The Federal Democratic Republic of Ethiopia
Ministry of Health

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

Trainers Manual

A Three day Training Course
for Clinical Care Providers

September 2008

LIST OF HANDOUTS

LIST OF ANNEXES

ABBREVIATIONS AND ACRONYMS

AIDS	Acquired immune deficiency syndrome
ALIDRAA	Ask, listen, identify, discuss, recommend, agree, and make a follow-up appointment
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 Heath
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
SAM	Severe Acute Malnutrition
USAID	U.S. Agency for International Development
UNICEF	United Nations Children's Fund
VIPP	Visualization in program planning
WHO	World Health Organization

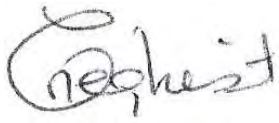
FOREWORD

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 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 HIV and AIDS Prevention and Control Office (FHAPCO) that each care provider will be oriented and benefiting from this guide as a way of improving the clinical nutrition care services.

We would also like to express sincere thanks to USAID and PEPFAR for providing the required financial and technical assistance through FHI 360/FANTA.



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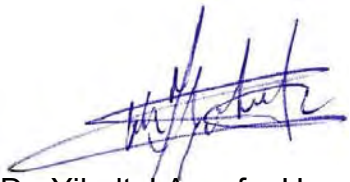

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Table of Contents

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 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 (draft) 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: Sample Timetable for Three-Day Training

Session	Topic	Duration	
Day 1			
Registration			8:30 –9:00
Session 1	Introductions, Expectations, Objectives, Admin issue, Pre-test	1hr 30 min	9:00 – 10:30
Tea Break			10:30 – 10:50
Session 2	Listening and Learning Skills	1hr 40 min	10:50 – 12:30
Lunch			12:30 pm – 1:30
Session 3	Critical Nutrition Practices for PLHIV	1 hr	1:30 – 2:30
Session 3	Messages for Communicating the Critical Nutrition Practices	45 min	2:30 – 3:15
Session 4	Requirements for Quality Nutrition Care and Support Services for PLHIV/ Self-Assessment	30 min	3:15 – 3:45
Tea Break			3:45–4:00
Session 4	Algorithm for Managing Malnutrition in PLHIV Assessment of Malnutrition and Associated Morbidity Children	1hr 20 min	4:00 –5:20
Daily Evaluation			5:20 – 5:30
Day 2			
Recap day 1			8:30 – 9:00
Session 4	Algorithm for Managing Malnutrition in PLHIV Assessment of Malnutrition and Associated Morbidity Adult	1hr 15 min	9:00 – 10:00
Session 4	Anthropometric Measurement and Classification of Nutritional Status	30 min	10:00 – 10:30
Tea Break			10:30 – 10:50
Session 4	Anthropometric Measurement and Classification of Nutritional Status	1 hr	10:50 – 11:50
Session 4	Nutrition Care Plan A (for children)	1 hr	11:50 – 12:50
Lunch			12:50 – 1:50
Session 4	Nutrition Care Plan A (for adults)	40 min	1:50 – 2:30
Session 4	Nutrition Care Plans B (for adults/children)	1 hr	2:30 – 9:30
Tea Break			9:30 – 9:50
Session 4	Nutrition Care Plans C (for adults/children)	1 hr	9:50 – 4:50
Session 4	Nutrition Care for PLHIV on ART	30 min	4:50 – 5:20
	Daily Evaluation and Introduction to Field Practice	10 min	5:20 – 5:30

Day 3			
Session 4	Field Practice	1hr 30 min	8:30 – 10:00
Tea Break			10:00 – 10:30
Session 4	Feedback from Field Practice	30 min	10:30 – 11:00
Recap day 2			11:00 – 11:10
Session 5	Logistics	1 hr	11:10 – 12:10
Lunch			12:30 – 1:30
Session 6	Monitoring and Evaluation	1 hr	1:30 – 2:30
Session 7	Post-test, Evaluation and Closing of the Training	1 hr	2:30 – 3:30
Tea break			3:30 – 4:00

SESSION 1: INTRODUCTIONS, EXPECTATIONS, AND OBJECTIVES

Estimated Duration: 1 hour and 30 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 Presentation game (**20** minutes)
Activity 1.2 Pre-test (**45** minutes)
Activity 1.3 Objectives of course (**5** minutes)
Activity 1.4 Housekeeping (**5** 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 40 on pieces of paper in a container
- Folder for each participant
- **Handout 1: Pre-test for Clinical Nutrition Care for PLHIV Course**

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

Activity 1.1 Presentation Game for Introductions and Expectations (20 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, discuss expectations of the training, and discuss something of human interest (e.g., favourite food, hobbies, likes, dislikes).
- Ask participants to set ground rules for the duration of the training and elect a timekeeper and persons to recap each day.
- Write participants' expectations on a flip chart. Post them on a wall where they can be referred to throughout the course.
- 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.

Activity 1.2 Pre-test (45 minutes)

Training Methods: Test and Discussion

- 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 45 minutes.
- Correct all the tests as soon as possible on the same day, using the Pre-test answer key below.
- Identify topics that caused disagreement or confusion and need to be emphasized during the next three days.

Information for Facilitators

Pre-test Answer Key

1. Telling a client what to do is the surest way to change his/her behaviour.
   a) True **b) False**
2. People living with HIV (PLHIV) are more susceptible to malnutrition than other people.
   a) True b) False
3. Good nutrition can slow PLHIV from progressing to full-blown AIDS.
   a) True b) False
4. HIV and frequent infections decrease the body's energy and nutrient requirements.
   a) True **b) False**
5. You can assess a client's nutritional status only by weighing him/her.
   a) True **b) False**
6. Which of the following nutrients are most needed by PLHIV?
   a) Energy b) Proteins c) Vitamins and minerals d) All
7. Nutrition care and support do not have any effect on the effectiveness of drug treatments.
   a) True **b) False**
8. Which of the following is true?
   a) Nutrition support has the greatest impact in the early stage of HIV.
   b) Nutrition support has the greatest impact in the late stage of HIV.
   c) Nutrition support has an impact regardless of the stage of HIV.
9. Pregnant women need more energy than post-partum mothers.
   a) True **b) False**
10. It is impossible for a person living with HIV and AIDS to strengthen or build muscle and improve overall health.
    a) True **b) False**
11. There is evidence that the nutritional status of the mother can have an effect on mother-to-child transmission of HIV.
    a) True b) False

12. People with HIV need to consume more energy every day than uninfected people of the same age, gender, and level of physical activities.

    a) True b) False

13. PLHIV are advised to drink boiled or treated water at all times.

    a) True b) False

14. Fermentation improves food quality because it aids digestion and absorption of food.

    a) True b) False

15. An HIV-positive mother is never advised to breastfeed her child.

    a) True **b) False**

16. HIV-related symptoms can be managed only by medicines.

    a) True **b) False**

17. PLHIV need to consume more energy every day than uninfected people of the same age, sex, and physical activity.

    a) True b) False

18. Body mass index (BMI) is the best indicator for assessing the nutritional status of pregnant women.

    a) True **b) False**

19. People suffering from oral thrush (candidiasis) are advised to avoid spices and sugar.

    a) True b) False

20. Which statement is false?

    a) A person suffering from diarrhoea needs to drink a lot of water.

    b) Green leafy vegetables are sources of iron.

    c) People suffering from constipation should eat more refined foods.

    d) People with nausea should eat small, frequent meals.

21. Please list three effects HIV has on nutritional status.

    1. HIV increases the body's energy requirements.
    2. HIV may reduce food intake.
    3. HIV infection may interfere with the way nutrients are absorbed and used in the body.

22. Please list three effects that good nutrition practices have on HIV.

    1. Delays the progression from HIV infection to AIDS.

    2. Helps to resist opportunistic infections and reduce the frequency of infections.

    3. Helps medications including ARVs work effectively and may reduce their side effects.

23. How can drugs and foods affect each other?

    Some foods reduce effectiveness of some medicines.

    ARV may alter absorption and Utilization of nutrients in the body.

    Some drugs should be taken with foods while others should not be.

    Some drugs cause side effects that reduce the intake and absorption of foods.

    Some medicines require intake of lots of water.

24. What is the recommended energy intake for adults who are HIV positive with secondary infection?

    20 – 30 percent increase from the recommended daily allowance.

25. What are the additional energy requirements of HIV-positive children who are symptomatic and experiencing weight loss?

    50 -100 percent increase from the recommended daily allowance.

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).

Participant Code No.: _____

Handout 1: Pre-test for Clinical Nutrition Care for PLHIV Course

Please mark the correct answer.

1. Telling a client what to do is the surest way to change his/her behaviour.
   a) True b) False
2. People living with HIV (PLHIV) are more susceptible to malnutrition than other people.
   a) True b) False
3. Good nutrition can slow PLHIV from progressing to full-blown AIDS.
   a) True b) False
4. HIV and frequent infections decrease the body's energy and nutrient requirements.
   a) True b) False
5. You can assess a client's nutritional status only by weighing him/her.
   a) True b) False
6. Which of the following nutrients are most needed by PLHIV?
   a) Energy b) Proteins c) Vitamins and minerals d) All
7. Nutrition care and support do not have any effect on the effectiveness of drug treatments.
   a) True b) False
8. Which of the following is true?
   a) Nutrition support has the greatest impact in the early stage of HIV.
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   c) Nutrition support has an impact regardless of the stage of HIV.
9. Pregnant women need more energy than post-partum mothers.
   a) True b) False
10. It is impossible for a person living with HIV and AIDS to strengthen or build muscle and improve overall health.
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11. There is evidence that the nutritional status of the mother can have an effect on mother-to-child transmission of HIV.
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12. People with HIV need to consume more energy every day than uninfected people of the same age, gender, and level of physical activities.
    a) True b) False

13. PLHIV are advised to drink boiled or treated water at all times.
    a) True b) False
14. Fermentation improves food quality because it aids digestion and absorption of food.
    a) True b) False
15. An HIV-positive mother is never advised to breastfeed her child.
    a) True b) False
16. HIV-related symptoms can be managed only by medicines.
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    a) A person suffering from diarrhoea needs to drink a lot of water.
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    c) People suffering from constipation should eat more refined foods.
    d) People with nausea should eat small, frequent meals
21. Please list three effects HIV has on nutritional status.

    _____

    _____

    _____

22. Please list three effects that good nutrition practices have on HIV.

    _____

    _____

23. How can drugs and foods affect each other?

_____

_____

_____

_____

24. What is the recommended energy intake for adults who are HIV positive with secondary infection?

_____

25. What are the additional energy requirements of HIV-positive children who are symptomatic and experiencing weight loss?

_____

SESSION 2: LISTENING AND LEARNING SKILLS

Estimated Duration: 1 hour and 40 minutes

Purpose

In this session, participants will learn the basic principles of counselling to effectively negotiate do-able actions with PLHIV and their home-based caregivers to improve nutrition and feeding practices.

Learning Objectives

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

- Identify listening and learning skills.
- Differentiate among counselling, teaching/guidance, and giving advice.
- Discuss the goals of counselling.
- List the steps used in counselling.

Overview

Activity 2.1 Demonstration of listening and learning skills (**20** minutes)
Activity 2.2 Difference between counselling, teaching/guidance, and giving advice (**50** minutes)
Activity 2.3 Steps used in counselling (**30** minutes).
Activity 2.4 Session review

Materials

- Flip charts and markers
- Masking tape
- Session 2 objectives written on a flip chart
- Existing Nutrition and HIV counselling cards developed by FHI 360/LINKAGES
- **Handout 2: Listening and Learning Skills**
- **Handout 3: Counselling Observation Checklist (ALIDRAA)**

Detailed Activities

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

Activity 2.1 Demonstration of Listening and Learning Skills (20 minutes)

Training Methods: Demonstration (20 minutes)

Demonstrate the following role-plays of listening and learning skills. One facilitator should role-play the client and the other should role-play the counsellor.

Demonstration 1: Non-verbal Communication (5 minutes)

The "counsellor" should say exactly the same words—*"Good morning, Habiba. How are things going for you today?"*—to the "client" each time, demonstrating first the positive and then the negative body language indicated below.

A. Posture

Hinders: Stand with your head higher than the other person's.

Helps: Sit so that your head is level with the other person's.

B. Eye contact

Hinders: Look away at something else or down at your notes.

Helps: Look at the person and pay attention as he/she speaks.

C. Barriers

Hinders: Sit behind a table or write notes while you talk.

Helps: Remove the table or the notes and talk.

D. Taking Time

Hinders: Act hurried. Greet the person quickly, showing impatience and looking at your watch.

Helps: Make the client feel that you have time. Sit down and greet him/her without hurrying; then just quietly smile, watching the person and waiting for him/her to answer.

E. Touch

Hinders: Do not touch the person, or touch the person in an inappropriate way.

Helps: Touch the person appropriately (hands or shoulders).

Ask participants what the community health worker did in this dialogue and how it might make the client feel. What was the more effective way to get valuable information from the client?

Training Methods: Demonstration (cont.)

One facilitator should role-play the client and the other should role-play a community health worker (CHW).

Demonstration 2: Closed Questions (3 minutes)

CHW: Good morning, (name). I am (name), the community health worker. Are you well?
Client: *Yes, thank you.*
CHW: Are you able to eat?
Client: *Yes.*
CHW: Are you having any difficulties?
Client: *No.*
CHW: Are you taking your medicines well?
Client: *Yes.*

Ask participants what they learned about the client.

Demonstration 3: Open Questions (3 minutes)

CHW: Good morning, (name). I am (name), the community health worker. How are you feeling today?
Client: *I'm well, but I don't have much appetite.*
CHW: Tell me, what have you been eating?
Client: *I've had some porridge this morning. I'm not sure what I will have later on.*
CHW: Tell me, what foods do you have at home?
Client: *Let me see—I know there are some rice and beans.*

Ask participants what they learned about the client from this dialogue and how this differs from the previous dialogue.

Demonstration 4: Responses and Gestures that Show Interest (3 minutes)

CHW: Good morning, (name). How are you feeling today?
Client: *Good morning. I'm doing quite well, I think.*
CHW: Mmm (nods, smiles).
Client: *Well, I was a bit worried the other day, because I had diarrhoea.*
CHW: Oh dear! (raises eyebrows, looks interested)
Client: *I wondered if it was something that I ate.*
CHW: Aha! (nods sympathetically)
Client: *But the nurse said I gained more than half a kilo this month.*
CHW: Your appetite really is improving.

Ask participants what the CHW did in this demonstration and how it might make the client feel.

Training Methods: Demonstration (cont.)

One facilitator should role-play the client and the other should role-play a community health worker (CHW).

Demonstration 5: Reflecting Back (5 minutes)

CHW: Good morning (name). How are you feeling today?
Client: *OK, but I've noticed that I have some sores in my mouth, and I don't feel like eating.*
CHW: The sores in your mouth are keeping you from eating?
Client: *Yes. The sores just started this week.*
CHW: So you've noticed these sores for about a week?
Client: *Yes, and my sister is telling me that there's some food I shouldn't eat*.
CHW: Your sister says that you should avoid some food?
Client: *Yes. Which foods should I avoid?*

Ask participants what the CHW did in this dialogue sand how it might make the client feel. How would this approach help get valuable information from the client?

Demonstration 6: Avoid Using Judging Words (5 minutes)

CHW: Good morning (name). Are you eating enough?
Client: *Well, I think so.*
CHW: Is your food nutritious?
Client*: I don't know… I hope so, but maybe not…. (looks worried).*
CHW: Have you gained weight normally this month?
Client: *I don't know…*

Ask participants what the CHW did in this dialogue and how it might make the client feel. How would this approach help get valuable information from the client?

Activity 2.2 Difference between counselling, teaching/guidance, and giving advice (50 minutes)

Information for Facilitators

Counselling

- Provides the client with information
- Asks the client about his/her situation and spends time listening
- Suggests small do-able actions
- Helps the client make a decision to try some small do-able action
- Is an interactive process between counsellor and client

The Goals of Counselling

- To effectively communicate behaviours the client can practice to improve nutrition
- To help the client try small do-able actions to improve nutrition
- To judge when the client should be referred for further clinical assessment or counselling.

Training Methods: Brainstorming

- Ask participants to tell you what they understand by counselling (how they would define counselling).
- Fill in missing gaps using the **INFORMATION FOR FACILITATORS** above.

Training Methods: Presentation (5 minutes)

Listening and Learning Skills

Give each participant a copy of **Handout 2. Listening and Learning Skills**. Ask participants to identify on the list the listening and learning skills they observed in the demonstrations.

Ask participants whether health care providers in their workplaces can use these skills in counselling. What would make it possible to use these skills? What would make it difficult?

Facilitate discussion.

Handout 2: Listening and Learning Skills

For effective counselling of people living with HIV, apply the following skills. They will elicit useful information about the client's nutrition and health status and help you decide appropriate counselling methods, interventions, and referrals.

1. **Use helpful non-verbal communication**

    a. Keep your head level with the client's.
    b. Pay attention.
    c. Remove barriers.
    d. Take time.
    e. Use appropriate touch.

2. **Ask open-ended questions.**
3. **Use responses and gestures that show interest.**
4. **Reflect back what the client says.**
5. **Empathize -- show that you understand how the client feels.**
6. **Avoid using words that sound judgemental**.

Information for Facilitators

Teaching/Guidance

- Provides appropriate and accurate information to enable a client to make important choices that affect his/her life
- Is all about giving information
- Involves a learner (client) and trainer (health care provider who is thought to have solutions to the client's problems)
- Is only part of counselling

Giving Advice

- Is a more experienced or knowledgeable person telling a less-experienced or less-knowledgeable person what to do?
- Is necessary if the client cannot make decisions (e.g., is too young or lacks experience)?

Training Methods: Brainstorming and Role-Play

- Ask participants to describe the difference between counselling, teaching/guidance, and giving advice. Ask them when each can be used. Let them evaluate whether health care providers in their workplaces use them appropriately.
- Ask participants to form groups of three to role-play conveying a key nutrition message — eating at least three meals a day with healthy snacks in between — in three different ways (giving advice, teaching, and counselling). One participant should role-play the counsellor, one should role-play the client, and the third should observe and make suggestions. Give a time limit of 10 minutes.
- Move around the groups and fill in gaps using the Information for Facilitators above.
- When the time is up, facilitate discussion, asking the observers, "counsellors," and "clients" about the experience.

Activity 2.3 Steps Used in Counselling (30 minutes)

Training Methods: Demonstration, Presentation, and Skills Practice

- Role-play a counselling session on how many times to eat per day using the nutrition and HIV counselling cards. One facilitator should role-play the client and the other the counsellor. Demonstrate the listening and learning skills discussed above (10 minutes).
- Ask participants to identify the listening and learning skills and the general counselling guidelines that the facilitators demonstrated (5 minutes).
- Present the steps used in counselling: ALIDRAA – Ask, Listen, Identify, Discuss, Recommend and negotiate, Agree and repeat agreed action, make a follow-up Appointment.
- Write the ALIDRAA steps on a flip chart and discuss what happened in each step.
- Distribute **Handout 3: Counselling Observation Checklist (ALIDRAA)** and review.
- Ask participants to form groups of three. One should role-play a counsellor, one should role-play a client, and the other should observe and give suggestions if the counsellor has difficulty following the ALIDRAA steps. The counsellor should counsel on ***[choose a relevant topic]***. Give a time limit of 10 minutes.
- Move among the groups, observing and giving suggestions for following the ALIDRAA steps.
- When the time is up, ask the groups to discuss their experience.

Activity 2.4 Session Review

Training Methods: Review Energizer

- Form a circle together with the participants.
- Throw a ball to one participant. When he/she catches it, ask him/her a question pertaining to Listening and Learning Skills and ALIDRAA.
- When the participant has answered correctly to the satisfaction of the group, ask him/her to throw the ball to another, asking a question in turn.
- The participant who throws the ball asks the question. The participant who catches the ball answers the question.

