women is **best** assessed by
- a. BMI
 - b. W/H- Z score
 - c. MUAC
 - d. “a” and “c”
 - e. All
13. One of the following anthropometric criteria is true about a 4 year old child classified as having severe malnutrition,
- a. BMI for age less than -3 standard deviation (SD)
 - b. W/H Z-Score < -3 SD
 - c. MUAC between 12.5 – 13.5CM
 - d. W/H percentage between 70 and 80% of the median
 - e. None

14. One of the following anthropometric criteria is true about a pregnant woman classified as having severe malnutrition;
 - a. BMI of 19
 - b. MUAC of less than 18 CM
 - c. MUAC of 22 CM
 - d. BMI of 18
 - e. None of the above
15. An adult with a BMI of less than 16 will be classified as having
 - a. Severe malnutrition
 - b. Moderate malnutrition
 - c. Mild malnutrition
 - d. Normal
 - e. None
16. One of the following points is important when measuring the weight of a child
 - a. the pointer should indicate at “Zero”
 - b. Cloths should be kept to the minimum
 - c. Ensure using an appropriate scale
 - d. Record the weight to the nearest 0.1kg immediately after weighing
 - e. All are important
17. One of the following points is important when measuring height
 - a. Shoes must be removed always
 - b. The heels, buttocks and shoulder blades should touch the wall
 - c. Caps should be removed
 - d. Hair should be gently pressed down with the rules
 - e. All of the above
18. Clinical signs of severe wasting include the followings **except**,
 - a. Loss of subcutaneous fat
 - b. Loss of muscle bulk around the shoulders, arms and buttocks
 - c. Sagging skin
 - d. Small hips compared to chest and abdomen
 - e. Small abdomen compared to the hips
19. According to the **National Algorithm for the Management of Malnutrition in PLHIV**, clients eligible for Nutrition Care Plan A have one of the following classifications,
 - a. Severe malnutrition with complication
 - b. Severe malnutrition without complication
 - c. Moderate malnutrition with complications
 - d. All of the above
 - e. “a” and “c” only
20. According to the **National Algorithm for the Management of Malnutrition in PLHIV**, clients eligible for Nutrition Care Plan B have the following classifications,
 - a. Moderate malnutrition without complication
 - b. Signs of symptomatic disease
 - c. Significant weight loss for adults
 - d. Poor weight gain for children

- e. All of the above
21. One of the followings **is true** about “**Appetite Test**” **except**
- It is conducted to decide whether admission is needed or not
 - If the patient fails the test it should be repeated the next day to decide admission
 - It should be conducted in a quiet place
 - The test may take one hour
 - Appetite test should be done for adults also
22. The followings **are true** about the management of severe malnutrition in children > 6 months of age **except**,
- Patients with severe malnutrition without complication and good appetite can be managed as an outpatient
 - F100 is used during phase 1 management
 - F75 is used during phase 1 management
 - Those with poor appetite should be managed as an inpatient
 - Ready-to- use- therapeutic food (RUTF) is introduced during the transition phase
23. The daily caloric requirement for healthy individuals above the age of 18 years is
- 1000 to 1500 Kcal
 - 2170 to 2430 Kcal
 - 3000 – 4000 Kcal
 - 60 -80 Kcal
 - None
24. The average energy values in Kcal of 100grams of “**Teff**”, “**Yabesha dinich**” and **raw beef meat** is **correctly expressed** in the following sequences;
- 500, 200, 300
 - 0, 100, 300
 - 50, 75, 100
 - 350, 100, 100
 - 100, 100, 350
25. The energy density of food can be increased by adding
- Butter
 - Oil
 - Sugar
 - all
 - None

Daily Evaluation Form (Day 3)

1 = Good 2 = Average 3 = Poor

Topic	Time allocated	Relevance to your work	Support from facilitators	Resources	Contribution to skills improvement	Suggestions
Session 4						
1. Field practice						
2. Feedback from the field						
Session 5						
1. Logistics						
Session 6						
1. Monitoring and Evaluation						
Session 7						
1. Training Course Evaluation						

Handout 36: Course Evaluation Form

1 = Excellent 2 = Very good 3 = Average 4 = Poor 5 = Very poor

Issue to be evaluated	Score (1–5)	Comments/suggestions
Timeliness of invitation letters		
Ease of travel to the training venue		
Conduciveness of the training venue to learning and skills practice		
Adequacy of space for group work		
Usefulness and ease of use of handouts		
Daily starting time		
Daily ending time		
Preparedness of facilitators/trainers		
Duration of the course		
Meals		
Accommodation (if applicable)		

Annex 1: WATER SANITATION AND HYGIENE (WASH) PRACTICES FOR PLHIV

(Adopted from the draft National WASH/HIV Guidelines)

Water, sanitation and hygiene (WASH) practices are essential for maintaining health for people living with HIV (PLHIV), and also to prevent caregivers and other household members from contracting water-related diarrheal diseases. WASH practices are scientifically proven simple and doable practices which can be implemented by PLHIV at household level. They are very effective in reducing diarrheal diseases. WHO and USAID recommend them to be part of all HIV related Guidelines.