Handout 3: Counselling Observation Checklist (ALIDRAA)

Put a check mark in the boxes next to the counselling skills you observe.

- ❑ Greets the client (and caregivers) and establishes confidence
- ❑ **Asks** the client (and caregivers) about current feeding practices
- ❑ **Listens** to what the client (and caregivers) say
- ❑ **Identifies** key difficulties, if any, and selects with the client (and caregivers) the most important one to work on
- ❑ **Discusses** feeding options
- ❑ **Recommends and negotiates do-able actions** to help the client (and caregivers) select the best option to try, depending on their context and resources
- ❑ Helps the client (and caregivers) **Agree** to try one of the options and asks them to repeat the agreed-upon, do-able action
- ❑ Makes an **Appointment** for the follow-up visit.

Name one or more things the counsellor did well.

_____

_____

_____

Name one thing you would recommend the counsellor to try to improve next time.

_____

_____

_____

SESSION 3: CRITICAL NUTRITION PRACTICES FOR PLHIV

Estimated Duration: 1 hour and 45 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

Activity 3.1 Critical nutrition practices for PLHIV (**1 hour**)
Activity 3.2 Key messages for communicating the critical nutrition practices for PLHIV (**45** minutes)
Activity 3.3 Session review

Materials

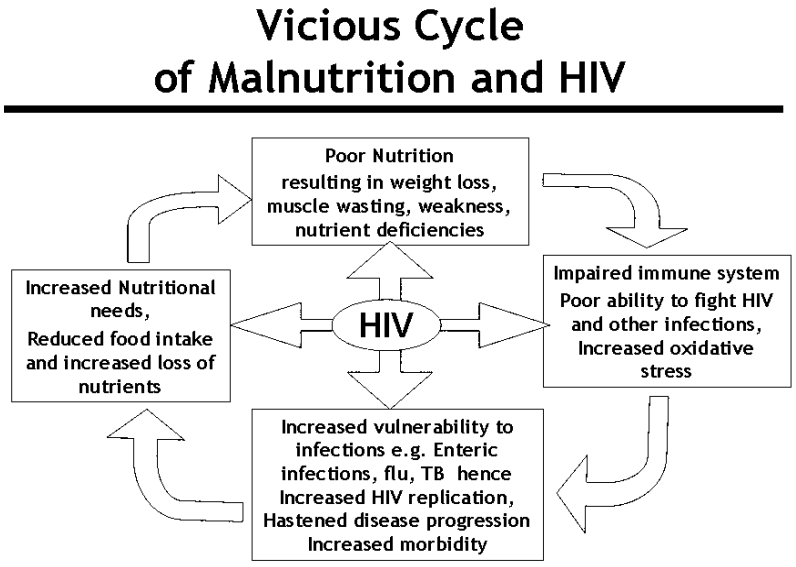
- Flip charts and markers
- Masking tape
- Session 3 objectives written on a flip chart
- Flip chart with a list of the seven CNP for PLHIV
- Twelve sets of seven yellow cards, each labelled with one of the seven CNP for PLHIV, cut into halves.
- Five sets of seven yellow cards, each labelled with one 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

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

Information for Facilitators

Handout 4: The Link between Nutrition and HIV/AIDS

1. The link between nutrition and HIV
   The effects of malnutrition and HIV on immune system
   - Decreases CD4 count
   - Delays/weakens reaction to infections



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 metabolism in 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. No additional protein and micronutrients needed above the RDA.

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

Activity 3.1 Critical Nutrition Practices for PLHIV (1 hour)

Training Methods: Demonstration and Presentation

- Brainstorm the link between nutrition and HIV/AIDS.
- Brainstorm the definition of critical nutrition behaviours.
- Show participants the critical nutrition practice cards.
- Explain the meaning of the practices.
- 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 3.2 Messages for Communicating Critical Nutrition Practices for PLHIV (45 minutes)

Training Methods: Small Working Groups

- 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.
- Give each participant a copy of **Handout 5: Critical Nutrition Practices for PLHIV**.

Training Methods: Review Energizer

- 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.

Activity 3.3 Session Review (10 minutes)

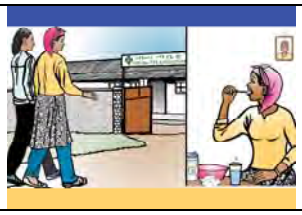
Handout 5. Critical Nutrition Practices for PLHIV

Key Message	Explanation
1. See a health care provider for a periodic nutrition assessment (especially weight).	
▪ 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.	▪ 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.	
▪ 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.	▪ 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 enough energy and other nutrients (proteins and micronutrients) that your body needs. ▪ Fruits and vegetables help to strengthen immunity.

Key Message	Explanation
▪ 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.	▪ 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.	
▪ 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.	▪ 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.	
▪ 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.	▪ 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)	
▪ Practice safer sex, using condoms. ▪ Avoid alcohol, especially if you are taking medicines. ▪ Avoid smoking cigarettes and taking drugs without prescription.	▪ 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

Key Message	Explanation
▪ 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	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.
6. Seek early treatment for infections and manage symptoms through diet.	
▪ 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. Also refer to **Handout 5: Managing Symptoms Associated with HIV in Adults.**	▪ 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.	
▪ 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.	▪ 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.

1. See a health care provider for periodic nutrition assessment (especially weight).	
2. Increase energy intake by eating a variety of foods, especially energy-rich foods, and eating more frequent meals, especially if sick.	
3. Maintain high levels of hygiene and sanitation.	
4. Drink plenty of clean and safe (boiled or treated) water.	
5. Maintain a healthy lifestyle by avoiding unprotected sex, alcohol, tobacco, sodas, and other coloured and sweetened drinks and do physical activity (exercise).	
6. Seek early treatment for infections and manage symptoms through diet.	
7. Take medicines as advised by the health worker and manage food and drug interactions or side effects.	

Handout 6: 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)	▪ 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.	▪ If appetite loss is a result of illness, seek medical attention for treatment.
Diarrhoea	▪ 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 non-fat milk if there is no problem with lactose. ▪ Boil or steam foods. ▪ *Avoid or reduce intake of these foods:* ▪ Some dairy products such as milk ▪ Caffeine (coffee and teas) and alcohol ▪ Fatty foods ▪ Fried foods and extra oil, lard, or butter ▪ Gas-forming food (cabbage, onions, carbonated soft drinks)	<u>Prevention</u> ▪ 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. <u>Treatment</u> ▪ 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, high fever, vomiting, severe abdominal pain, or diarrhoea) persist for more than three days.
Fever	▪ 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.	▪ 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: – Fever lasting several days and not relieved with aspirin – Loss of consciousness – Severe body pain – Yellow eyes – Severe diarrhoea – Convulsion/seizure
Nausea and vomiting	▪ 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.	▪ Avoid an empty stomach; nausea is worse if nothing is in the stomach. ▪ Avoid lying down immediately after eating; wait at least 20

Illness	Diet	Care and Nutrition Practices
	▪ 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.	minutes to avoid vomiting. ▪ Rest between meals.
Thrush	▪ 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.	▪ 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	▪ Eat more iron-rich foods (eggs, fish, meat, and liver), green leafy vegetables (collard greens, spinach), legumes (beans, lentils, and groundnuts), nuts, oil seeds, and fortified cereals. ▪ Take iron supplements.	▪ 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	▪ 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.	▪ Do regular weight-bearing exercise to build muscles.
Constipation	▪ Eat foods that are high in fibre (maize, whole-wheat bread, green vegetables, washed fruits with the peel). ▪ Drink plenty of liquids. ▪ Avoid processed or refined foods.	▪ Avoid using intestinal cleansing practices (e.g., enemas and medications). ▪ Drink plenty of fluids, including boiled water.
Bloating or Heartburn	▪ Eat small, frequent meals. ▪ Avoid gas-forming foods (cabbage, soda). ▪ Drink plenty of fluids.	▪ Eat long enough before sleeping so food can digest.
Tuberculosis	▪ Consume foods high in protein, energy, iron, and vitamins.	▪ 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	▪ Use flavour enhancers (salt, spices, herbs, and lemon). ▪ Chew food well and move it around in mouth to stimulate receptors.	

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

Estimated Duration: 11 hours and 45 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 the nutritional status of a client.
- Assess health conditions that may affect nutrition and nutrition care and support of PLHIV.
- Design a nutrition care plan and help clients carry out the plan.

Overview

Activity 4.1 Requirements for nutrition care and support of PLHIV (**30 minutes**)
Activity 4.2 Algorithm for managing malnutrition and assessment of malnutrition and associated morbidity/children (**1 hour, 30 minutes**)
Activity 4.3 Daily Evaluations
Activity 4.4 Assessment of malnutrition and associated morbidity/adults (**1 hour**)
Activity 4.5 Anthropometric measurement and classification of nutritional status (**1 hour, 45 minutes**)
Activity 4.6 Nutrition Care Plan A for children and adult (**1 hour, 40 minutes**)
Activity 4.7 Nutrition Care Plan B for children and adult (**1 hour**)
Activity 4.8 Nutrition Care Plan C for children and adult (**1 hour**)
Activity 4.9 Nutrition Care for PLHIV on ART (30 minutes)
Activity 4.10 Daily Evaluations
Activity 4.11 Field Practice (**3 hours**)

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
- 5 MUAC tapes
- Six sets of photographs of people with wasting, marasmus, and bilateral oedema
- Weight-for-Height Chart

Training Methods: Presentation

- Present session objectives on a flip chart.
- Give an overview of the list of activities under this session and the time allocated.

Information for Facilitators

PLHIV, especially children, with malnutrition are at high risk for opportunistic infections and mortality. Even mild and moderate malnutrition increase the risk of death. Identifying and addressing malnutrition in HIV-infected clients can help them recuperate faster from infection, strengthen their immunity, and possibly slow the progression to AIDS. Depending on the degree of malnutrition, nutrition care can be given at home or at the outpatient or inpatient level. Thorough nutrition assessment is needed to manage nutrition problems effectively.

Causes of Malnutrition

Causes of malnutrition In Ethiopia include inadequate food intake, sub-optimal feeding practices, household food insecurity, and poor access to health care and poor water and sanitation services. Without appropriate intervention, infections, including HIV, can increase metabolic demands, decrease appetite, and reduce absorption and utilization of nutrients, resulting in severe malnutrition.

Activity 4.1 Requirements for Nutrition Care and Support of PLHIV (30 minutes)

Training Methods: Self Assessment

- Give each participant a copy of **Handout 7. Self Assessment: Requirements for Nutritional Care and Support of PLHIV**. Explain that this form lists requirements for quality nutritional care for PLHIV. These requirements include human resources, materials and equipment, and actions (nutrition education and counselling, food supplementation, follow-up, and referral/linkage to other services). Review requirements 1–11.
- Ask participants to break into the same groups of four they formed for Activity 3.2. Ask the groups to discuss and complete items 1–11, assessing the resources in their own workplaces. Give a time limit of 15 minutes.
- When participants have finished filling out the forms, ask them to discuss the reasons for any gaps. Ask one participant in each group to write the reasons on the left side of a flipchart. Give a time limit of 15 minutes.
- Then ask the participants to discuss what is needed to address the gaps identified. Ask one participant to write the solutions on the right side of the flipchart next to the gaps. Give a time limit of 15 minutes.
- Ask each group to present its gaps and solutions. Facilitate discussion in the larger group session.

Information for Facilitators

The following resources are needed to provide quality nutrition services for PLHIV:

1. Weighing and measuring equipment, client registers, counselling materials, and supplies such as therapeutic and supplementary food and micronutrients in adequate quantities to meet the needs of the estimated number of clients at the site.
2. Enough staff delegated to do nutrition assessment and counselling.
3. Staff with knowledge, skills, and time to perform nutrition assessment, nutrition counselling, record keeping, and follow-up.
4. Institutional supervision and support from senior management for nutrition as a component of care for PLHIV at the site.
5. Rewards for good staff performance.

Handout 7: Self Assessment: Requirements for Clinical Nutrition Care of PLHIV

Human Resources, Materials, and Equipment		
1.	Every site providing HIV services has at least one staff member who is taking anthropometric measurements of HIV-positive clients.	
2.	Every site providing HIV services has at least two staff members who are providing nutrition care and food prescription and distribution.	
3.	Every site providing HIV services has at least two health care providers trained in the HAPCO/FMOH “Guide to Clinical Nutrition Care” course.	
4.	Every site providing HIV services has a functioning scale for adults and children that measures weight in kilograms to the nearest 100 grams.	
5.	Every site providing HIV services has one height/length board that measures height or length in centimetres to the nearest centimetre.	
6.	Every site providing HIV services has mid-upper arm circumference (MUAC) tapes for adults and children that measure MUAC to the nearest millimetre for pregnant and post-partum women, children, and adults who cannot have height measured.	
7.	Every site providing HIV services has utensils (e.g., bowls, stove, etc.) to demonstrate the use or preparation of recommended and prescribed foods such as RUTF and fortified blended foods.	
8.	Every site providing HIV services has copies of the algorithms for managing malnutrition in HIV-infected children and adults in Ethiopia.	
9.	Every site providing HIV services has at least one set of nutrition and HIV counselling cards for Ethiopia.	
10.	Every site has data entry forms and a compilation system that includes nutrition data.	
11.	Every site providing HIV services has copies of BMI, weight/height, and BMI-for-age charts.	
Nutrition Assessment and Classification		
12.	Every person living with HIV (PLHIV) or orphan or vulnerable child (OVC) coming to the site is weighed to the nearest 100 grams and measured (to the nearest centimetre), or has MUAC taken if they are pregnant or lactating or if weight or height cannot be measured accurately.	
13.	Body mass index BMI (for adults), weight-for-height (for children under 15 years old), or MUAC (for pregnant and post-partum women, children, or clients whose weights or heights cannot be measured) is computed for each client and recorded on the client record sheets every month for children under 5 and symptomatic adults, and every three months for asymptomatic adults.	
14.	Every client is assessed for critical symptoms (e.g., severe dehydration, severe anaemia, diarrhoea, vomiting, oral sores or thrush, anorexia, TB or other opportunistic infections) that may affect nutritional status.	

Nutrition Care Plan		
15	Every PLHIV and OVC is managed using a nutrition care plan which is based on his/her nutritional status and health condition.	
16	Every PLHIV is counselled on the need to: a) have their weight monitored periodically; b) increase intake of energy-rich foods; c) maintain healthy sanitation and hygiene; d) drink plenty of clean and safe water (boiled/treated water); e) maintain healthy living to prevent stress and depression and promote nutrient absorption and use; f) do physical activity; g) manage diet-related symptoms at home; and h) manage drug-food interactions.	
17	Every PLHIV, OVC, and caregiver who qualifies for a nutrition care plan has his/her weight measured each time he/she comes to collect the food and his/her weight recorded on the client record form.	
18	Every PLHIV, OVC, and caregiver who is eligible for a nutrition care plan is told why he/she qualifies for the food, the purpose of the food, and when he/she is expected to exit from the program.	
19	Eligibility (entry and exit) criteria for a nutrition care are plan posted where service providers and clients can see them clearly.	
20	Every severely malnourished PLHIV or OVC is given an “appetite test” before being counselled on home management of severe malnutrition.	
21	Every PLHIV or OVC who is eligible for a nutrition care plan is prescribed FBP (or a mix of different kinds of FBP) according to national FBP guidelines, depending on nutritional status and physiological state, in a quantity adequate to last until the next return date.	
22	Every PLHIV or OVC or caregiver who is eligible for a nutrition care plan is given a demonstration on how to prepare and use the prescribed food(s).	
23	Every PLHIV or OVC or caregiver who receives a nutrition care plan is counselled at the earliest possible contact on his/her safe weight to exit the program, preparation and use of the FBP, adherence, and safe food handling.	
24	FBP is not distributed as an infant food for children under six months old, except for the management of severe acute malnutrition and health care providers reinforcing the message that infants should be exclusively breastfed for six months.	
Nutrition Commodities and Infrastructure		
25	Every site providing clinical nutrition care has nutrition supplements according to the treatment protocol and care plan (e.g., RUTF, FBF, micronutrient supplements etc.).	
26	Every site providing clinical nutrition care has BCC counselling tools for counselling critical nutrition behaviour.	
27	Every site has adequate infrastructure for storing nutrition supplements and commodities	

Stock Management and Record Keeping		
28	The site in-charge/nutrition focal person estimates the FBP and other supply needs and sends them to the food lead partner by the 15th of every month.	
29	The site store in charge correctly maintains stock records of FBP.	
30	The person providing nutrition care services fills in the nutrition/FBP register for each client counselled.	
31	The site data clerk person compiles nutrition data on form RHB to FHAPCO/MOH by the 5th of every month.	
32	The person in charge of the site pharmacy stores health commodities to facilitate “first-to–expire, first-out” procedures and stock management.	
33	The person in charge of the site pharmacy orders food supplies three months before the stock out.	

Activity 4.2 Algorithm for Managing Malnutrition and Assessment of Malnutrition and Associated Morbidity for Children (1 hour, 30 minutes)

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.

The Algorithm for 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.

Training Methods: Presentation (30 minutes)

- Give each participant a copy of **Handout 8-Algorithm for Managing Malnutrition in PLHIV.**
- Ask the participants to read through the first two parts of the algorithm – assess (history, look and feel).
- Review in detail the first part of the algorithm using the information below for assessment and classification of the client's nutritional status.

Handout 8: Algorithms for Managing Malnutrition in PLHIV - Children

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

Algorithm for Managing Malnutrition in PLHIV–Adult

ASSESS				
HISTORY	LOOK AND FEEL	CRITERIA	CLASSIFICATION	TREATMENT PLAN
Refer to records (or if needed ask to determine the following) 1.Has the client lost weight in the past month or since the past visit? 2.Has the client had: • 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? 3.Has the client had noticeable changes in his/her body composition, specifically his/her fat distribution? • Thinning of limbs and face> • Change in fat distribution on the limbs, breasts, stomach region, back or shoulders? 4.Has the client experienced the following? • Nausea and/or vomiting? • Persistent fatigue? • Poor appetite?	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). 2. Measure weight (kg) and height (cm). 3. Compute BMI (adults) 4. Measure MUAC (pregnant and post-partum women and/or adults who cannot stand straight). 5. Examine for conditions that cause secondary malnutrition (see above and in "History") 6.Examine/observe for complications and danger signs: • Severe anemia (paleness, pallor of the palms) • Severe dehydration • Active TB • Bilateral severe edema	**Bilateral pitting edema** **Adults (non-pregnant/post-partum)** BMI < 16 kg m^2 (If BMI cannot be measured, use MUAC cut-off below.) **Pregnant/postpartum women** MUAC < 180 mm	**SEVERE/MODERATE malnutrition with complications** if client has any of the danger signs or severe edema (e.g., severe dehydration, poor appetite, bilateral edema) **Acute malnutrition without complications** If client has BMI or MUAC less than the severe malnutrition cutoff and does not have any of the danger signs	**Admit or refer for inpatient care.** **NUTRITION CARE PLAN A (RED)**
		Adults (non-pregnant/post-partum) BMI 16 - 16.99 Moderate BMI 17 - 18.49 (If BMI cannot be measured, use MUAC cut-off below.) **Pregnant/postpartum women** MUAC 180 - 210 mm	**MODERATE MALNUTRITION**	**NUTRITION CARE PLAN B (YELLOW)**
		Regardless of BMI or MUAC: • Confirmed unintentional weight loss of > 5% since the last visit • Reported weight loss: e.g. loose clothing which used to fit	**SIGNIFICANT WEIGHT LOSS**	
		Regardless of BMI or MUAC: • Chronic lung disease • TB • Persistent diarrhoea • Other chronic OI or malignancy	**Signs of SYMPTOMATIC DISEASE**	
		Adults (non pregnant/post-partum) BMI ≥ 18.5 (If BMI not possible, use MUAC) **Pregnant/post-partum women** MUAC > 210 mm In the absence of signs of symptomatic disease and significant weight loss	**NORMAL**	**NUTRITION CARE PLAN C (GREEN)**

Activity 4.2.1 Algorithm for Managing Malnutrition, Assessment of Malnutrition and Associated Morbidity for Children

Training Methods: Presentation and Discussion (40 minutes)

- Give each participant a copy of **Handout 8 -Algorithm for Managing Malnutrition in PLHIV**
- Ask participants to read through the "assess" part of the algorithm (history and look and feel for children).
- Review in detail the first part of the algorithm (assessment and classification of the client's nutritional status) and summarize using the information below on a flip chart.

Information for Facilitators

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.
- Any illness (e.g., cough, fever, diarrhoea, vomiting, poor appetite, persistent fatigue, mouth sore or oral thrush) lately.
- Type of medications the client is taking (for TB treatment or other kind).
- Level of appetite.
- What, how much, and how frequently the client is eating (or breastfeeding, if applicable).
- If the client has had noticeable changes in body composition/fat distribution, especially the thinning of limbs and face, breasts, stomach region, back/hump.

Look/Examine, Measure

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

Details on how to measure and classify will be covered under activity 4.5.

4. Check for danger signs

- Intractable vomiting
- High fever
- Hypothermia < 35^{o}C
- Convulsion/fitting
- Persistent diarrhoea
- Bilateral oedema (+++)
- Severe dehydration
- Extensive skin lesions

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.

Training Methods: Exercise and Discussion (15 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 group session.

Activity 4.3 Daily Evaluation (5 minutes)

Thank participants for their contributions. Give each participant a copy of **Handout 9: Daily Evaluation Form (Day 1)**. Ask participants to complete the form without their names and leave them turned over on the tables as they leave.

Handout 9: Daily Evaluation Form (Day 1)

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. Listening and Learning Skills						
Session 3						
1. Clinical Nutrition Practices and Messages						
Session 4						
1. Requirements for Quality Nutrition Services for PLHIV						

Note to Facilitators: Briefly review the information covered in Day 1 and answer any questions participants have.

End of Day 1

Recap of Day 1

Activity 4.4 Algorithm for Managing Malnutrition and Assessment of Malnutrition and Associated Morbidity for Adults (1 hour)

Activity 4.4 Training Methods: Presentation and Discussion (45 minutes)

- Give each participant a copy of **Handout 8 -Algorithm for Managing Malnutrition in PLHIV.**
- Ask participants to read through the Assess part of the algorithm (history and look and feel for adults).
- Review in detail the first part of the algorithm (assessment and classification of the client's nutritional status) and summarize using the information below on a flip chart.
- Explain that the participants will use this algorithm to classify each other's nutritional status and practice counselling based on the results.

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

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. Measure weight, height and MUAC

Compute weight/height

- Measure MUAC
- Weight/age (if weight/height or MUAC measurement are not possible)

Details on how to measure and classify will be covered under activity 4.5.

3. Check for danger signs

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

Training Methods: Self Assessment

- Give each participant a copy of **Handout 7: Self Assessment: Requirements for Nutritional Care and Support of PLHIV**. Explain that this form lists requirements for quality nutritional care for PLHIV. These requirements include human resources, materials and equipment, and actions (nutrition education and counselling, food supplementation, follow-up, and referral/linkage to other services). Review requirements 12-15.
- Ask participants to break into the same groups of four they formed for Activity 3.2. Ask the groups to discuss and complete items 12–15, assessing the resources in their own workplaces. Give a time limit of 15 minutes.
- When participants have finished filling out the forms, ask them to discuss the reasons for any gaps. Ask one participant in each group to write the reasons on the left side of a flip chart. Give a time limit of 15 minutes.
- Then ask the participants to discuss what is needed to address the gaps identified. Ask one participants to write the solutions on the right side of the flipchart next to the gaps. Give a time limit of 15 minutes.
- Ask each group to present its gaps and solutions. Facilitate discussion in the larger group setting.

Activity 4.5 Anthropometric Measurement and Classification of Nutritional Status (1 hour and 45 minutes)

Activity 4.5.1 Measuring and Computing Weight for Height

Training Methods: Demonstration and Skills Practice (30 minutes)

- Brainstorm and summarize the information below on measuring, and computing weight and height for children under five.
- Present classification table presented for children under five and 5 to 17 years of age and discuss.
- With the participants still in their small groups, give each participant a copy of **Handout 10- Measuring Weight and Height**. Demonstrate the procedures for accurately weighing and measuring PLHIV, both children and adults.
- If possible, give each group a weighing scale and height board. Ask the group members to measure each other's weight and height correctly in pairs, record the weight and height on the flip chart, and then switch roles.
- Supervise the activity to ensure that each participant does the exercise correctly.
- Give each participant a copy of **Handout 11: Weight-for-Height Chart**. Explain how to use the chart to classify a client's nutritional status and determine the nutrition care plan.
- Write the following sample weights for height on a flip chart so that all groups can see them clearly:
- **Girl Child: Height 97 cm, weight 14.8**
- **Boy Child: Height 87.5 cm, weight 10.6 kg**
- Ask the groups to use the tables provided to convert the weights and heights to weight-for-height, classify the nutritional status of the sample clients, and determine the nutrition care plans.
- Ask one or two groups to present the results in the larger group setting.
- Ask the participants to discuss the challenges of taking these measurements, including equipment, clothing, reading the equipment, recording, not standing straight (for height), etc.
- Repeat the demonstration if necessary, emphasizing areas that need strengthening.

Note to Facilitators: Explain the composition of body weight.

Information for Facilitators

Body weight is composed of protein, fat, water and bone.

1. Measure weight and height.

Measuring Weight

- Make sure the weighing scale is calibrated to **zero** before each measurement is taken.
- Weigh clients with **minimal clothing** and no jewellery.
- Read the weight as soon as the indicator on the scale has stabilized.
- Record the weight to the **nearest 100 grams**.

Measuring Height

- 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.

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

Weight-for-height (W/H) compares a child's weight (in kilograms) with the weight (in kilograms) of a standard/reference child of the same height (in centimetres).

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. Extend the line of the height of the child to touch the bold curve for the median weight of the reference child.

W/H is computed as a percentage (the weight of the child divided by the weight of the reference child of the same height, multiplied by 100).

The table below is used to classify children according to their nutritional status. The column on the right includes the associated nutrition care plan for each classification.

Level	Classification	Nutrition Care Plan
W/H <70 percent of reference median or < - 3 Z-score MUAC 6-11 months: <110 mm 12-59 months: <110 mm 5-9 years: <135 mm 10-14 years: <160 mm	Severe acute malnutrition	NUTRITION CARE PLAN A (Therapeutic feeding through inpatient and/or outpatient care)
W/H 70-80 percent of reference median or < -2 Z-score MUAC 6-11 months: <120 mm 12-59 months: <130 mm 5-9 years: <145 mm 10-14 years: <180 mm	Moderate acute malnutrition	NUTRITION CARE PLAN B (Supplementary feeding and nutrition counselling)
W/H 80-90 percent of reference median or -1 to -2 Z-scores	Mild malnutrition	NUTRITION CARE PLAN C (Nutrition counselling)
W/H >90 percent of reference median or > -1 Z-score MUAC 6-11 months: >125 mm 12-59 months: >130 mm 5-9 years: >145 mm 10-14 years: >180 mm	Not malnourished	NUTRITION CARE PLAN C (Nutrition counselling)

Nutritional status of children 5 to17 years of age can be classified using BMI-for-age (see below) or MUAC (see below).

Level	Classification	Nutrition Care Plan
BMI-for-age < -3 Z-score OR MUAC below age-specific cut off for severe malnutrition given above	Severe Malnutrition	NUTRITION CARE PLAN A (Therapeutic feeding through inpatient and/or outpatient care)
BMI-for-age = -2 Z-score OR MUAC below age-specific cut off for moderate malnutrition given above	Moderate Malnutrition	NUTRITION CARE PLAN B (Supplementary feeding and nutrition counselling)
BMI-for-age = -1 to -2 Z-score	Mild Malnutrition	NUTRITION CARE PLAN C (Nutrition counselling)
BMI-for-age > -1 Z-score	Normal	NUTRITION CARE PLAN C (Nutrition counselling)

Handout 10: Measuring Weight and Height

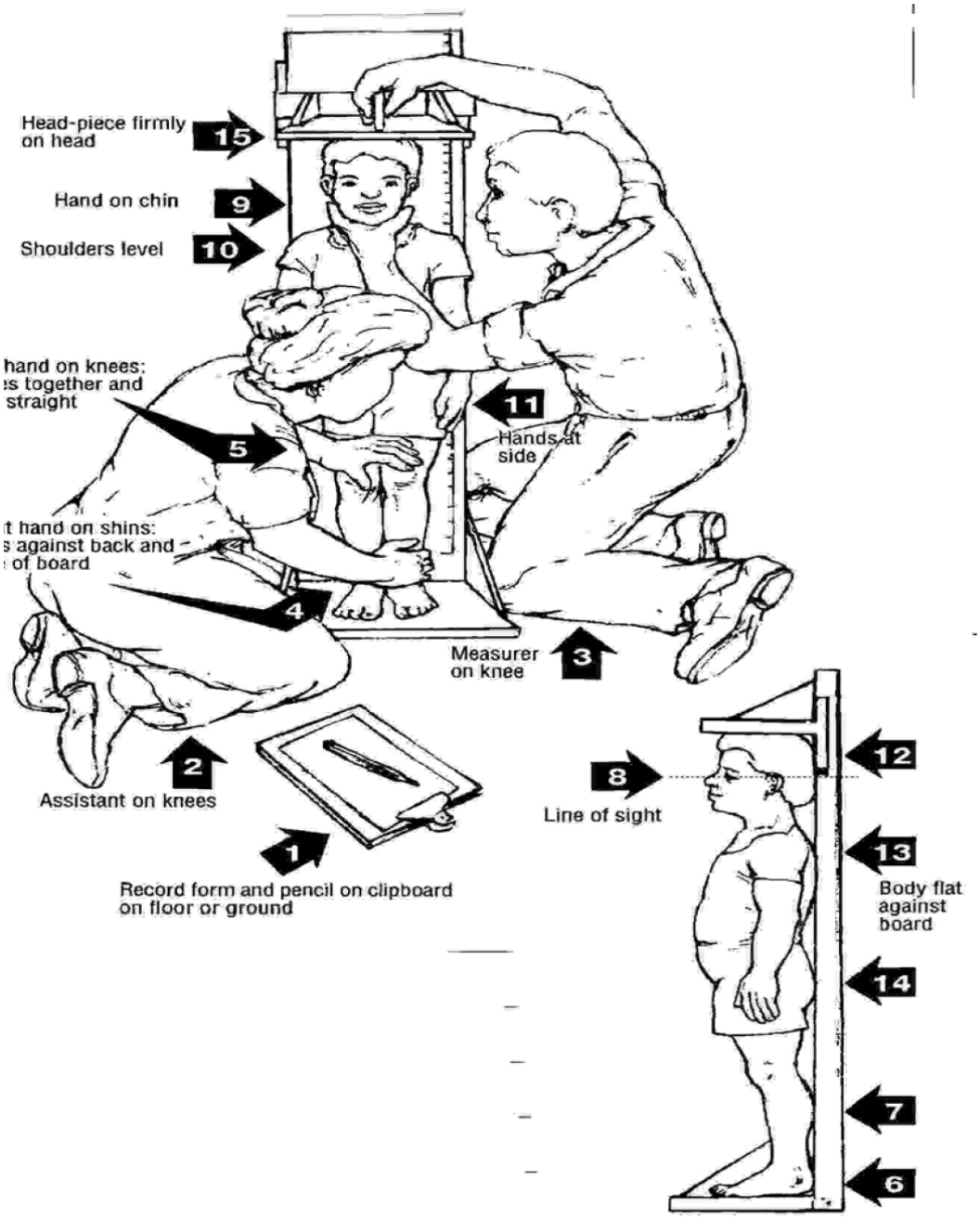
Good nutrition improves the quality of life and health of PLHIV. This is why it is important to monitor nutrition status at least once a month.

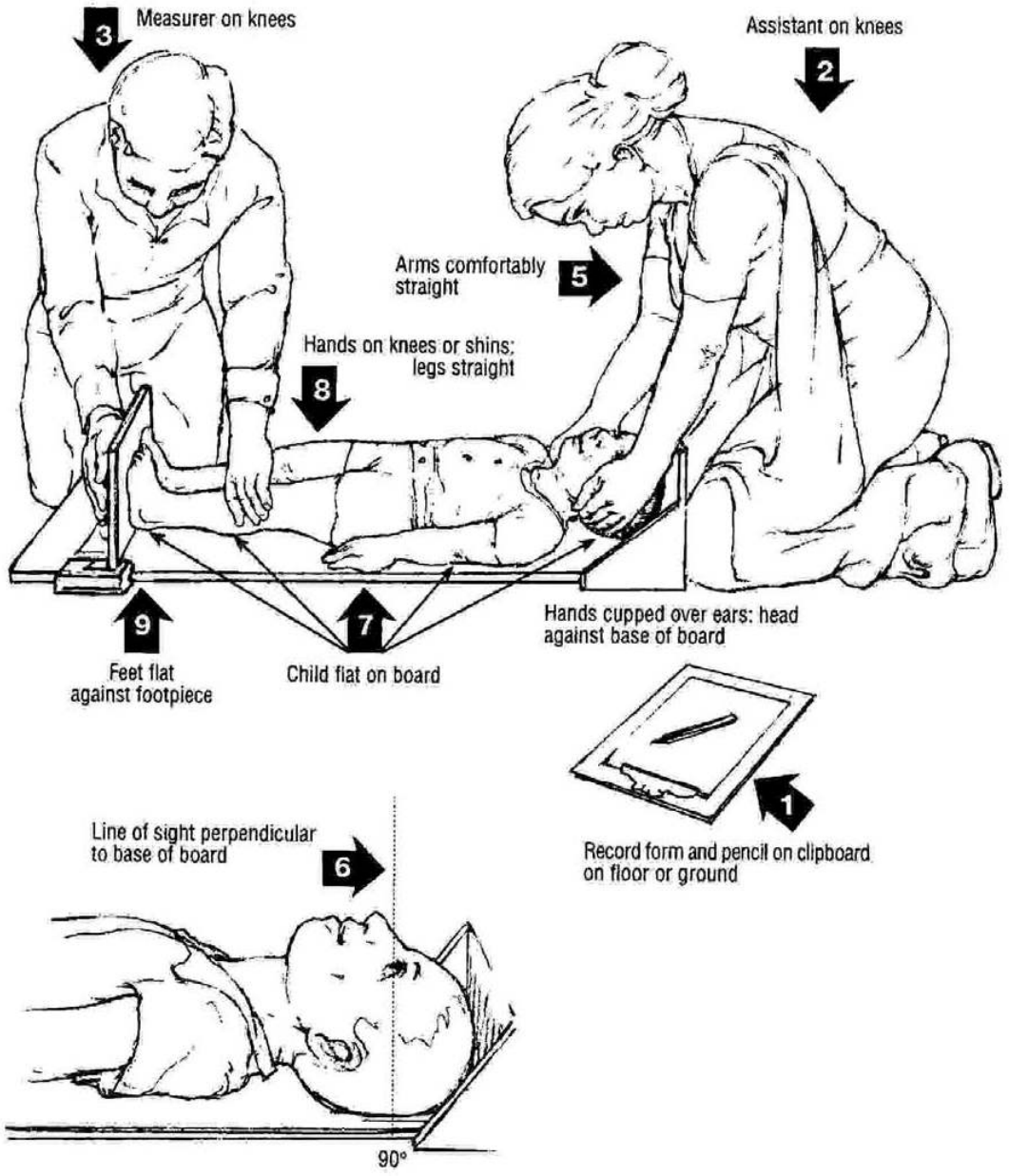
1. Measure weight

- 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. Measure height

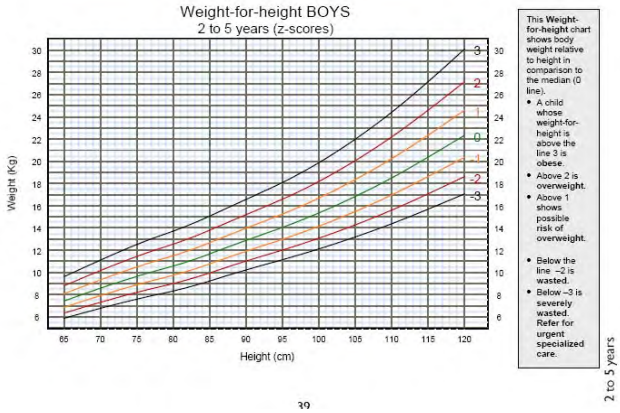
- Ask the person to remove shoes and headgear, stand erect, and look straight ahead with feet together and knees straight. The heels, buttocks, shoulder blades, and back of the head should touch the wall. (If the person cannot stand without help, MUAC should be taken instead.)
- Record height to the nearest 0.5 cm.


Head-piece firmly on head
15
Hand on chin
9
Shoulders level
10
hand on knees:
s together and
straight
5
11
Hands at side
t hand on shins:
s against back and
of board
4
Measurer on knee
3
2
Assistant on knees
1
Record form and pencil on clipboard on floor or ground
8
Line of sight
12
13
Body flat against board
14
7
6


3
Measurer on knees
Assistant on knees
2
Arms comfortably straight
5
Hands on knees or shins; legs straight
8
9
Feet flat against footpiece
7
Child flat on board
Hands cupped over ears: head against base of board
1
Record form and pencil on clipboard on floor or ground
Line of sight perpendicular to base of board
6
90°

Handout 11: Weight-for-Height Charts

35



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Activity 4.5.2 Computing BMI for Adults, Adolescents, and Older Children

Training Methods: Skills Practice (30 minutes)

- Brainstorm on definition and computing of BMI and summarize using the information above.
- With the participants still in their small groups, give each participant a copy of **Handout 12 - Calculating and Classifying 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.
- Then ask the groups to classify the nutritional status of each BMI calculated.
- Demonstrate how to calculate BMI if necessary, emphasizing areas that need strengthening.

Handout 12: Calculating and Classifying BMI

Computing BMI for Adults, Adolescents and Older Children

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 cut off 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 cut-offs 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., lipoatrophy).

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

1. **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):

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

2. **Determine nutritional status.**

Adults

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

Source: WHO 1995

Children Aged 5 - 17

For children between 5 and 17 years old, BMI-for-age can be used to classify nutritional status. **The BMI-for-age chart in Annex 10** can be used to determine which of the following categories a child falls into:

BMI-for-age < -3 SD	=	Severely malnourished
BMI-for-age = -2 to -3 SD	=	Moderately malnourished
BMI-for-age = -1 to -2 SD	=	Mildly malnourished
BMI-for-age > -1 SD	=	Not malnourished

Source: WHO 2006

3. Take action for adults when there is:

- Unintended weight loss of more than 5 percent of body weight since the last visit.
- BMI under 18.5
- BMI that is 30 and above

Red shows severe acute malnutrition (BMI < 16.0).

Yellow shows moderate acute malnutrition (BMI 16.0–18.5).

Green shows adequate weight for height (BMI 18.5–24.9).

Orange shows overweight (BMI 25.0–29.9).

Purple shows obesity (BMI > 30).

Handout 13 -(cont). Calculating BMI

Body ma ss index (BMI) = Weight (kg) / Height (m)2

1. Find the client's height in the left-hand column, or y axis (1 meter = 100 cm).
2. Find the client's weight in the bottom row (x axis).
3. Find the point where the two lines meet. This is the client's BMI for that height and weight.