A Meta-analysis of studies shows hand washing, point of use water treatment and sanitation reduce the occurrence of diarrheal diseases by 44%, 35% and 32% respectively

WASH Needs and Recommended Practices for PLHIV

1. Water Quality

WASH programmes are providing potable water and help to ensure transport and storage practices are safe. However, even where a reliable source of safe water is available, it is often difficult to assure safe transport, storage and handling practices. Therefore it is recommended to treat drinking water at the point of use from all sources including piped water and promote safe storage practices. The four main techniques of treating water are chlorination, boiling, solar disinfection and filtration. Grossly turbid water or water which has more than five nephelometric turbidity units (NTU) should be treated with flocculent and disinfectant. To increase user acceptability, turbid water can be filtered through a cloth first if there is large size suspended particles. On the other hand, clean water needs to be treated with disinfectant only. It should be noted that whatever method is used, the treated water should always be stored in an appropriate vessel. The ideal option to store treated water is a closed container with a tap or spigot. When this is not available, a narrow neck container or jerry can with a lid or 'ensra' (clay pot) with proper cover is an alternative.

2. Sanitation

PLHIV who are too sick or too weak to use a latrine may need special equipment at home or material inside the toilet facility to give support. For example, appropriate bedside commodes or bedpans may help those who are too sick to go to a latrine, and squatting poles or stools may support a weak person using a conventional latrine. These technologies and approaches were tested with weak and bedbound PLHIV in Ethiopia and were found to be useful.

3. Hand Washing

Washing hands with soap prevents diarrhea effectively when done properly and at critical times. If soap is not available, an abrasive substance such as ash can be used. PLHIV will benefit more by washing their hands following the correct procedure at critical times (before preparing food, before feeding a child, before breastfeeding, before eating, after defecating, after cleaning a baby or changing a diaper, and before and after cleaning a person who is chronically ill).

4. Food Safety

Proper food handling and storage, combined with food, water and utensils management, is vital for maintaining a hygienic condition and preventing illnesses like diarrhea. This is particularly important for PLHIV and it is recommended that they follow the five steps recommended by WHO so that they keep their food in hygienic condition.

5. Menstrual Management

Menstrual blood of HIV positive women contains the HIV virus, sometimes at a higher viral load than regular blood. Thus, HIV positive women and their caregivers must prevent HIV virus transmission from menstrual blood by appropriate disposal of sanitary pads, towels, rags, animal hide (leather) or cloth soaked with menstrual blood. Soiled materials that will be reused must be cleaned properly. Blood-soaked materials that cannot be reused must be completely burned or discarded in a pit

latrine. It is likely that increased quantities of water are needed to care for the woman's personal hygiene and to clean blood soiled rags and bed sheets of bedbound women.

Annex 2: BMI Chart for Adults for Use in Ethiopia

BODY MASS INDEX (BMI)