Height (cm)7

200	9	10	10	11	11	12	12	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30
198	9	10	10	11	11	12	12	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23	24	24	25	26	26	27	27	28	28	29	29	30	30	31
196	9	10	10	11	11	12	12	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23	24	24	25	26	26	27	27	28	28	29	29	30	30	31	31
194	10	10	11	11	12	12	13	13	14	14	15	15	16	16	17	18	18	19	19	20	20	21	21	22	22	23	23	24	24	25	26	26	27	27	28	28	29	29	30	30	31	31	32
192	10	10	11	11	12	12	13	14	14	15	15	16	16	17	17	18	18	19	20	20	21	21	22	22	23	23	24	24	25	25	26	27	27	28	28	29	29	30	30	31	31	32	33
190	10	11	11	12	12	13	13	14	14	15	16	16	17	17	18	18	19	19	20	20	21	22	22	23	23	24	24	25	25	26	27	27	28	28	29	30	30	30	31	32	32	33	33
188	10	11	11	12	12	13	14	14	15	15	16	16	17	18	18	19	19	20	20	21	22	22	23	23	24	24	25	25	26	27	27	28	28	29	29	30	31	31	32	32	33	33	34
186	10	11	12	12	13	13	14	14	15	16	16	17	17	18	18	19	20	20	21	21	22	23	23	24	24	25	25	26	27	27	28	28	29	29	30	31	31	32	32	33	34	34	35
184	11	11	12	12	13	14	14	15	15	16	16	17	17	17	18	19	19	20	21	21	22	22	23	24	24	25	25	26	27	27	28	28	29	30	30	31	31	32	32	33	34	35	35
182	11	11	12	13	13	14	14	15	16	16	17	18	18	19	19	20	21	21	22	22	23	24	24	25	25	26	27	27	28	28	29	30	30	31	31	32	33	33	34	34	35	36	36
180	11	12	12	13	14	14	15	15	16	17	17	18	19	19	20	20	21	22	22	23	23	24	25	25	26	27	27	28	28	29	30	30	31	31	32	33	33	34	35	35	36	36	37
178	11	12	13	13	14	15	15	16	16	17	18	18	19	20	20	21	21	22	22	23	24	25	25	26	27	27	28	28	29	30	30	31	32	32	33	33	34	35	35	36	37	37	38
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172	12	13	14	14	15	16	16	17	18	18	19	20	20	21	22	22	23	24	24	25	26	26	27	28	28	29	30	30	30	31	32	32	33	34	34	35	36	37	38	39	39	40	41
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154	15	16	17	18	19	19	20	21	22	23	24	24	25	26	27	28	29	30	30	31	32	33	34	35	35	36	37	38	39	40	40	41	42	43	44	45	46	46	47	48	49	50	51
152	16	16	17	18	19	20	21	22	23	23	24	25	26	27	28	29	29	30	31	32	33	34	35	35	36	37	38	39	40	41	42	42	43	44	45	46	47	48	48	49	50	51	52
Weight kg)	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

Activity 4.5.3 Measuring MUAC for Children and Adults

Training Methods: Demonstration and Skills Practice (20 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 14-Measuring and Classifying 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.
- Then ask the groups to classify the nutritional status of each MUAC. Explain that there has not been agreed upon classification for adults.
- 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: Draft 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 14: Measuring and Classifying 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 finger tips. 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.

MUAC CLASSIFICATION

Children 6–11 months old: <11 cm

Children 12–59 months old: <11 cm *SEVERE*

Children 5–9 years old: <13.5 cm

Children 10–14 years old: <16 cm

Adults: <18.0 cm (Adults includes both non-pregnant, pregnant, and post-partum adults.)

Infants 6–11 months old: 11–12 cm

Children 12–59 months old: 11–13 cm

Children 5–9 years old: 13.5–14.5 cm *MODERATE*

Children 10–14 years old: 16–18 cm

Adults: 18–21 cm

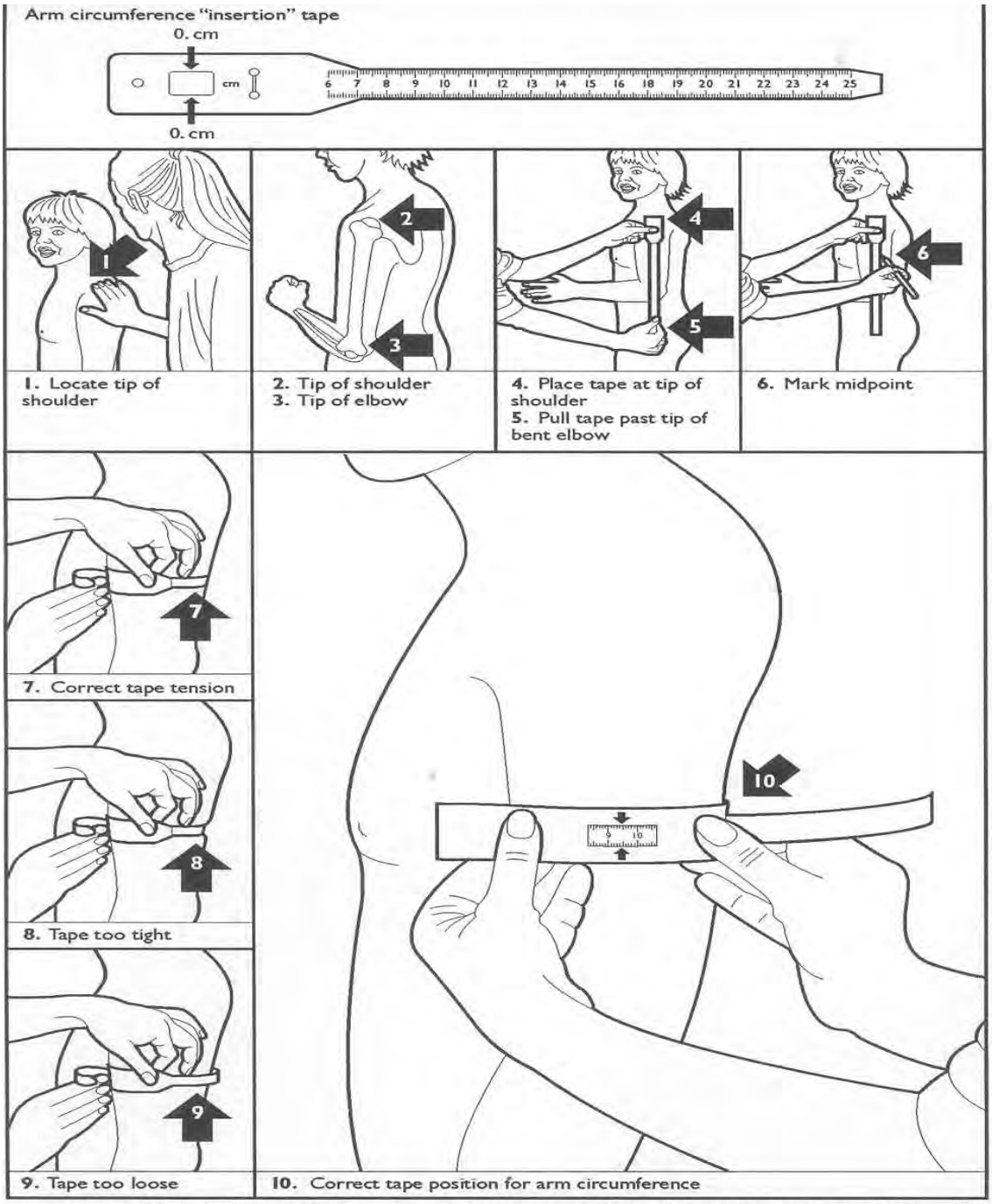
Children Infants 6 – 11 month old: > 12 cm

Children 12 -59 months old: > 13 cm *NORMAL*

Children 5 -9 years old: > 14.5 cm

Children 10 – 14 years old: > 18 cm

Adults: > 21 cm



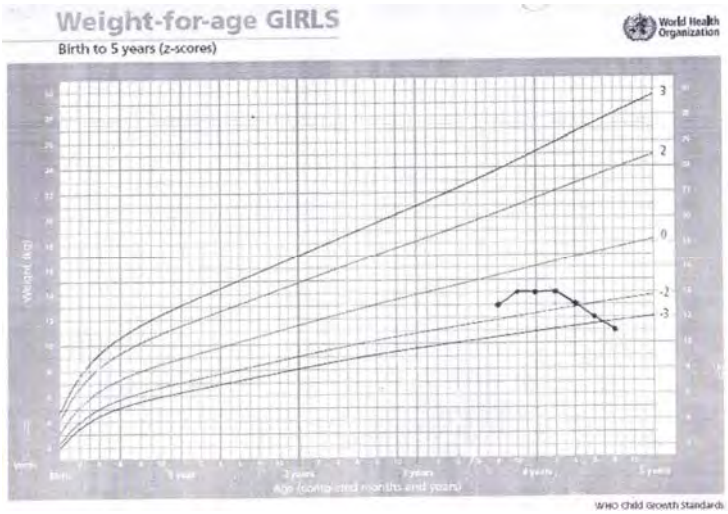
Source: How to Weigh and Measure Children: Assessing the Nutritional Status of Young Children, United Nations, 1986.

Activity 4.5.4 Assessing a Child's Growth Curve

Training Methods: Exercise (5 minutes)

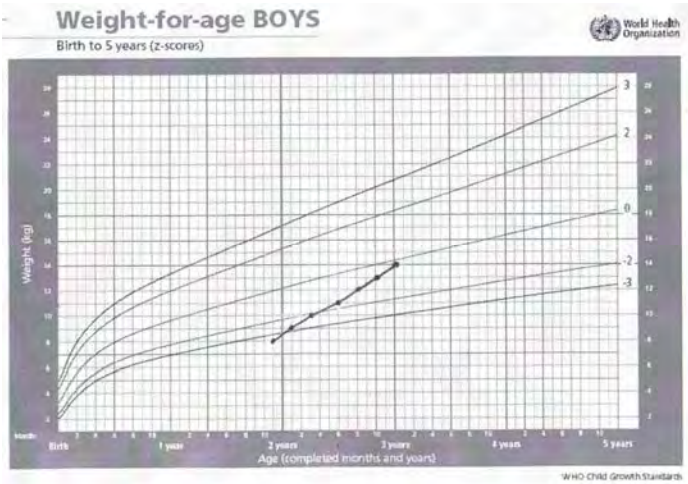
- Give each group a copy of **Handout 15. Sample Growth Chart**. Ask them to plot the following data as a growth curve and decide whether it shows weight gain, weight flattening, or weight loss.
- Ask one group to report its result.
- Answers: The first growth chart shows a defaulting growth pattern.
  - The second growth chart shows normal growth.
  - The third growth chart shows stagnant growth.

Handout 15: Sample Growth Chart



Weight Loss

Weight Gain



Weight Flattening

Activity 4.5.5 Classify Nutritional Status

Training Methods: Skills Practice (15 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.
- Present the non-anthropometric classification criteria and discuss the importance of tracking weight and signs of symptomatic diseases.

Information for Facilitators

Classification of Nutritional Status

There are three classifications for PLHIV nutritional status.

Severe Malnutrition

Children
According to SAM protocol/IMNCI guidelines, any of the following indicates severe malnutrition:

- Signs of severe visible wasting among children under 6 months old, though there is not an agreed-upon standard for this
- Oedema in both feet
- W/H < -3 Z-scores (or < 70 percent) using median WHO standard/reference value (use new WHO standards, where possible)
- MUAC < 110 mm in children 6–11 months old
- MUAC < 110 mm in children 12-59 months old
- MUAC < 135 mm in children 5–9 years old
- MUAC < 160 mm in children 10–14 years old

Adults

- BMI <16 (non-pregnant/non post-partum)
- MUAC <180 mm (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.)

NOTE: For children, if there is more than one measure of severe malnutrition, it is suggested that the classification that places the client in the most severe category should be used to determine the nutrition care plan.

Moderate Malnutrition

Children: Any of the following indicates moderate malnutrition:

- W/H < –2 Z-scores and > -3 Z-scores or 70-80 percent
- MUAC 110–120 mm for infants 6–11 months old
- MUAC 110–130 mm in children 12–59 months old
- MUAC 135–145 mm in children 5–9 years old
- MUAC 160–180 mm in children 10–14 years old

Adults

- BMI 16–17.99 (non-pregnant/non-post-partum)
- MUAC < 180–210 mm (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

Children:

- W/H < –1 Z-scores and > -2 Z-scores or 80-90 percent using the median WHO standard/reference value

Adults (non-pregnant/post-partum)

- BMI 18–18.49

Normal/Appropriate Growth

Children

- Weight gain parallel to or at a rate higher than the median growth curve
- W/H > 90 percent of median or > -1 Z-scores

Adults

- BMI >18.5
- MUAC >210 mm

Weight Loss or Poor Weight Gain

Weight loss does not directly determine a malnutrition classification, but it is a sign of nutrition problems that require further assessment and actions, especially for children or when the weight loss is unintentional and of significant magnitude. Signs for children are:

- Reported unintentional weight loss
- Confirmed unintentional weight loss of more than 5 percent of body weight over the past two months

Signs of Symptomatic Diseases

Sings 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. Major signs of symptomatic diseases include:

- Chronic lung diseases
- Persistent diarrhoea
- TB
- Other chronic OIs

Health Conditions with Increased Nutrition Needs

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 *Haemophylus 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.

Training Methods: Exercises (15 minutes)

- Brainstorm on the classification of PLHIV nutritional status and summarize using the information above.
- Ask the participants to remain in their groups and to take out **Handout 8. Algorithm for Management of Malnutrition in PLHIV**. Explain that they will practice using this algorithm to determine the nutritional status of several PLHIV.
- 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 algorithm 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
  - Adult with MUAC of 17
  - Child with W/H –2 Z scores
  - Child 36 months old with MUAC of 9
- Ask different groups to share their results and correct/discuss as necessary.
- Give each participant a copy of **Handout 16 – Case Study**. Let participants examine the information given in Part 1 (only), including Kebede's Family Health Card.
- Ask participants to look at their algorithms and W/H, W/A, and MUAC handouts to classify the child's nutritional status.
- Ask one or two groups to present their results, including Kebede's other problems. Answers should include the following:
  - Very low weight, but not severe (*Note*: The child may fit more than one classification, but the most severe classification decides the response.)
  - Severe malnutrition based on anthropometric measurement below the cut-off for severe acute malnutrition
  - Anaemia
  - Oral thrush
  - Fast respiratory rate
  - Finger clubbing, parotid enlargement, chronic lung disease
- Facilitate discussion in the larger group session.

Handout 16: Case Study

Part 1

Kebede is a 47-month-old boy and has been brought to the clinic by his mother because he is not eating well. His mother says he has lost weight in the past two months and has had diarrhoea and a cough. He weighs 9.3 kg. His height is 91cm. He looks thin (his ribs can be seen). He has no oedema on either foot. No blood has been seen in his stool, and he has not had a fever. He is on no medications. He looks pale. His eyes are not sunken, but there is a prolonged skin pinch. He is not thirsty. His respiratory rate is 38/min (slightly fast). He has generalised lymphoadenopathy, finger clubbing, and parotid enlargement. There is no in-drawing or bronchial breath sounds, but both lung fields show coarse crepitations. Kebede's Growth Chart is shown below. He had all of his immunisations. His mother says she is HIV infected and Kebede was also diagnosed with HIV during a hospital admission last year. The health care provider makes an appointment for the mother to come back in five months.

Part 2

Kebede's mother brings him back on the agreed-upon date (one month later). The child looks better, and his mother is happier. It has been three months since he was able to leave the outpatient severe malnutrition program. He now weighs 10.9 kg, and his height is 92.1 cm. His mother reports no diarrhoea or other illnesses and says his weight did not change the last two weighing. Five months ago Kebede was seen at the ART initiation site, and it was agreed that he should start first-line ART, which Kebede's mother has been collecting every month. The ART site team counselled his mother on treatment and adherence. The results of the sputum test were negative for TB.

Part 3

It is seven months since Kebede first arrived at the health centre. He is now living with his grandmother. The grandmother has been coming for two months to collect Kebede's supplementary feedings (6 kg of FBF per month). Today she is collecting the last ration. His mother has been hospitalized twice in the past three months. She is also on ART. Kebede looks well. He weighs 13.2 kg, and his height is 93 cm. He had diarrhoea last week, which was treated at home using traditional herbs. He is now going to school for six to seven hours a day.

Part 4

Fifteen months since the first contact, Kebede has responded well to ART. He is still in school and is attending the ART clinic every two months. Although his weight had increased to 14.5 kg by the time he was 62 months old, in the past two months, his weight has dropped to 11.5 kg. His mother died four months ago, and he is now being cared for by his grandmother along with six other children. His grandmother reports that Kebede has had poor appetite the past few weeks. He has not vomited nor complained of stomach pains. He seems to be adhering to his medications.

Activity 4.6 Nutrition Care Plan A for Children and Adults (1 hour and 40 minutes)

Training Methods: Exercise (15 minutes)

- Ask participants to form the same groups they were in on Day 1. Review with participants items 16–25 on **Handout 7 - Self-Assessment: Requirements for Nutritional Care and Support of PLHIV**.
- Ask the groups to discuss and complete items 16–25, assessing the resources in their own workplaces. Give a time limit of 15 minutes.
- When participants have finished filling out the forms, ask them to discuss the reasons for any gaps and what is needed to address the gaps. Ask one participant in each group to write the reasons and solutions on a flip chart. Give a time limit of 15 minutes.
- Then ask each group to present its gaps and solutions. Facilitate discussion in the larger group session and summarize the discussion using the key messages below.

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 s 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.

Activity 4.6.1 Nutrition Care Plan A: For Children and Adults Classified with Severe Malnutrition (1 hour, 25 minutes)

Training Methods: Presentation

- Ask participants to read through Nutrition Care Plan A (in Trainees Handout 8).
- 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.

1. Clinical and Nutrition Management of Severely Malnourished Children (45 minutes)

Nutrition Management

The principles of management of severe malnutrition are based on three phases:

- **Phase 1** - For patients without an adequate appetite and/or a major medical complication.
  - Patients are initially admitted to an inpatient facility.
  - F75 is used during this phase to promote recovery of normal metabolic function and nutrition-electrolyte balance.
  - Rapid weight gain is dangerous at this stage; that is why F75 is formulated.
- **Transition Phase**- Helps for recovery of metabolic function with modest weight gain (6g/kg/day).
  - F100 or RUTF may be used.
- **Phase 2 –** To promote rapid weight gain (greater than 8 g/kg/day)
  - Usually as outpatient with RUTF or
  - 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.
- The above principles apply both for children and adults.

Urgent: Determine whether the client needs inpatient care or can be managed on an outpatient basis. Use the national protocols for inpatient and outpatient regimens found in Annexes 1 and 2.

Admit the client as an **inpatient** if **any** of the following are true:

- There are signs of concurrent infections.
- The client has oedema/kwashiorkor.
- The client has poor appetite. See Annex 3: Appetite Test.
- The caregiver is unable physically or psychologically to provide home care to the severely malnourished child.

- The client has been in outpatient care for severe malnutrition for 2-3 months but has not gained weight (or has lost weight and oedema is becoming worse).

Put the client on **outpatient** nutrition care if **all** of the following are true:

- The client has no medical complications of malnutrition.
- The client has an appetite and can eat the ready-to-use therapeutic food provided.
- On follow-up, the client continues to gain adequate weight from inpatient care (3–5 gm/kg/day).

During **Phase 1** (which requires inpatient care), give F75 only, amounts based strictly on weight.

Criteria to Progress from Phase 1 to Transition Phase

The criteria to progress from phase 1 to transition phase are both:

- return to appetite, and
- beginning to lose oedema (this is normally judged by an appropriate and proportionate weight loss as the oedema starts to subside), and
- no IV line, no NGT.

Children with gross oedema (+++) should wait in Phase 1 at least until their oedema has reduced to moderate (++) oedema. These children are particularly vulnerable.

During **Transition Phase *and Phase 2:*** Replace F75 with F100 (70–80 ml/kg body weight/day). Gradually introduce RUTF in small amounts until patient can take RUTF.

Criteria to Progress from Transition Phase to Phase 2

- A good appetite. This means taking at least 90 percent of RUTF or F100 prescribed for Transition Phase.
- Oedematous patients (kwashiorkor) should remain in Transition Phase until there is a definite and steady reduction in oedema (now at + level). Those who remain as inpatients should stay in Transition Phase until they have lost their oedema entirely. Those who continue as outpatients can go when their appetite is good (taking all the diet in Transition Phase – not just in the moderate range) and they have reduced their oedema to ++ or _+.

- Whether inpatient or outpatient, therapeutic foods provided to children in Phase 2 should provide 200 kcal/kg of body weight/day and the essential micronutrients. *See tables with food quantities in Nutrition Care Plan A in Annex 11.*
- Small meals distributed over the day are recommended.

Clinical Management

- Refer client for HIV testing if his/her status is not known.
- Closely monitor weight and any other illnesses.
- If there are indications of hypoglycaemia, severe dehydration, severe anaemia, or other infections or medical complications, treat or refer for treatment per national/WHO guidelines.
- Ensure cotrimoxazole prophylaxis is provided to HIV-positive children, per the national protocol.
- Give vitamin A to children at admission (except for those who received vitamin A in the past six months and oedematous children).
- De-worm the client (if not done in the past four months) and repeat every six months thereafter.

Summary Table of Systematic Treatment of Patients

	Direct admission to inpatient care (Phase 1)	Direct admission to outpatient care (Phase 2)
Vitamin A	▪ 1 dose at admission(conditional) ▪ 1 dose on discharge ▪ Do not give when transferred to OTP Management -- it will be given in OTP	▪ 1 dose on the 4th week (4th visit)
Folic Acid	▪ 1 dose at admission if signs of anaemia	▪ 1 dose at admission if signs of anaemia
Amoxicillin	▪ Every day in Phase 1, and 4 more days in transition	▪ 1 dose at admission and give treatment for 7 days at home
Malaria	▪ According to national protocol	▪ According to national protocol
Measles (from 9 months old)	▪ 1 vaccine at admission if no card ▪ 1 vaccine at discharge	▪ 1 vaccine on the 4th week (4th visit)
Iron	▪ Add to F100 in Phase 2	▪ No iron; it is already in all RUTF
Deworming	▪ 1 dose at the start of Phase 2	▪ 1 dose on the 2nd week (2nd visit)

Refer to national protocol for details

- For outpatients, **demonstrate to the caregiver how to use RUTF and FBF**, and give enough supplies to last to the next return date.

Nutrition Counselling

- **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.

Routine Supplementation

- On the **second visit**, ensure children have **vitamin A supplements** and all children are **de-wormed** if they have not been in the previous six months. Repeat every six months thereafter.
- Anaemic children need iron supplementation according to the guidelines for the management of severe acute malnutrition.
- Children with diarrhoea should be given zinc for 14 days.

Follow-up Management

- Follow up with all children after one week
- If they are gaining weight adequately (3-5 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, consider further investigation and treatment according to the national protocol.

Transition to Care Plan B

- **Change to Nutrition Care Plan B** when W/H greater than -2 Z-scores or greater than 80 percent of the median for clients who entered based on the W/H criterion OR if MUAC is greater than the severe malnutrition cut-off for clients who entered based on the MUAC criterion AND the client has appetite AND can eat home foods AND has been in Nutrition Care Plan A for at least two months. (If supplementary feeding is not available, the child should continue to receive therapeutic feeding until W/H is greater than 85 percent of the median.)

1. Clinical and Nutrition Management of Severely Malnourished Adults

Nutrition Management

Urgent: Determine whether the client needs inpatient care or can be managed on an outpatient basis. Use the national protocol for inpatient and outpatient regimens found in Annex 1 and Annex 2.

- **Admit** the client as an inpatient if **any** of the following are true:
    a. There are signs of concurrent infections.
    b. The client has severe anaemia.
    c. The client has oedema.
    d. The client has poor appetite.
    e. The client has severe dehydration

- During **Phase 1** (which requires inpatient care), give F75 only, amounts based strictly on weight. The amount per kg given to adults is much less than for children and decreases with increasing age (see National Guidelines).

- During Phase 2, foods should provide approximately 50 percent of the energy requirements of non-HIV infected, non-malnourished adults.
- **Transition Phase *and Phase 2:*** Replace F75 with F100 using quantities given in the National Guidelines. Gradually introduce RUTF in small amounts until patient can take three to four sachets a day and give other nutrient-dense foods to provide for the remaining nutritional needs, such as fortified blended foods (FBF) or BP-100. Check and treat for accompanying illnesses (e.g., pneumonia or active TB, other ailments like chronic diarrhoea, fever, nausea/vomiting).
- Put the client on **outpatient/home management** nutrition care if **all** of the following are true:
  - The client has no medical complications of malnutrition.
  - The client has an appetite and can eat the ready-to-use therapeutic food provided.
  - On follow-up, the client continues to gain adequate weight from inpatient care.
  - For outpatients, **demonstrate how to use RUTF and FBF**, and give enough supplies to last to the next return date.
  - If outpatient clients can tolerate, gradual introduction of **home foods** can be encouraged.

Clinical Management

- If there are indications of hypoglycaemia, severe dehydration, severe anaemia, or other infections or medical complications, treat or refer for treatment, per national/WHO guidelines.
- If the client is not on ART, refer them to the ART care clinic for assessment.

Nutrition Counselling

- **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.

Transition to Care Plan B

- **For adults, transition to Nutrition Care Plan B** can occur when BMI is greater than 16 AND the client has appetite AND can eat home foods AND has some mobility. (If no supplementary food program is available, client should continue to receive therapeutic food until BMI is greater than 17.)
- **For pregnant/post-partum women, transition to Nutrition Care Plan B** can occur when MUAC is greater than 180 mm AND client has appetite AND can eat home foods AND has some mobility.

3. Follow-up Management of Outpatients (Children and Adults)

- Give ferrous sulphate tablets (usually after 14 days) if indicated by clinical signs of anaemia.
- If client is managed at home, weigh them **weekly** to ensure gain of **at least 3 gm/kg/day** for children. If they are gaining adequate weight (3–5gm/kg/day) review every **month.**

4. Transition to Nutrition Care Plan B based on criteria given above.

5. If client is not gaining weight, has lost weight for over two months, or has worsening oedema, refer to a medical officer immediately.

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Summary on Nutrition Care Plan A for Children and Adults

I. Therapeutic Feeding

SN	Phase	Therapeutic Food
1	Phase 1: (Inpatient)	F75
2	Transition: (Inpatient)	F75 – F100 (RUTF if they are able to eat)
3	Phase 2: (Inpatient or outpatient)	F100 or RUTF (inclusion of fortified blended foods or BP 100 for adults) Young children: 200 kcal/kg/day Adults: +~50 percent of energy

II. Clinical Care

- Ensure cotrimoxazole intake when indicated.
- Check if there are infections and ensure appropriate treatment is given.
- Refer to counselling/testing for HIV, TB if appropriate.
- Ensure that severe dehydration is treated.
- Refer for clinical staging and for ART assessment.

III. Routine Supplementation/Deworming

- Provide vitamin A to children if not given in the past four months, and then every six months thereafter.
- Provide deworming tablets to children every six months.
- If there is anaemia in adults, give ferrous sulphate (iron) after 14 days.

IV. Nutrition Counselling

- Carry out weight monitoring periodically.
- Counsel on increased energy intake.
- Promote the drinking of boiled/treated water and good personal hygiene.
- Explain drug-food interactions.
- Counsel on nutrition management of symptoms.
- Counsel on a healthy lifestyle, including:
  - Physical exercise
  - Avoiding alcohol, khat, sweetened foods, cigarettes etc.
- Promote active feeding and eating with the family.

IV. Follow-up Management

Inpatient – Outpatient – Follow-up Management

- Follow up with children after one week.
- Follow up with adults biweekly.
- If clients are gaining weight adequately (3-5g/kg/day for children) follow-up can be conducted monthly.

V. Transition to Care Plan B

Children

- W/H > -2 Z-scores or 80 percent median (use 85 percent if no supplemental food)

  OR
- MUAC > 110 mm 6 months – 59 months
- MUAC > 135 mm 5-9 years
- MUAC > 160 mm 10-14 years

  AND
- No oedema for two consecutive visits

Adults

- BMI > 16 kg/m2 (can use 17 if no supplemental food)
- MUAC >180 mm

Training Methods: Exercise and Discussion

- 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 8: Algorithm for Management of Malnutrition in PLHIV**. Review with them Nutrition Care Plan A.
- Now ask participants to refer again to **Handout 16: 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 4.7 Nutrition Care Plan B for Children and Adults (1 hour)

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.

1. Clinical and Nutrition Management of Moderately Malnourished Children (25 minutes)

Clinical Management

- Ensure cotrimoxazole prophylaxis is provided to HIV-positive children, per the national protocol.
- Counsel caregivers to make sure they understand the nutrition care plan.
- 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.

Nutrition Management

- 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 6–11 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 2 and Annex 5 for adaptation of these quantities to local snacks.

Table 2. 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

For children with moderate malnutrition, provide supplementary food using the protocol given in Nutrition Care Plan B as stated below.

Table 3. Supplementary food rations for HIV-positive children		
Age group	RUTF	FBF
6 months – 11 months	one 92 g. sachet of RUTF	50 g.
12 months – 23 months	one 92 g. sachet of RUTF	100 g.
24 months – 59 months	one 92 g. sachet of RUTF	100 g.
5 years – 9 years	one 92 g. sachet of RUTF	200 g.
10–14 years	one 92 g. sachet of RUTF	200 g.

Routine 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.

Nutrition Counselling

- **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)
- Watch for any possible drug-food interactions
- Sanitation and hygiene, especially making food and drinking water safe.

Follow Up

- Review first visit in two weeks.
- If responding, follow up every one to two months depending on response.
- Follow up regularly and monitor changes in appetite, eating patterns, and weight.

Transition to Care Plan C

- Children should graduate from food supplementation when they have received at least two months of supplementation and W/H are greater than -2 Z-scores for children under 5; BMI-for-age for children 5-17 years is greater than -2 Z–scores; or W/H is greater than 80 percent or MUAC is greater than the cut-off for moderate malnutrition for their age group (6 mo-12 mo > 120 mm; 12 mo – 59 mo > 130mm; 5-9 years > 145 mm; and 10-14 years > 180 mm) AND the child has been in Plan B for at least two months AND there has been no weight loss in the past month AND there are no signs of symptomatic diseases.

2. Clinical and Nutrition Management of Moderately Malnourished Adults (25 minutes)

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.**

Nutrition Management

- 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 2.**

Table 2. 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
Pregnant and post-partum women	525 - 600 (in addition to 2455 – 2670)	2 large size coffee cups of beso firfir

- **If the client is moderately or mildly malnourished provide supplementary food according to the following specifications: one 92 g sachet of RUTF (500 kcal/sachet) and 200 g of FBF (400 kcal/100 g).** Clients should graduate from the food when they are no longer moderately/mildly malnourished (BMI equal to or greater than 18.5 or for pregnant/postpartum women, MUAC greater than 210 mm).
- 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.
- Provide **food supplements** in daily amounts and **demonstrate** the home use of the supplements.
- 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.

Nutrition Counselling

- **Counsel on key messages and critical nutrition practices:**
- The need for periodic weight monitoring
- How to increase 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 drinking water safe.

Follow-Up Management

- **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.

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, MUAC > 210 mm for pregnant women.

Training Methods: Discussion and Exercise (10 minutes)

- Review the information above on Nutrition Care Plan B and answer any questions participants may have.
- Ask participants to refer to **Handout 8: Algorithm for Managing Malnutrition in PLHIV** and review Nutrition Care Plan B.
- Ask participants to refer again to **Handout 16: 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.

Activity 4.8 Nutrition Care Plan C for Children and Adults

Training Methods: Presentation and Discussion (25 minutes)

- Ask participants to read through Nutrition Care Plan C in Annex 11.
- 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.

1. Clinical and Nutrition Management of Mildly Malnourished and Normal Children (25 minutes)

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.

Nutrition Management

Table 3. Additional Energy Requirements of Asymptomatic PLHIV		
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 ashuk (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 drink

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.

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.

2. Clinical and Nutrition Management of Mildly Malnourished and Normal Adults (25 minutes)

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.

Nutrition Management

Counsel the client to eat enough food to meet increased energy/nutrient needs plus 10 percent energy, as shown in Table 3.

Table 3. Additional Energy Needs of Asymptomatic PLHIV

Age (years)	Additional (10%) energy (kcal) per day due to HIV	Food-based approach Give as addition to meals and other snacks
15–17	280 (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
Pregnant and post-partum women	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.

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 4.9 Nutrition Care for PLHIV on ART (30 minutes)

Training Methods: Group Exercise and Discussion (25 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 care giving
- 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

Training Methods: Exercise and Discussion (5 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 16: 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.
- 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. Refer to **Handout 15: Drugs Commonly**

Taken by PLHIV, Likely Side Effects, and Recommended Dietary Practices to Increase Drug Efficacy.

Handout 17: 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, dyspepsia, weakness, insomnia, cough, and headache
Didanosine (ddI)	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
Indinavir (IDV)	Antiretroviral	One hour before or 2 hours after meal. Drink at least 1,500 ml of fluid daily. Do not drink grapefruit juice, as it may lower the level of medicine in the blood.	Nausea, abdominal pain, headache, kidney stones, taste changes, vomiting, regurgitation, diarrhoea, insomnia, ascites, weakness, and dizziness. May increase the risk of lipodystrophy.
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

Medication	Purpose	Recommended to be taken with…	Potential side effects
			lipodystrophy and/or diabetes.
Nelfinavir	Antiretroviral	With a meal or light snack.	Diarrhoea, flatulence, nausea, abdominal pain, and rash. May increase the risk of lipodystrophy.
Nevirapine (NVP)	Antiretroviral	Can be taken without regard to food.	Nausea, vomiting, rash, fever, headache, skin reactions, fatigue, stomatitis, abdominal pain, drowsiness, paresthesia. High hepatoxicity.
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.
Saquinavir	Antiretroviral	With a meal or light snack within 2 hours of a high-fat meal and high-calcium meal. Avoid garlic supplements.	Mouth ulceration, taste changes, nausea, vomiting, abdominal pain, diarrhoea, constipation, flatulence, weakness, rash, and headache. May increase the risk of lipodystrophy.
Stavudine (d4T)	Antiretroviral	Can be taken without regard to food. Limit the consumption of alcohol.	Nausea, vomiting, diarrhoea, peripheral neuropathy, chills and fever, anorexia, stomatitis, diarrhoea, anaemia, headaches, rash, bone marrow suppression, and pancreatitis. May increase the risk lipodystrophy.
Tenefovir (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	Anorexia and diarrhoea.

Medication	Purpose	Recommended to be taken with…	Potential side effects
		yogurt. May interfere with vitamin B_6 metabolism and require vitamin B_6 supplementation. Avoid alcohol.	
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 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.

Activity 4.10 Daily Evaluation

Note to Facilitators: Thank participants for their contributions. Give each participant a copy of **Handout 18: 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.

Handout 18: 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						
2. Assessment and Classification of Nutritional Status						
3. Nutrition Care Plans						
4. Nutrition Care for ART Clients						

End of Day 2

Recap of Day 2

Activity 4.11 Field Practice (3 hours)

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 (1 hour)

Total Time 3 hours

Materials

- Handout 17: Data Collection Form for Field Practice
- Handout 18: 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

Feedback on Practice Session (2 hours)

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 19: Data Collection Form for Field Practice - Algorithm for Managing Malnutrition in PLHIV–Children

Date (dd/mm/yy)	Age (yrs.)	Sex (M/F)	Weight (KG)	Height (cm)	W/H Z-score	BMI for age Z-score	MUAC (cm)

ASSESS					
HISTORY	**LOOK AND FEEL**	**CRITERIA**	**CLASSIFY**	**TREATMENT/CARE PLAN**
Refer to records (or if needed ask to determine the following) 1.Has the child lost weight in the past month/past visit 2.Does the child have: • Cough for more than 21 days? This may be due to HIV-related chronic disease such as LIP or to PCP, TB, pneumonia… • Active TB on treatment • Diarrhoea for 14 days or more • Other chronic OI or malignancy • Poor appetite Ask all questions and complete all assessments with each child	1.For those under 6 months of age, look for signs of severe visible wasting, e.g.: • Loss of muscle bulk • Sagging skin/buttocks • Too weak/feeble to suckle • Weight/height < 70% and presence of bilateral oedema. 2.Check the presence of oedema on both feet 3.Measure the weight (kg) and height (cm) • Compute weight-for-height for children < 5 yrs. • Compute BMI for age for children 5 -17 yrs. 4.Measure the mid-upper-arm circumference (MUAC). 5.If wt/ht and MUAC are not possible, then measure weight-for-age • If weight-for-age is used, check the shape of the growth curve. Or • Estimate percentage change in weight since last visit. Examine/observe for **danger signs** of: • Intractable vomiting • High fever >39°C or malaria • Hypothermia <35°C • Severe anaemia (paleness, palm pallor) • Convulsions/fits • Persistent diarrhoea • Bilateral oedema +++ • Severe dehydration • Extensive skin lesions • Very weak/lethargy • Pneumonia, active TB, any chest in-drawing.	Bilateral pitting **oedema** (in both legs) **OR** **Weight-for-height**, Z-score below -3 or < 70% of the WHO median reference value **OR** **MUAC** Infants 6 mo-11mo <110mm Children 12 mo-59 mo <110mm Children 5 yr-9 yr <135mm Children 10 yr-14 yr <160mm **OR** **Visible signs** of severe malnutrition for < six months **OR** **BMI for age**: 5-17 years <-3 Z-score	**Severe or moderate malnutrition with complications** • If any of the danger signs • OR Infant < 6 months OR • Severe bilateral oedema • OR Marasmus, kwashiorkor (Wt/Ht < 70 % with oedema OR • MUAC < 110 mm with oedema OR • Poor appetite **Severe malnutrition without complications** • W/H or MUAC < cut off for severe malnutrition AND • None of the danger signs AND • No severe bilateral oedema AND • > 6 months of age	**Admit or refer for inpatient care.** **NUTRITION CARE PLAN A (RED)**
		Weight-for-height, Z-score below -2 or 70 - 80% of the WHO median reference value **OR** **MUAC** Infants 6mo-11mo <120mm Children 12 mo -59 mo <130mm Children 5yr-9yr <145mm Children 10yr-14yr <180mm **OR** **BMI for age**: 5-17 years z-score from -2 to -3	**MODERATE MALNUTRITION**	**NUTRITION CARE PLAN B (YELLOW)**
		Regardless of W/H, MUAC or BMI for age: Growth Curve Faltering Confirmed significant weight loss of > 5% since the last visit	**POOR WEIGHT GAIN**	
		Regardless of W/H, MUAC or BMI for age: ▪ Chronic lung disease ▪ TB ▪ Persistent diarrhoea ▪ Other chronic OI or malignancy	**Signs of SYMPTOMATIC DISEASE**	
		Child is gaining weight **Weight-for-height**, Z-score > -2 or > 80% of the WHO median reference value • Maintaining weight to the given height **OR** **BMI for age**: 5-17 years >-2 Z-score In the absence of signs of symptomatic disease and significant weight loss.	**GROWING WELL**	**NUTRITION CARE PLAN C (GREEN)**

Algorithm for Managing Malnutrition in PLHIV–Adult

Date (dd/mm/yy)	Age (yrs.)	Sex (M/F)	For women (P/M) (L/M)	Weight (KG)	Height (cm)	BMI (W/H^2) use chart	MUAC (cm)