200	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5	16.0	16.5	17.0	17.5	18.0	18.5	19.0	19.5	20.0	20.5	21.0	21.5	22.0	22.5	23.0	23.5	24.0	24.5	25.0	25.5	26.0	26.5	27.0	27.5	28.0	28.5	29.0	29.5	30.0
198	9.2	9.7	10.2	10.7	11.2	11.7	12.2	12.8	13.3	13.8	14.3	14.8	15.3	15.8	16.3	16.8	17.3	17.9	18.4	18.9	19.4	19.9	20.4	20.9	21.4	21.9	22.4	23.0	23.5	24.0	24.5	25.0	25.5	26.0	26.5	27.0	27.5	28.1	28.6	29.1	29.6	30.1	30.6
196	9.4	9.9	10.4	10.9	11.5	12.0	12.5	13.0	13.5	14.1	14.6	15.1	15.6	16.1	16.7	17.2	17.7	18.2	18.7	19.3	19.8	20.3	20.8	21.3	21.9	22.4	22.9	23.4	23.9	24.5	25.0	25.5	26.0	26.6	27.1	27.6	28.1	28.6	29.2	29.7	30.2	30.7	31.2
194	9.6	10.1	10.6	11.2	11.7	12.2	12.8	13.3	13.8	14.3	14.9	15.4	15.9	16.5	17.0	17.5	18.1	18.6	19.1	19.7	20.2	20.7	21.3	21.8	22.3	22.9	23.4	23.9	24.4	25.0	25.5	26.0	26.6	27.1	27.6	28.2	28.7	29.2	29.8	30.3	30.8	31.4	31.9
192	9.8	10.3	10.9	11.4	11.9	12.5	13.0	13.6	14.1	14.6	15.2	15.7	16.3	16.8	17.4	17.9	18.4	19.0	19.5	20.1	20.6	21.2	21.7	22.2	22.8	23.3	23.9	24.4	25.0	25.5	26.0	26.6	27.1	27.7	28.2	28.8	29.3	29.8	30.4	30.9	31.5	32.0	32.6
190	10.0	10.5	11.1	11.6	12.2	12.7	13.3	13.9	14.4	15.0	15.5	16.1	16.6	17.2	17.7	18.3	18.8	19.4	19.9	20.5	21.1	21.6	22.2	22.7	23.3	23.8	24.4	24.9	25.5	26.0	26.6	27.1	27.7	28.3	28.8	29.4	29.9	30.5	31.0	31.6	32.1	32.7	33.2
188	10.2	10.8	11.3	11.9	12.4	13.0	13.6	14.1	14.7	15.3	15.8	16.4	17.0	17.5	18.1	18.7	19.2	19.8	20.4	20.9	21.5	22.1	22.6	23.2	23.8	24.3	24.9	25.5	26.0	26.6	27.2	27.7	28.3	28.9	29.4	30.0	30.6	31.1	31.7	32.3	32.8	33.4	34.0
186	10.4	11.0	11.6	12.1	12.7	13.3	13.9	14.5	15.0	15.6	16.2	16.8	17.3	17.9	18.5	19.1	19.7	20.2	20.8	21.4	22.0	22.5	23.1	23.7	24.3	24.9	25.4	26.0	26.6	27.2	27.7	28.3	28.9	29.5	30.1	30.6	31.2	31.8	32.4	33.0	33.5	34.1	34.7
184	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	15.9	16.5	17.1	17.7	18.3	18.9	19.5	20.1	20.7	21.3	21.9	22.4	23.0	23.6	24.2	24.8	25.4	26.0	26.6	27.2	27.8	28.4	28.9	29.5	30.1	30.7	31.3	31.9	32.5	33.1	33.7	34.3	34.9	35.4
182	10.9	11.5	12.1	12.7	13.3	13.9	14.5	15.1	15.7	16.3	16.9	17.5	18.1	18.7	19.3	19.9	20.5	21.1	21.7	22.3	22.9	23.5	24.2	24.8	25.4	26.0	26.6	27.2	27.8	28.4	29.0	29.6	30.2	30.8	31.4	32.0	32.6	33.2	33.8	34.4	35.0	35.6	36.2
180	11.1	11.7	12.3	13.0	13.6	14.2	14.8	15.4	16.0	16.7	17.3	17.9	18.5	19.1	19.8	20.4	21.0	21.6	22.2	22.8	23.5	24.1	24.7	25.3	25.9	26.5	27.2	27.8	28.4	29.0	29.6	30.2	30.9	31.5	32.1	32.7	33.3	34.0	34.6	35.2	35.8	36.4	37.0
178	11.4	12.0	12.6	13.3	13.9	14.5	15.1	15.8	16.4	17.0	17.7	18.3	18.9	19.6	20.2	20.8	21.5	22.1	22.7	23.4	24.0	24.6	25.2	25.9	26.5	27.1	27.8	28.4	29.0	29.7	30.3	30.9	31.6	32.2	32.8	33.5	34.1	34.7	35.3	36.0	36.6	37.2	37.9
176	11.6	12.3	12.9	13.6	14.2	14.9	15.5	16.1	16.8	17.4	18.1	18.7	19.4	20.0	20.7	21.3	22.0	22.6	23.2	23.9	24.5	25.2	25.8	26.5	27.1	27.8	28.4	29.1	29.7	30.3	31.0	31.6	32.3	32.9	33.6	34.2	34.9	35.5	36.2	36.8	37.4	38.1	38.7