ASSESS					
HISTORY	**LOOK AND FEEL**	**CRITERIA**	**Classification**	**Treatment/care plan**
Refer to records (or if needed ask to determine the following) 1. Has client lost weight in the past month/past visit? 2. Has the client had: ▪ Active TB (on treatment)? ▪ Diarrhoea for more than 14 days? ▪ Other chronic OI or malignancy (e.g., oesophageal infections)? ▪ Mouth sores/oral thrush? 3. Has the client had noticeable changes on body composition/ fat distribution? ▪ Thinning of limbs and face ▪ Fat distribution on the limbs, breasts, stomach region, back/hump 4. Has the client experienced the following? ▪ Nausea/vomiting ▪ Persistent fatigue ▪ Poor appetite	1. Check for oedema on both feet (and sacrum). In adults, rule out other causes of symmetrical oedema (pre-eclampsia, severe proteinuria, kidney diseases (e.g., nephrotic syndrome, acute renal diseases, chronic renal diseases), acute filariasis, heart failure and wet beri-beri). 2. Measure weight (kg) and height (cm). 3. Compute BMI (adults) 4. Measure MUAC (pregnant and post-partum women and/or adults who cannot stand straight). 5. Examine for conditions that cause secondary malnutrition as in above and as in history. 6. Examine/observe for complications and danger signs: - Severe anaemia (paleness, pallor) - Severe dehydration - Active TB - Bilateral severe oedema	Bilateral pitting **oedema** (both legs) **Adults (non-pregnant/post-partum)** BMI < 16 kg m^2 (If BMI cannot be measured, use MUAC cut off below.) **Pregnant/postpartum women** MUAC<180 mm	**SEVERE/MODERATE malnutrition with complications** If client has any of the danger signs or severe oedema (Severe dehydration, poor appetite and bilateral oedema) **Acute malnutrition without complications** If client has BMI or MUAC less than the severe malnutrition cut off and does not have any of the danger signs	**Admit or refer for inpatient care.** **NUTRITION CARE PLAN A (RED)**
		Adults (non-pregnant/post-partum) BMI 16 - 16.99 Moderate BMI 17 - 18.49 (If BMI cannot be measured, use MUAC cut-off below.) Pregnant/postpartum women MUAC 180 - 210 mm	**MODERATE malnutrition**	**NUTRITION CARE PLAN B (YELLOW)**
		Regardless of BMI or MUAC: Confirmed unintentional weight loss of > 5% since the last visit Reported weight loss (e.g., loose clothing which used to fit)	**Significant weight loss**	
		Regardless of BMI or MUAC: Chronic lung disease TB Persistent diarrhoea Other chronic OI or malignancy	**Signs of SYMPTOMATIC DISEASE**	
		Adults (non pregnant/post-partum) BMI ≥ 18.5 (If BMI not possible, use MUAC) **Pregnant/post-partum** MUAC ≥ 210 mm in the absence of signs of symptomatic disease and significant weight loss	**NORMAL**	**NUTRITION CARE PLAN C (GREEN)**

Handout 20: 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/H^2) Use chart for adults										
For women (P/M) (L/M) for adults										
History										
Look and Feel										
Classification										
Treatment/care plan										

SESSION 5: LOGISTICS

Estimated duration: 1 hour

Purpose

In this session participants will become familiar with in-country logistics systems for forecasting, storing, and dispensing nutrition and HIV supplies, as well as on nutrition and HIV documentation and reporting.

Learning Objectives

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

- Identify logistical issues related to clinical nutrition services for PLHIV.
- Review **Handout 6: Self Assessment: Requirements for Clinical Nutrition Care of PLHIV.**

Overview

Activity 5.1 Purpose of logistics, forecasting, storing, and dispensing supplies (45 minutes)
Activity 5.2 Review exercise (15 minutes)

Materials

- Flip chart and markers
- Masking tape
- Critical Nutrition Practices for PLHIV written on a flip chart
- Five sets of cards (VIPP Card)

Training Methods: Presentation and Discussion (45 minutes)

- Brainstorm on the definition of existing logistics systems and their components.
- Discuss the principle of good storage and related management issues.
- Discuss and summarize using the information below in a flip chart.

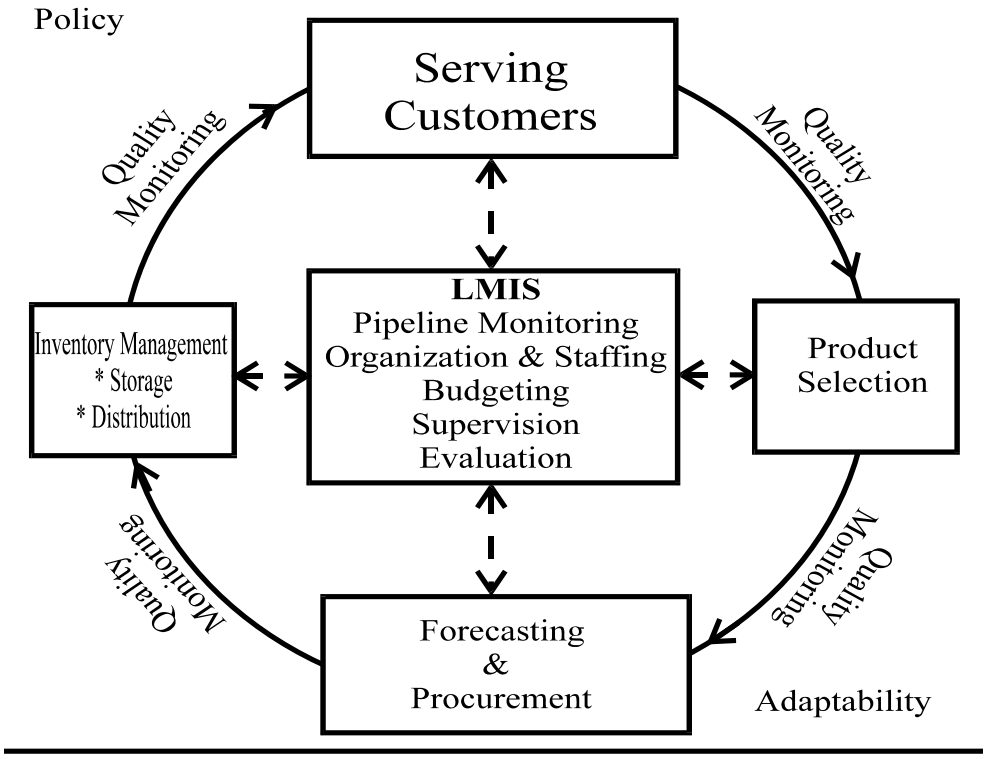
Note to Facilitators: Present an overview of the objectives of the session and the time allocated.

Activity 5.1 The Purpose of the Logistics, Forecasting, Storing, and Dispensing of Supplies

A logistics system provides excellent customer service by fulfilling the following six rights: Quantities, Goods, Place, Time, Condition, and Cost.

Programs often fail due to logistics problems that affect their ability to fulfil one or more of the six rights. A program that offers an excellent atmosphere and excellent customer service, but cannot meet the customer's need by fulfilling all six rights, will ultimately fail.

Logistics Cycle



Forecasting

Purpose of Forecasting

Forecasting, one of the most important activities at the central level of a service delivery system, is where procurement usually takes place. Forecasting is often done by logistics managers, management information systems (MIS) managers, demographic specialists, and program managers. Donors, other program managers involved in similar activities, and consultants may also be part of the process. Forecasting is used to estimate the quantities of each product that a program will dispense to users for a specific period of time in the future.

Forecasting is not the same as routine ordering, which relies on the inventory control system to account for minor changes in consumption. In forecasting, you must be able to project longer-term trends in usage and procure appropriately.

Forecasting is an essential activity because of its enormous impact on the entire logistics system's ability to fulfil all six rights.

Principles of Good Storage Practices

→ Clean and disinfect the storeroom regularly.
→ Store products in a dry, well-lit, well-ventilated storeroom that is out of direct sunlight.
→ Protect the storeroom from water penetration.
→ Keep fire safety equipment available, accessible, and functional, and train employees to use it.
→ Limit storage area access to authorized personnel and lock up controlled and high-value products.
→ Stack cartons at least 10 cm off the floor, 30 cm away from the wall and other stacks, and no higher than more 2.5 m.
→ Store medical supplies away from insecticides, chemicals, old files, office supplies, and other materials.
→ Store flammable products separately from other products. Take appropriate safety precautions.
→ Store health commodities to facilitate FEFO procedures and stock management.
→ Arrange cartons with arrows pointing up, and with identification labels, expiry dates, and manufacturing dates clearly visible.
→ Separate from usable commodities and dispose of damaged or expired products. Remove them from inventory immediately and dispose of them using established procedures.
→ Maintain a cold storage system, including a cold chain, as required.

Activity 5.2 Review Exercise (15 minutes)

Training Methods: Review Exercise and Discussion

- Ask participants to form small groups. Review again with participants items 26–34 on **Handout 7: Self-Assessment: Requirements for Nutritional Care and Support of PLHIV**.
- Ask the groups to discuss and complete items 26-34, assessing the resources in their own workplaces. Give a time limit of 15 minutes.
- Discuss the gaps and what is needed to address the gaps. Ask one participant in each group to write the reasons and solutions on a flip chart. Give a time limit of 15 minutes.
- Ask each group to present its gaps and solutions. Facilitate discussion in the larger group session.

SESSION 6: MONITORING AND EVALUATION (1 hour)

Purpose

In this session, participants will become familiar with monitoring and evaluation systems and collecting the relevant information for reporting, making appropriate decisions to improve program quality, and evaluating program effectiveness.

Learning Objectives

By the end of the session, participants will be able to:
- Identify indicators to monitor ongoing nutrition care services
- Define information needed to track indicators
- Define an information collection and reporting system (integration into existing HMIS and HIV/AIDS M&E frameworks)

Overview

Activity 6.1 Definition of Monitoring and Evaluation and Types of Indicators to be Used (30 minutes)
Activity 6.2 Review of Proposed Indicators (20 minutes)

Activity 6.1 Definition of Monitoring and Evaluation and Types of Indicators to be Used

Training Methods: Presentation and Discussion (30 minutes)

- Brainstorm on the definition and purpose of monitoring and evaluation and ways to use M&E information.
- Brainstorm inputs, processes, outputs, outcomes, and impacts for nutrition and HIV interventions.
- Identify indicators for different components of clinical nutrition care services (input-process-output-outcome-impact).
- Explain and discuss any specific indicators that sites need to collect and how to collect them.
- Discuss and summarize the information.

Information for Facilitators

Monitoring and evaluation (M&E) is important to:
- Inform and improve program design and implementation.
- Report on progress and results at the national level and to donors.
- Share information with other programs to support improved programming and advocacy.

Much of the information collected for M&E should be collected as part of the provision of routine services to:

- Inform and educate clients about their status and progress.
- Keep service providers aware of client status and progress to guide counselling and other service provision.
- Determine eligibility for services such as food support.

The key steps in planning monitoring and evaluation are (put these on flip chart):

- Identify components to be measured based on program objectives and activities, based on information needs, and based on M&E capacity.
- Identify indicators that measure the components to be measured.
- Determine who will collect information for each indicator and from where.
- Incorporate a process for collection of the data needed for each indicator into existing data-collection systems.
- Establish targets for indicators.

At the service-provision level, it is critical to integrate the collection of nutrition indicators into routine data collection at facilities and, if possible, into the national HMIS. If possible, nutrition information should be included in standard client forms and registers. The flow of information should be designed so that service providers (including clinicians) can use it to inform the services they provide to clients.

In selecting indicators, it is helpful to identify the inputs, process, outputs, outcomes, and impacts of the services provided and indicators that measure key components at each stage. **Handout 15** offers some illustrative indictors that could be used to monitor nutrition care and support for PLHIV.

Input – Process – Output - Outcome - Impact

Examples of Inputs

- Staff who have been trained
- Guidelines
- Storage facilities for food
- Supplies
- Anthropometric equipment
- Counselling materials
- Nutrition-related forms and records
- Referral system

Similar lists can be brainstormed for processes, outputs, outcomes, and impacts.

Activity 6.2 Review of Proposed Indicators

Training Methods: Exercise and Discussion (20 minutes)

- After brainstorming possible indicators, distribute **Handout 21: List of Illustrative Indicators** and ask participants to form small groups and review it based on the nutrition care plans and critical nutrition practises.
- Ask groups to discuss, present gaps (if any) and complete the list.
- If there are common indicators that facilities are expected to collect, explain these indicators and discuss how to measure and record them accurately.
- Discuss and summarize the information.

Handout 21: List of Illustrative Indicators

Input Indicators

1. Number/percent of HIV-treatment sites where standard protocol for nutrition care of HIV exists is available at the facility, or has at least one staff member trained.
2. Number of HIV-treatment sites where standard protocol for nutrition care of HIV exists, or has at least one staff member trained.
3. Number/percent of sites with forms/registers for documenting nutrition information.
4. Number/percent of sites with standard/functional equipment:
    - Weighing scales (adult, paediatric)
    - Stadiometer
    - Length board
    - MUAC tapes
5. Number/percent of sites with food commodities available (no stock-outs in the past three months).
6. Number and proportion of hospitals, health centres, and health posts providing HIV services that have counselling materials on nutrition and HIV.
7. Number and proportion of hospitals, health centres, and health posts providing HIV services that have at least one service provider trained to provide nutrition care and support services through a HAPCO course.
8. Number of people trained in nutrition and HIV to provide nutrition care and support services to PLHIV.
9. Number of community health workers trained to support PMTCT and nutrition services.
10. Number of community health workers trained to support HBC and nutrition services.

Process Indicators

1. Proportion of facility staff providing nutrition counselling to PLHIV who provide quality counselling (to be defined by standard checklist).
2. Number/percent of sites with an adequate inventory-control system and transport system for commodities.
3. Number/percent of sites providing nutrition services ≥ x days/week.
4. Number/percent of service providers in nutrition.
5. Counselling that meets the quality standard.
6. Number/percent of service providers who measure height/weight/MUAC correctly based on standard checklist.
7. Number/percent of service providers using the protocol or standards in service provision.

Output Indicators

1. Number and proportion of PLHIV clients receiving nutrition assessment.
2. Number and proportion of PLHIV clients provided with nutrition counselling.
3. Number of clients provided with nutrition supplements (disaggregated by ART, non-ART, PMTCT, and OVC, and disaggregated by therapeutic food, supplementary food, and micronutrient supplements).
4. Proportion of clinically malnourished PLHIV receiving therapeutic or supplementary food.
5. Number of households with OVC supported in income-generating activities (IGA) and food production.
6. Number of new TV or radio spots produced on nutrition and HIV, and number of hours aired.
7. Number/percent of clients with weight/height measured or recorded at first entry.
8. Number/percent of clients with weight/height measured or recorded in the past three months.
9. Number/percent of clients whose nutrition management plan is determined.
10. Number/percent of clients who are put on nutrition plan/disaggregated by plan.
11. Number/percent of PLHIV receiving food and nutrition support at facility level.
12. Number/percent of malnourished clients receiving food.
13. Number/percent of partners' sessions held to review quality of nutrition services.

Outcome Indicators

1. Number/percent of clients graduating from Plan A to Plan B and from Plan B to Plan C.
2. Average duration spent in each plan.
3. Number/percent of clients who know two or more ways of increasing energy intake.
4. Proportion of clients who ate at least the recommended number of times per day on the day prior to their visit.

Impact Indicators

1. Proportion of PLHIV who are malnourished (disaggregated by adult, pregnant/postpartum, and children).
2. Proportion of clients with unintentional weight loss since the last weighing.
3. Proportion of malnourished PLHIV who die per quarter.
4. Incidence of OI or number of episodes of diarrhoea per number of clients.
5. Number/percent with perceived improvement in quality of life.
6. Number/percent of clients in the working category of functional status (W, A, B).

SESSION 7: 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 7.1 Post-test (30 minutes)
Activity 7.2 Evaluation of Course (30 minutes)

Materials

- Handout 22: Post-test
- Handout 23: Daily Evaluation Form
- Handout 24: Course Evaluation Form

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

Detailed Activities

Activity 7.1 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 22: 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 7.2 Course Evaluation (30 minutes)

Training Method: Evaluation Exercise

- Distribute **Handout 23: Daily Evaluation and Handout 24: 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 22: Post-test for Clinical Nutrition Care for PLHIV Course

Please mark the correct answer.

1. Telling a client what to do is the surest way to change his/her behaviour.
   a) True b) False
2. People living with HIV (PLHIV) are more susceptible to malnutrition than other people.
   a) True b) False
3. Good nutrition can slow PLHIV from progressing to full-blown AIDS.
   a) True b) False
4. HIV and frequent infections decrease the body's energy and nutrient requirements.
   a) True b) False
5. You can assess a client's nutritional status only by weighing him/her.
   a) True b) False
6. Which of the following nutrients are most needed by PLHIV?
   a) Energy b) Proteins c) Vitamins and minerals d) All
7. Nutrition care and support do not have any effect on the effectiveness of drug treatments.
   a) True b) False
8. Which of the following is true?
   a) Nutrition support has the greatest impact in the early stage of HIV.
   b) Nutrition support has the greatest impact in the late stage of HIV.
   c) Nutrition support has an impact regardless of the stage of HIV.
9. Pregnant women need more energy than post-partum mothers.
   a) True b) False
10. It is impossible for a person living with HIV to strengthen or build muscle and improve overall health.
    a) True b) False
11. There is evidence that nutritional status of the mother can have an effect on mother-to-child transmission of HIV.
    a) True b) False

12. People with HIV need to consume more energy every day than uninfected people of the same age, gender, and level of physical activities.
    a) True b) False
13. PLHIV are advised to drink boiled or treated water at all times.
    a) True b) False
14. Fermentation improves food quality because it aids digestion and absorption of food.
    a) True b) False
15. An HIV-positive mother is never advised to breastfeed her child.
    a) True b) False
16. HIV-related symptoms can be managed only by medicines.
    a) True b) False
17. PLHIV need to consume more energy every day than uninfected people of the same age, sex, and level of physical activity.
    a) True b) False
18. Body mass index (BMI) is the best indicator for assessing the nutritional status of pregnant women.
    a) True b) False
19. People suffering from oral thrush (candidiasis) are advised to avoid spices and sugar.
    a) True b) False
20. Which statement is false?
    a) A person suffering from diarrhoea needs to drink a lot of water.
    b) Green leafy vegetables are rich sources of iron.
    c) People suffering from constipation should eat more refined foods.
    d) People with nausea should eat small, frequent meals.
21. Please list three effects HIV has on nutritional status.

    _____

    _____

    _____

22. Please list three effects of good nutrition practices have on HIV.

_____

_____

_____

23. How can drugs and foods affect each other?

_____

_____

_____

_____

24. What is the recommended energy intake for adults who are HIV positive with secondary infection?

_____

25. What are the additional energy requirements of HIV-positive children who are symptomatic and experiencing weight loss?

_____

Handout 23: Daily Evaluation Form (Day 3)

1 = Good 2 = Average 3 = Poor

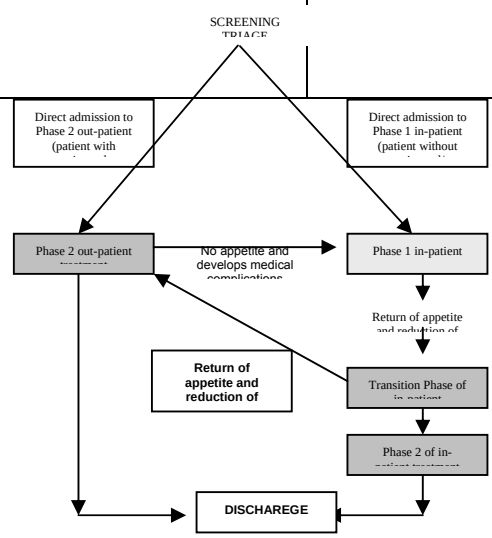
Topic	Time allocated	Relevance to your work	Support from facilitators	Resources	Contribution to skills improvement	Suggestions
Session 4						
1. Field practice						
2. Feedback from the field						
Session 5						
1. Logistics						
Session 6						
1. Monitoring and Evaluation						
Session 7					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

Handout 24: 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: National Protocol for the Management of Severe Acute Malnutrition, Patients Over Six Months

ADMISSION CRITERIA	**Age 6 months – 18 years** • **Weight/height < 70% or** • **Presence of bilateral oedema or MUAC < 110 cm when height > 65 cm**		**> 18 years** • **MUAC < 180 mm** • **Presence of bilateral oedema unless clear cut other cause**		
PROTOCOL	**PHASE 1**	**TRANSITION PHASE**	**PHASE 2**		
THERAPEUTIC DIET	**F75**	**F100 or RUTF**	**F100 or FUTF**		
QUANTITY	**Refer to national protocol**	**Refer to national protocol**	**Refer to national protocol**		
SURVEILLANCE • Weight and oedema • Height • Body temperature • MUAC • Appetite test • Standard clinical signs	Every day Every 21 days Every day Every week n/a Every day	Every day Every 21 day Every day Every week Judge from intake chart Every day	Inpatient/Day care / Outpatient/OTP **3 times per week / Every week** **Every 21 days / Every 21 day** **Every day / Every week** **Every week / Every week** **n/a / Every week** **Every day / Every week**		
CRITERIA FOR PROGRESSING TO NEXT PHASE	**From Phase 1 to Transition:** • Return of appetite and • Beginning to lose oedema **Children with gross oedema (+++) should wait in Phase 1 at least until their oedema reduces to moderate (++) or mild (+).**	**From Transition to Phase 2:** • Good appetite • Marasmic patients spend at least 2 days in Transition • Oedematous patients have completely lost oedema	**Discharge criteria:** **Age 6 months to 18 years (option 1)** • Weight/height ≥ 85% on at least one occasion (one weighing) and no oedema for 14 days **6 months – 18 years (option 2)** • 15% weight gain and no oedema in last 14 days > 18 years • 15% weight gain and no oedema in last 14 days		
CRITERIA FOR MOVING BACK TO PHASE 1	• If patient gains weight more rapidly than 10g/kg/day in Transition • If there is increasing oedema • If child without oedema develops oedemas • If rapid increase in size of liver • If any signs of fluid overload develop • If tense abdominal distension develops • If patient gets significant refeeding diarrhoea so that weight loss occurs • If complication arises that necessitates intravenous infusion • If naso-gastric tube is needed		**Systematic Treatment**	**Direct admission in Phase 1 (in-patient)**	**Direct admission in Phase 2 (out-patient)**
			Vitamin A	**1 does at admission (conditional – see protocol) and 1 dose on discharge**	**1 does on 4th week (4th visit)**
			Folic acid	**1 dose at admission if sign of anaemia**	**1 dose at admission if sign of anaemia**
			Amoxicillin	**Every day in Phase 1 plus 4 days in Transition** **According to national protocol**	**1 dose at admission plus 7 days treatment at home**
			Malaria	**According to national protocol**	**According to national protocol**
			Measles (>9 months)	**1 vaccine at admission if no card and 1 vaccine at discharge**	**1 vaccine on 4th week (4th visit)**
			Iron	**Add to F100 in Phase 2**	**No**
			Albendazole	**1 dose on first day of Phase 2**	**1 dose on 2nd week (2nd visit)**

Annex 2: Summary of Outpatient Therapeutic Program (OTP)

Outpatient Care

Children can be admitted directly into the OTP, treated with routine drugs, and given RUTF to eat at home. Outpatient treatment is normally organised by the same facilities that care for inpatients.

- Patients who pass the appetite test and are free of medical complications should normally be directly admitted to the OTP, if the caretaker agrees. Outpatient programmes are run on a weekly basis; exceptions can be made for individual patients living in very remote areas, where they can be seen on a fortnightly basis.

- Patients attending the TB and ART programmes should be systematically screened for severe malnutrition and referred to the outpatient programme if they fulfil the admission criteria.

Inpatient Care

These children are at the highest risk of death and require 24-hour care until their condition is stabilised and their appetite returns.

The formula used during this phase (F75) promotes recovery of normal metabolic function and nutrition-electrolytic balance. Rapid weight gain at this stage is dangerous: that is why F75 is formulated.

Transition Phase

A transition phase has been introduced for inpatients because a sudden change to large amounts of food before physiological function is restored can be dangerous and lead to electrolyte disequilibrium. During this phase the patients start to gain weight as F100 or RUTF is introduced.

Supplementary Feeding

Ideally, supplementary feeding is one of the components of therapeutic care for moderately malnourished individuals.

The main objective of therapeutic care is to reduce the prevalence of severe malnutrition and mortality among vulnerable groups. Children over six months and under five years are more susceptible to malnutrition because of higher nutritional requirements in relation to their weight in comparison with adults.

Admission

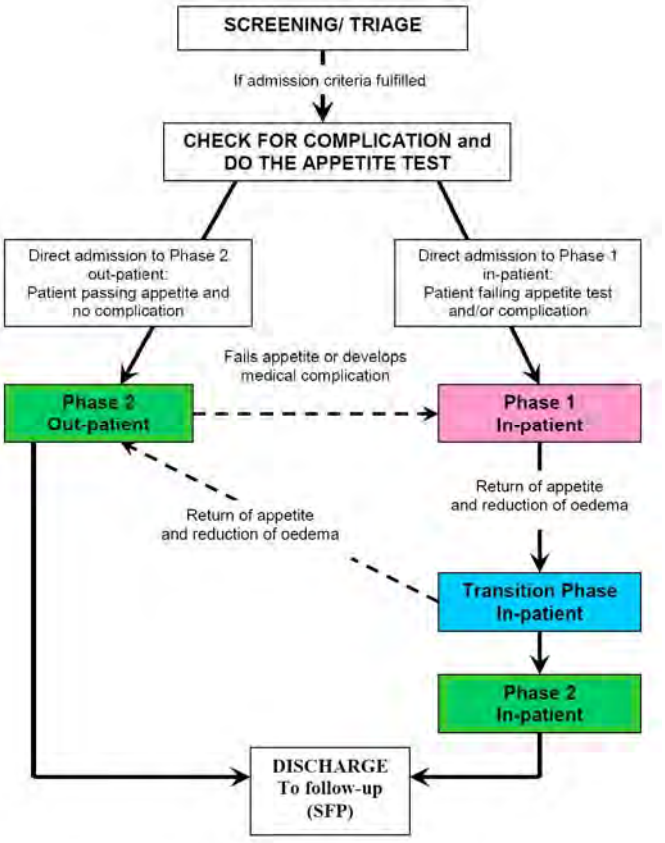
Admission Criteria

AGE	ADMISSION CRITERIA
6 months to 18 years	**1.** W/H or W/L < 70 percent **or** **2.** MUAC < 11.0 cm with a length > 65 cm **or** **3**. Presence of bilateral pitting oedema

There is no MUAC cut-off for older adolescent; weight/height and presence of oedema are the criteria can be used for admission.

Note: MUAC is the preferred indicator for referring and admitting children to CTC programmes. It is easy to use and identify children with a high risk of mortality. WFH is used in screening for CTC admission only in countries where national protocols dictate that it must be used.

Admission Procedures



➔ First the patient is identified in the community or health facility by anthropometry and assessment of oedema. Once the child has fulfilled any of the admission criteria, the health worker needs to decide whether the child requires inpatient or outpatient care. This can be done by assessing the medical condition (history of the child's condition taken from the mother/carer and a full medical examination) and appetite test. This enables the health worker to identify complications requiring inpatient care.

If any of the following are present, then the child must be referred to inpatient care.

SIGN	REFERRAL to SC / TFU / HOSPITAL
OEDEMA	Grade 3 (+++) Marasmus–kwashiorkor (W/H <70 percent with oedema) **or** MUAC < 11 cm with oedema
APPETITE / ANOREXIA	Failed appetite test or unable to eat
VOMITING	Severe/intractable (uncontrollable)
TEMPERATURE	Fever: >39 °C Hypothermia: axillary temperature < 35 °C or rectal < 35.5° C
RESPIRATION RATE (rr)	60 respirations/minute for < 2 months 50 respirations/minute from 2 to 12 months > 40 respirations/minute from 1 to 5 years 30 respirations/minute for over 5 year-olds **or** Any chest in-drawing
SKIN	Extensive open skin lesions, infection
ANAEMIA	Very pale (severe anaemia), bleeding tendencies, jaundice
SUPERFICIAL INFECTION	Extensive infection requiring intramuscular treatment
ALERTNESS	Very weak, lethargic, unconscious Fitting/convulsions
HYDRATION STATUS	Severe dehydration based on history and clinical signs
	Any conditions that require an infusion or NG tube Feedings.
	Other general signs the clinician thinks warrants transfer to the inpatient facility for assessment.

Referral criteria:

- Altered consciousness (e.g., confusion, sleepiness, drowsiness, coma);
- Not able to drink or feed;
- Severe dehydration;
- Persistent fever;
- Frequent vomiting;
- Convulsion or recent history of convulsions;
- Unable to sit or stand up;
- Pallor (anaemia);
- No urine output in the last 24 hours;
- Bleeding;
- Jaundice (yellowish coloration);
- Difficulty breathing;
- Other conditions that need to be managed at a higher-level facility.

Note: Children with active malaria should be admitted for inpatient care.

Medicines

	Direct admission to inpatient (Phase 1)	Direct admission to outpatient (Phase 2)
Vitamin A	- 1 dose at admission (conditional) - 1 dose on discharge - Do not give when transferred to OTP management; it will be given in OTP	- 1 dose on the 4th week (4th visit)
Folic Acid	- 1 dose at admission if signs of anaemia	- 1 dose at admission if signs of anaemia
Amoxicillin	- Every day in Phase 1 plus 4 more days in transition	- 1 dose at admission and give treatment for 7 days at home
Malaria	- According to national protocol	- According to national protocol
Measles (from 9 months old)	- 1 vaccine at admission if no card - 1 vaccine at discharge	- 1 vaccine on the 4th week (4th visit)
Iron	- Add to F100 in Phase 2	- None; iron is already in all RUTF
Deworming	- 1 dose at the start of Phase 2	- 1 dose on the 2nd week (2nd visit)

Discharge Criteria

Children stay in the programme until they meet the discharge criteria or until they have been in the programme for a maximum of two months. The discharge criteria depend on the admission criteria.

Cured (D1)

Option 1 6 months to 18 years	W/L >= 85 percent **or** W/H >= 85 percent for two consecutive weeks **and** No oedema for 14 days (if a child is admitted with oedema)
Option 2 6 months to adulthood	Target weight gain **and** No oedema for 14 days (if a child is admitted with oedema)

All patients should be discharged to a supplementary feeding programme (TSF) for follow up where this is available.

Annex 3: Appetite Test

Why Do the Appetite Test?

Malnutrition changes the way infections and other diseases express themselves. Children affected by the classical IMNCI diseases and who are malnourished frequently show no signs of these diseases. However, the major complications lead to a loss of appetite. Most important, the signs of severe malnutrition itself are often interpreted as dehydration in a child that is not actually dehydrated. The diagnosis and treatment of dehydration are different in these patients. Giving conventional treatment for dehydration to the severely malnourished is very dangerous.

Even though the definition and identification of the severely malnourished is by anthropometric measurements, there is not a perfect correlation between anthropometric and metabolic malnutrition. It is mainly metabolic malnutrition that causes death. Often the only sign of severe metabolic malnutrition is a reduction in appetite. By far the most important criterion to decide whether a patient should be sent to inpatient or outpatient management is the Appetite Test. A poor appetite means that the child has a significant infection or a major metabolic abnormality such as liver dysfunction, electrolyte imbalance, cell membrane damage, or damaged biochemical pathways. These are the patients at immediate risk of death. Furthermore, a child with a poor appetite will not eat at home and will continue to deteriorate or die.

How to Do the Appetite Test?

1. The Appetite Test should be conducted in a separate, quiet area.
2. Explain to the carer the purpose of the appetite test and how it will be carried out.
3. The carer, where possible, should wash his/her hands.
4. The carer should sit comfortably with the child on his lap and either offers the RUTF from the packet or put a small amount on his finger and give it to the child.
5. The carer should offer the child the RUTF gently, encouraging the child all the time. If the child refuses, then the carer should move to a quiet, private area and continue to quietly encourage the child. The test usually takes a short time, but may last up to one hour. The child **must not** be forced to take the RUTF.
6. The child needs to be offered plenty of water to drink from a cup as he/she is taking the RUTF.
7. It is essential that the health worker observes the child eating the RUTF before the child can be accepted for out-patient treatment.

The following table describes the minimum amount of RUTF that should be taken.

APPETITE TEST

This is the *minimum* amount that malnourished patients should take to pass the appetite test

Plumpy'nut		*BP100*	
Body weight (Kg)	**Sachets**	**body weight (Kg)**	**Bars**
Less than 4 kg	1/8 to ¼	Less than 5 kg	¼ to ½
4 – 6.9	¼ to 1/3	5 -9.9	½ to ¾
7 – 9.9	1/3 to ½		
10 – 14.9	½ to ¾	10 – 14.9	¾ to 1
15 - 29	¾ to 1	15 -29	1 to 1 ½
Over 30 kg	>1	Over 30 kg	> 1 ½

Annex 4: Energy Values of Locally Available Foods and Meals

Meals

Below are 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

Annex 5: Energy Values of Locally Available Snacks

Below are the energy values of common Ethiopian 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 drink (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
Sweat 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

Annex 6: Energy Values of Bulk Foods

Below are the energy values of common 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	Sindye, nech, duqyet	363	10.9
Starchy roots and tubers:			
False banana, flour	Inset, karta	196	.9
Potato Irish, raw	Yabesha dinnich, yalteqeqqele	104	1.3
Sweet potato, raw	Sikkwar dinnich, yalteqeqqele	136	1.3
Legumes:			
Kidney beans, whole, dried	Adengwarrye, difin, dereq	354	19.1
Lentil, split	Missir, kick	355	23.0
Peas, flour	Ater, duqyet	352	20.1
Vegetables:			
Carrot, raw	Carrot, yalteqeqqele	42	1.7
Cabbage, raw	T'iqill gommen, yalteqeqqele	21	.9
Ethiopian kale, raw	Gommen, yalteqeqqele	46	2.8
Onion (shallot), raw	Qeyy shinkurt, yalteqeqqele	71	1.06
Tomato, raw	Tyimatyim, yalteqeqqele	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
Milk, cow, fresh	Yelam wetet, yaltefella	74	3.4
Egg, whole, raw	Inqulal, difin, t'rye	153	12.1

Food	Local name	**Energy** (kilo-calories)	**Protein** (Grams)
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, yelellew, t'rye	735	1.3
Oil, niger seed, fresh	Zeyt, nug	896	0.0

Annex 7: Commonly Used Serving/Measuring Instruments and Their Sizes

Annex 8: World Health Organization (WHO) Growth Standards

WHO 2006 Standard Population Weight-for-Length BOYS Z-Scores					WHO 2006 Standard Population Weight-for-Length GIRLS Z-Scores				
Length (cm)	Median weight (kg)	–1 SD	–2 SD	–3 SD	Length (cm)	Median weight (kg)	–1 SD	–2 SD	–3 SD
45.0	2.4	2.2	2.0	1.9	45.0	2.5	2.3	2.1	1.9
45.5	2.5	2.3	2.1	1.9	45.5	2.5	2.3	2.1	2.0
46.0	2.6	2.4	2.2	2.0	46.0	2.6	2.4	2.2	2.0
46.5	2.7	2.5	2.3	2.1	46.5	2.7	2.5	2.3	2.1
47.0	2.8	2.5	2.3	2.1	47.0	2.8	2.6	2.4	2.2
47.5	2.9	2.6	2.4	2.2	47.5	2.9	2.6	2.4	2.2
48.0	2.9	2.7	2.5	2.3	48.0	3.0	2.7	2.5	2.3
48.5	3.0	2.8	2.6	2.3	48.5	3.1	2.8	2.6	2.4
49.0	3.1	2.9	2.6	2.4	49.0	3.2	2.9	2.6	2.4
49.5	3.2	3.0	2.7	2.5	49.5	3.3	3.0	2.7	2.5
50.0	3.3	3.0	2.8	2.6	50.0	3.4	3.1	2.8	2.6
50.5	3.4	3.1	2.9	2.7	50.5	3.5	3.2	2.9	2.7
51.0	3.5	3.2	3.0	2.7	51.0	3.6	3.3	3.0	2.8
51.5	3.6	3.3	3.1	2.8	51.5	3.7	3.4	3.1	2.8
52.0	3.8	3.5	3.2	2.9	52.0	3.8	3.5	3.2	2.9
52.5	3.9	3.6	3.3	3.0	52.5	3.9	3.6	3.3	3.0
53.0	4.0	3.7	3.4	3.1	53.0	4.0	3.7	3.4	3.1
53.5	4.1	3.8	3.5	3.2	53.5	4.2	3.8	3.5	3.2
54.0	4.3	3.9	3.6	3.3	54.0	4.3	3.9	3.6	3.3
54.5	4.4	4.0	3.7	3.4	54.5	4.4	4.0	3.7	3.4
55.0	4.5	4.2	3.8	3.6	55.0	4.5	4.2	3.8	3.5
55.5	4.7	4.3	4.0	3.7	55.5	4.7	4.3	3.9	3.6
56.0	4.8	4.4	4.1	3.8	56.0	4.8	4.4	4.0	3.7
56.5	5.0	4.6	4.2	3.9	56.5	5.0	4.5	4.1	3.8
57.0	5.1	4.7	4.3	4.0	57.0	5.1	4.6	4.3	3.9
57.5	5.3	4.9	4.5	4.1	57.5	5.2	4.8	4.4	4.0
58.0	5.4	5.0	4.6	4.3	58.0	5.4	4.9	4.5	4.1
58.5	5.6	5.1	4.7	4.4	58.5	5.5	5.0	4.6	4.2
59.0	5.7	5.3	4.8	4.5	59.0	5.6	5.1	4.7	4.3
59.5	5.9	5.4	5.0	4.6	59.5	5.7	5.3	4.8	4.1
60.0	6.0	5.5	5.1	4.7	60.0	5.9	5.4	4.9	4.5
60.5	6.1	5.6	5.2	4.8	60.5	6.0	5.5	5.0	4.6
61.0	6.3	5.8	5.3	4.9	61.0	6.1	5.6	5.1	4.7
61.5	6.4	5.9	5.4	5.0	61.5	6.3	5.7	5.2	4.8
62.0	6.5	6.0	5.6	5.1	62.0	6.4	5.8	5.3	4.9
62.5	6.7	6.1	5.7	5.2	62.5	6.5	5.9	5.4	5.0
63.0	6.8	6.2	5.8	5.3	63.0	6.6	6.0	5.5	5.1
63.5	6.9	6.4	5.9	5.4	63.5	6.7	6.2	5.6	5.2
64.0	7.0	6.5	6.0	5.5	64.0	6.9	6.3	5.7	5.3
64.5	7.1	6.6	6.1	5.6	64.5	7.0	6.4	5.8	5.4
65.0	7.3	6.7	6.2	5.7	65.0	7.1	6.5	5.9	5.5
65.5	7.4	6.8	6.3	5.8	65.5	7.2	6.6	6.0	5.5
66.0	7.5	6.9	6.4	5.9	66.0	7.3	6.7	6.1	5.6
66.5	7.6	7.0	6.5	6.0	66.5	7.4	6.8	6.2	5.7
67.0	7.7	7.1	6.6	6.1	67.0	7.5	6.9	6.3	5.8
67.5	7.9	7.2	6.7	6.2	67.5	7.6	7.0	6.4	5.9
68.0	8.0	7.3	6.8	6.3	68.0	7.7	7.1	6.5	6.0
68.5	8.1	7.5	6.9	6.4	68.5	7.9	7.2	6.6	6.1