174	11.9	12.6	13.2	13.9	14.5	15.2	15.8	16.5	17.2	17.8	18.5	19.2	19.8	20.5	21.1	21.8	22.5	23.1	23.8	24.4	25.1	25.8	26.4	27.1	27.7	28.4	29.1	29.7	30.4	31.0	31.7	32.4	33.0	33.7	34.4	35.0	35.7	36.3	37.0	37.7	38.3	39.0	39.6
172	12.2	12.8	13.5	14.2	14.9	15.5	16.2	16.9	17.6	18.3	18.9	19.6	20.3	21.0	21.6	22.3	23.0	23.7	24.3	25.0	25.7	26.4	27.0	27.7	28.4	29.1	29.7	30.4	31.1	31.8	32.4	33.1	33.8	34.5	35.2	35.8	36.5	37.2	37.9	38.5	39.2	39.9	40.6
170	12.5	13.1	13.8	14.5	15.2	15.9	16.6	17.3	18.0	18.7	19.4	20.1	20.8	21.5	22.1	22.8	23.5	24.2	24.9	25.6	26.3	27.0	27.7	28.4	29.1	29.8	30.4	31.1	31.8	32.5	33.2	33.9	34.6	35.3	36.0	36.7	37.4	38.1	38.8	39.4	40.1	40.8	41.5
168	12.8	13.5	14.2	14.9	15.6	16.3	17.0	17.7	18.4	19.1	19.8	20.5	21.3	22.0	22.7	23.4	24.1	24.8	25.5	26.2	26.9	27.6	28.3	29.1	29.8	30.5	31.2	31.9	32.6	33.3	34.0	34.7	35.4	36.1	36.8	37.6	38.3	39.0	39.7	40.4	41.1	41.8	42.5
166	13.1	13.8	14.5	15.2	16.0	16.7	17.4	18.1	18.9	19.6	20.3	21.0	21.8	22.5	23.2	24.0	24.7	25.4	26.1	26.9	27.6	28.3	29.0	29.8	30.5	31.2	31.9	32.7	33.4	34.1	34.8	35.6	36.3	37.0	37.7	38.5	39.2	39.9	40.6	41.4	42.1	42.8	43.5
164	13.4	14.1	14.9	15.6	16.4	17.1	17.8	18.6	19.3	20.1	20.8	21.6	22.3	23.1	23.8	24.5	25.3	26.0	26.8	27.5	28.3	29.0	29.7	30.5	31.2	32.0	32.7	33.5	34.2	34.9	35.7	36.4	37.2	37.9	38.7	39.4	40.2	40.9	41.6	42.4	43.1	43.9	44.6
162	13.7	14.5	15.2	16.0	16.8	17.5	18.3	19.1	19.8	20.6	21.3	22.1	22.9	23.6	24.4	25.1	25.9	26.7	27.4	28.2	29.0	29.7	30.5	31.2	32.0	32.8	33.5	34.3	35.1	35.8	36.6	37.3	38.1	38.9	39.6	40.4	41.2	41.9	42.7	43.4	44.2	45.0	45.7
160	14.1	14.8	15.6	16.4	17.2	18.0	18.8	19.5	20.3	21.1	21.9	22.7	23.4	24.2	25.0	25.8	26.6	27.3	28.1	28.9	29.7	30.5	31.3	32.0	32.8	33.6	34.4	35.2	35.9	36.7	37.5	38.3	39.1	39.8	40.6	41.4	42.2	43.0	43.8	44.5	45.3	46.1	46.9
158	14.4	15.2	16.0	16.8	17.6	18.4	19.2	20.0	20.8	21.6	22.4	23.2	24.0	24.8	25.6	26.4	27.2	28.0	28.8	29.6	30.4	31.2	32.0	32.8	33.6	34.4	35.3	36.1	36.9	37.7	38.5	39.3	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1
156	14.8	15.6	16.4	17.3	18.1	18.9	19.7	20.5	21.4	22.2	23.0	23.8	24.7	25.5	26.3	27.1	27.9	28.8	29.6	30.4	31.2	32.1	32.9	33.7	34.5	35.3	36.2	37.0	37.8	38.6	39.4	40.3	41.1	41.9	42.7	43.6	44.4	45.2	46.0	46.8	47.7	48.5	49.3
154	15.2	16.0	16.9	17.7	18.6	19.4	20.2	21.1	21.9	22.8	23.6	24.5	25.3	26.1	27.0	27.8	28.7	29.5	30.4	31.2	32.0	32.9	33.7	34.6	35.4	36.3	37.1	37.9	38.8	39.6	40.5	41.3	42.2	43.0	43.9	44.7	45.5	46.4	47.2	48.1	48.9	49.8	50.6
152	15.6	16.4	17.3	18.2	19.0	19.9	20.8	21.6	22.5	23.4	24.2	25.1	26.0	26.8	27.7	28.6	29.4	30.3	31.2	32.0	32.9	33.8	34.6	35.5	36.4	37.2	38.1	39.0	39.8	40.7	41.6	42.4	43.3	44.1	45.0	45.9	46.7	47.6	48.5	49.3	50.2	51.1	51.9
	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110	112	114	116	118	120

< 16 = Severe Malnutrition

16-18.5 = Underweight

18.5-24.9 = Normal

25-29.9 = Overweight

Source: Adapted from National Guideline for HIV/AIDS and Nutrition