69.0	8.2	7.6	7.0	6.5		69.0	8.0	7.3	6.7	6.1
69.5	8.3	7.7	7.1	6.6		69.5	8.1	7.4	6.8	6.2
70.0	8.4	7.8	7.2	6.6		70.0	8.2	7.5	6.9	6.3
70.5	8.5	7.9	7.3	6.7		70.5	8.3	7.6	6.9	6.4
71.0	8.6	8.0	7.4	6.8		71.0	8.4	7.7	7.0	6.5
71.5	8.8	8.1	7.5	6.9		71.5	8.5	7.7	7.1	6.5
72.0	8.9	8.2	7.6	7.0		72.0	8.6	7.8	7.2	6.6
72.5	9.0	8.3	7.6	7.1		72.5	8.7	7.9	7.3	6.7
73.0	9.1	8.4	7.7	7.2		73.0	8.8	8.0	7.4	6.8
73.5	9.2	8.5	7.8	7.2		73.5	8.9	8.1	7.4	6.9
74.0	9.3	8.6	7.9	7.3		74.0	9.0	8.2	7.5	6.9
74.5	9.4	8.7	8.0	7.4		74.5	9.1	8.3	7.6	7.0
75.0	9.5	8.8	8.1	7.5		75.0	9.1	8.4	7.7	7.1
75.5	9.6	8.8	8.2	7.6		75.5	9.2	8.5	7.8	7.1
76.0	9.7	8.9	8.3	7.6		76.0	9.3	8.5	7.8	7.2
76.5	9.8	9.0	8.3	7.7		76.5	9.4	8.6	7.9	7.3
77.0	9.9	9.1	8.4	7.8		77.0	9.5	8.7	8.0	7.4
77.5	10.0	9.2	8.5	7.9		77.5	9.6	8.8	8.1	7.4
78.0	10.1	9.3	8.6	7.9		78.0	9.7	8.9	8.2	7.5
78.5	10.2	9.4	8.7	8.0		78.5	9.8	9.0	8.2	7.6
79.0	10.3	9.5	8.7	8.1		79.0	9.9	9.1	8.3	7.7
79.5	10.4	9.5	8.8	8.2		79.5	10.0	9.1	8.4	7.7
80.0	10.4	9.6	8.9	8.2		80.0	10.1	9.2	8.5	7.8
80.5	10.5	9.7	9.0	8.3		80.5	10.2	9.3	8.6	7.9
81.0	10.6	9.8	9.1	8.4		81.0	10.3	9.4	8.7	8.0
81.5	10.7	9.9	9.1	8.5		81.5	10.4	9.5	8.8	8.1
82.0	10.8	10.0	9.2	8.5		82.0	10.5	9.6	8.8	8.1
82.5	10.9	10.1	9.3	8.6		82.5	10.6	9.7	8.9	8.2
83.0	11.0	10.2	9.4	8.7		83.0	10.7	9.8	9.0	8.3
83.5	11.2	10.3	9.5	8.8		83.5	10.9	9.9	9.1	8.4
84.0	11.3	10.4	9.6	8.9		84.0	11.0	10.1	9.2	8.5
84.5	11.4	10.5	9.7	9.0		84.5	11.1	10.2	9.3	8.6
85.0	11.5	10.6	9.8	9.1		85.0	11.2	10.3	9.4	8.7
85.5	11.6	10.7	9.9	9.2		85.5	11.3	10.4	9.5	8.8
86.0	11.7	10.8	10.0	9.3		86.0	11.5	10.5	9.7	8.9
86.5	11.9	11.0	10.1	9.4		86.5	11.6	10.6	9.8	9.0
87.0	12.0	11.1	10.2	9.5		87.0	11.7	10.7	9.9	9.1
87.5	12.1	11.2	10.4	9.6		87.5	11.8	10.9	10.0	9.2
88.0	12.2	11.3	10.5	9.7		88.0	12.0	11.0	10.1	9.3
88.5	12.4	11.4	10.6	9.8		88.5	12.1	11.1	10.2	9.4
89.0	12.5	11.5	10.7	9.9		89.0	12.2	11.2	10.3	9.5
89.5	12.6	11.6	10.8	10.0		89.5	12.3	11.3	10.4	9.6
90.0	12.7	11.8	10.9	10.1		90.0	12.5	11.4	10.5	9.7
90.5	12.8	11.9	11.0	10.2		90.5	12.6	11.5	10.6	9.8
91.0	13.0	12.0	11.1	10.3		91.0	12.7	11.7	10.7	9.9
91.5	13.1	12.1	11.2	10.4		91.5	12.8	11.8	10.8	10.0
92.0	13.2	12.2	11.3	10.5		92.0	13.0	11.9	10.9	10.1
92.5	13.3	12.3	11.4	10.6		92.5	13.1	12.0	11.0	10.1
93.0	13.4	12.4	11.5	10.7		93.0	13.2	12.1	11.1	10.2
93.5	13.5	12.5	11.6	10.7		93.5	13.3	12.2	11.2	10.3
94.0	13.7	12.6	11.7	10.8		94.0	13.5	12.3	11.3	10.4
94.5	13.8	12.7	11.8	10.9		94.5	13.6	12.4	11.4	10.5
95.0	13.9	12.8	11.9	11.0		95.0	13.7	12.6	11.5	10.6
95.5	14.0	12.9	12.0	11.1		95.5	13.8	12.7	11.6	10.7
96.0	14.1	13.1	12.1	11.2		96.0	14.0	12.8	11.7	10.8

	96.5	14.3	13.2	12.2	11.3	96.5	14.1	12.9	11.8	10.9
	97.0	14.4	13.3	12.3	11.4	97.0	14.2	13.0	12.0	11.0
	97.5	14.5	13.4	12.4	11.5	97.5	14.4	13.1	12.1	11.1
	98.0	14.6	13.5	12.5	11.6	98.0	14.5	13.3	12.2	11.2
	98.5	14.8	13.6	12.6	11.7	98.5	14.6	13.4	12.3	11.3
	99.0	14.9	13.7	12.7	11.8	99.0	14.8	13.5	12.4	11.4
	99.5	15.0	13.9	12.8	11.9	99.5	14.9	13.6	12.5	11.5
	100.0	15.2	14.0	12.9	12.0	100.0	15.2	13.7	12.6	11.6
	100.5	15.3	14.1	13.0	12.1	100.5	15.2	13.9	12.7	11.7
	101.0	15.4	14.2	13.2	12.2	101.0	15.3	14.0	12.8	11.8
	101.5	15.6	14.4	13.3	12.3	101.5	15.5	14.1	13.0	11.9
	102.0	15.7	14.5	13.4	12.4	102.0	15.6	14.3	13.1	12.0
	102.5	15.9	14.6	13.5	12.5	102.5	15.8	14.4	13.2	12.1
	103.0	16.0	14.8	13.6	12.6	103.0	15.9	14.5	13.3	12.3
	103.5	16.2	14.9	13.7	12.7	103.5	16.1	14.7	13.5	12.4
	104.0	16.3	15.0	13.9	12.8	104.0	16.2	14.8	13.6	12.5
	104.5	16.5	15.2	14.0	12.9	104.5	16.4	15.0	13.7	12.6
	105.0	16.6	15.3	14.1	13.0	105.0	16.5	15.1	13.8	12.7
	105.5	16.8	15.4	14.2	13.2	105.5	16.7	15.3	14.0	12.8
	106.0	16.9	15.6	14.4	13.3	106.0	16.9	15.4	14.1	13.0
	106.5	17.1	15.7	14.5	13.4	106.5	17.1	15.6	14.3	13.1
	107.0	17.3	15.9	14.6	13.5	107.0	17.2	15.7	14.4	13.2
	107.5	17.4	16.0	14.7	13.6	107.5	17.4	15.9	14.5	13.3
	108.0	17.6	16.2	14.9	13.7	108.0	17.6	16.0	14.7	13.5
	108.5	17.8	16.3	15.0	13.8	108.5	17.8	16.2	14.8	13.6
	109.0	17.9	16.5	15.1	14.0	109.0	18.0	16.4	15.0	13.7
	109.5	18.1	16.6	15.3	14.1	109.5	18.1	16.5	15.1	13.9
	110.0	18.3	16.8	15.4	14.2	110.0	18.3	16.7	15.3	14.0

Annex 9: Algorithms and Nutrition Care Plans for Management of Malnutrition for PLHIV – Children

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

NUTRITION CARE PLAN A

1. **Assess if the child needs to be admitted to inpatient care.**

*****CHECK FOR GENERAL DANGER SIGNS*****

- All severely malnourished infants under six months should be treated as inpatients.
- All children severely malnourished with complications should be admitted for inpatient care according to the National Protocol for SAM
- Assess if the child wants to eat (i.e., **conduct an Appetite Test)**. If the child does not eat at least the amount of RUTF shown in Table 1 below**,** then admit and manage the client accordingly.
- Assess if there are physical signs (e.g., intractable vomiting, high fever > 39^{o}C, malaria, hypothermia < 35^{o}C, severe anaemia (paleness, severe palm pallor), pneumonia, active TB, any chest in-drawing, bilateral oedema grade +++, excessive skin lesions, excessive weakness/lethargy, severe dehydration, convulsions or fitting).
- Assess if there have been any major changes in the child's circumstances (e.g., mother/caregiver died, breastfeeding has stopped, change of location).

Phase 1: Give F75 only, amounts based strictly on weight (see National Protocol on Management of Severe Malnutrition).

Transition Phase and Phase 2*:* Replace F75 with F100 (70–80 ml per kg of body weight per day) and gradually introduce RUTF in small amounts until patient can take RUTF instead of F100.

2. **Check the client for treatable conditions and exclude OIs such as TB.**
   - Ensure **cotrimoxazole prophylaxis** for HIV-positive children as per the national protocol.
   - Explain to the caregiver how to give medicines at home (i.e., doses, schedule); the caregiver should give the first dose of medication in front of health worker.
   - Treat any illnesses (e.g., for candida give nystatin (1 ml four times a day for seven days) and also check mother's breast for candida and treat if indicated).
   - If HIV positive, **refer** for assessment to possibly begin ART, if not already started.
   - **If on ART, refer for assessment of clinical and immunological response.**

3. **Home management.** This should be done only if the child has appetite (can eat RUTF), and the mother/caregiver's health and condition is conducive for appropriate care. Give RUTF to provide 50-100 percent additional energy according to Table 1 below.

Table 1

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

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

NUTRITION CARE PLAN B

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

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

For more options refer to **Annex 5: Snacks.*

8. **If child is moderately malnourished and supplementary food is available, provide supplementary food according to Table 3.** Children should graduate from food supplementation when they have received at least two months supplementation and WHZ is greater than -2 for children under five, BMI-for-age for children 5-17 years is greater than -2 Z-scores, or WHM is greater than 80 percent or MUAC is greater than the cut-off for moderate malnutrition for their

age group (i.e., 6-12 months > 120 mm, 12-59 months > 130mm, 5-9 years > 145 mm, and 10-14 years > 180 mm).

Table 3

Supplementary Food Rations for HIV-positive Children		
Age Group	**RUTF**	**FBF**
6–11 months	one 92 g sachet of RUTF	50 g
12–23 months	one 92 g sachet of RUTF	100 g
24–59 months	one 92 g sachet of RUTF	100 g
5–9 years	one 92 g sachet of RUTF	200 g
10–14 years	one 92 g sachet of RUTF	200 g

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

NUTRITION CARE PLAN C

1. **Ask about the general condition and whether the child is on any treatment including ART and TB medicine.** If the child is on ART, check on adherence to the medicines and counsel on management of diet-related symptoms if indicated.
2. **Check the mother's health (and need for ART) and care of other children**
3. **Counsel on the Critical Nutrition Practices:**

   Assure mother/caregiver that the child is growing well

   If breastfeeding, counsel on optimal breastfeeding practices. If the child is on replacement feeding, emphasise proper feeding and safety, and to avoid mixed feeding.

   If a child is of complementary feeding age, promote optimum complementary feeding practice (i.e., FADUA – Frequency, Adequacy, Density, safety and hygiene, Active feeding and variety).
4. Counsel to ensure that the child's **age-specific energy/nutrient needs** are met and that an additional 10 percent of energy is being consumed based on age of the child.

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

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

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

Algorithms and Nutrition Care Plans for Management of Malnutrition for PLHIV – Adults

ASSESS					
HISTORY	**LOOK AND FEEL**		**CRITERIA**	**Classification**	**Treatment/care plan**
Refer to records (or if needed ask to determine the following) 1. Has client lost weight in the past month/past visit? 2. Has the client had: ▪ Active TB (on treatment)? ▪ Diarrhoea for more than 14 days? ▪ Other chronic OI or malignancy (e.g., oesophageal infections)? ▪ Mouth sores/oral thrush? 3. Has the client had noticeable changes on body composition/ fat distribution? ▪ Thinning of limbs and face ▪ Fat distribution on the limbs, breasts, stomach region, back/hump 4. Has the client experienced the following? ▪ Nausea/vomiting ▪ Persistent fatigue ▪ Poor appetite	1. Check for oedema on both feet (and sacrum). In adults, rule out other causes of symmetrical oedema (pre-eclampsia, severe proteinuria, kidney diseases (e.g., nephrotic syndrome, acute renal diseases, chronic renal diseases), acute filariasis, heart failure and wet beri-beri). 2. Measure weight (kg) and height (cm). 3.Compute BMI (adults) 4.Measure MUAC (pregnant and post-partum women and/or adults who cannot stand straight). 5.Examine for conditions that cause secondary malnutrition as in above and as in history. 6.Examine/observe for complications and danger signs: - Severe anaemia (paleness, pallor) - Severe dehydration - Active TB - Bilateral severe oedema		Bilateral pitting **oedema** (both legs) **Adults (non-pregnant/post-partum)** BMI < 16 kg m^2 (If BMI cannot be measured, use MUAC cut off below.) **Pregnant/postpartum women** MUAC<180 mm	**SEVERE/MODERATE malnutrition with complications** If client has any of the danger signs or severe oedema (Severe dehydration, poor appetite and bilateral oedema) **Acute malnutrition without complications** If client has BMI or MUAC less than the severe malnutrition cut off and does not have any of the danger signs	**Admit or refer for inpatient care.** **NUTRITION CARE PLAN A (RED)**
			Adults (non-pregnant/post-partum) BMI 16 - 16.99 Moderate BMI 17 - 18.49 (If BMI cannot be measured, use MUAC cut-off below.) Pregnant/postpartum women MUAC 180 - 210 mm	**MODERATE malnutrition**	**NUTRITION CARE PLAN B (YELLOW)**
			Regardless of BMI or MUAC: Confirmed unintentional weight loss of > 5% since the last visit Reported weight loss (e.g., loose clothing which used to fit)	**Significant weight loss**	
			Regardless of BMI or MUAC: • Chronic lung disease • TB • Persistent diarrhoea • Other chronic OI or malignancy	**Signs of SYMPTOMATIC DISEASE**	
			Adults (non pregnant/post-partum) BMI ≥ 18.5 (If BMI not possible, use MUAC) **Pregnant/post-partum** MUAC ≥ 210 mm in the absence of signs of symptomatic disease and significant weight loss	**NORMAL**	**NUTRITION CARE PLAN C (GREEN)**

NUTRITION CARE PLAN A

1. **INPATIENT: clinical and nutrition management of severely malnourished adults**
   - Check and ensure, if indicated, that treatment is given for **accompanying illnesses** (e.g., pneumonia, active TB, chronic diarrhoea, fever, nausea and/or vomiting).
   - Ensure **cotrimoxazole prophylaxis** is provided as per the national protocol for HIV-positive clients with CD4 counts under 350 and WHO stage 3 and 4.
   - If there are indications that the client has hypoglycaemia, severe dehydration, severe anaemia, or other infections or medical complications, treat or refer for treatment as per national/WHO guidelines.
   - **If not tested for HIV and/or TB, conduct or refer the client for counselling and testing immediately.** If the client is HIV-positive and not on ART, refer him/her to an ART care clinic.
   - **Phase 1 (days 1–2):** Provide F75 only with amounts given based strictly on weight. The amount per kilogram of body weight given is much less than for children and decreases with increasing age.
   - **Transition Phase 1 and Phase 2:** Replace F75 with F100 (70–80 ml per kg of body weight per day). Gradually introduce RUTF in small amounts until patient can take three to four sachets a day and give other foods to meet remaining nutritional needs, such as FBF or BP-100.
   - **Do an Appetite Test.** If the client will not eat (the RUTF or the FBF), possibly due to anorexia and/or vomiting, admit the client for inpatient care and feed him/her via a naso-gastric tube.
   - Refer patients to where they can collect RUTF and/or FBF.

2. **OUTPATIENT: nutrition management of severely malnourished adults**
   - **If the client has an appetite and his/her health condition allows for home-based care,** supply enough RUTF and FBF to last for two weeks (enough to provide daily energy needs), and explain how to prepare them.
   - If the client can tolerate it, the consumption of **home foods** should be encouraged.
   - **Daily ration should be three 92 g sachets of RUTF (500 kcal/92 g) and 400 g of FBF (400 kcal/100 g)**. This ration is the same for pregnant and post-partum women.
   - **Counsel on the key messages:** a) the need for periodic weight monitoring; b) how to increase the energy density of diets at home; c) how to manage key symptoms through diet modification; d) any possible drug-food interactions; e) sanitation and hygiene, especially making drinking water safe; f) symptom management (e.g., nausea, loss of appetite, diarrhoea, mouth sores, rash).

3. **Follow-up Management:**
   - Give ferrous sulphate tablets (usually after 14 days) if the client shows clinical signs of anaemia.
   - If the client is managed at home, weigh him/her **bi-weekly** to ensure adequate weight gain**.**
4. **Transition to Nutrition Care Plan B** when BMI ≥ 16 (or ≥ 17 if no supplementary food is available) AND client has appetite AND can eat home foods AND has some mobility.
5. **If the client is not gaining weight, has lost weight for more than two months, or has worsening oedema, refer him/her to a medical officer immediately.**

NUTRITION CARE PLAN B

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

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

4. **If the client is moderately malnourished, provide supplementary food according to the following specifications: one 92 g sachet of RUTF (500 kcal/sachet) and 200 g of FBF (400 kcal/100 g).** Clients should graduate from RUTF and FBF when they are no longer moderately or mildly malnourished (i.e., BMI > 18.5, or MUAC > 210 mm for pregnant/post-partum women).
5. Educate the client on how to **improve household food (increase energy intake and improve taste)** to achieve the extra food requirements for their disease stage.
6. Provide **food supplements** according to RDA and **demonstrate** their home use.

7. 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.
8. **Counsel on the key messages and Critical Nutrition Practices:** a) the need for periodic weight monitoring; b) how to increase the energy density of diets at home; c) how to manage **diet-related symptoms** (e.g., nausea and/or vomiting, poor appetite, diarrhoea, mouth sores, thrush); d) any possible drug-food interactions; and e) sanitation and hygiene, especially making drinking water safe.
9. **Review the plan** with the client in a follow-up visit after one month. If the client is responding, review with him/her every **one-to-two months depending** on the level of response.
10. Change to **Nutrition Care Plan C** when BMI >18.5 for adults OR MUAC > 210mm for pregnant/postpartum women AND there is no weight loss AND there are no clinical signs of symptomatic disease.
11. If the client is **not gaining weight for three or more months or** if s/he continues to **lose weight for two or more months**, you should refer the client to specialized investigation and care.

NUTRITION CARE PLAN C

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

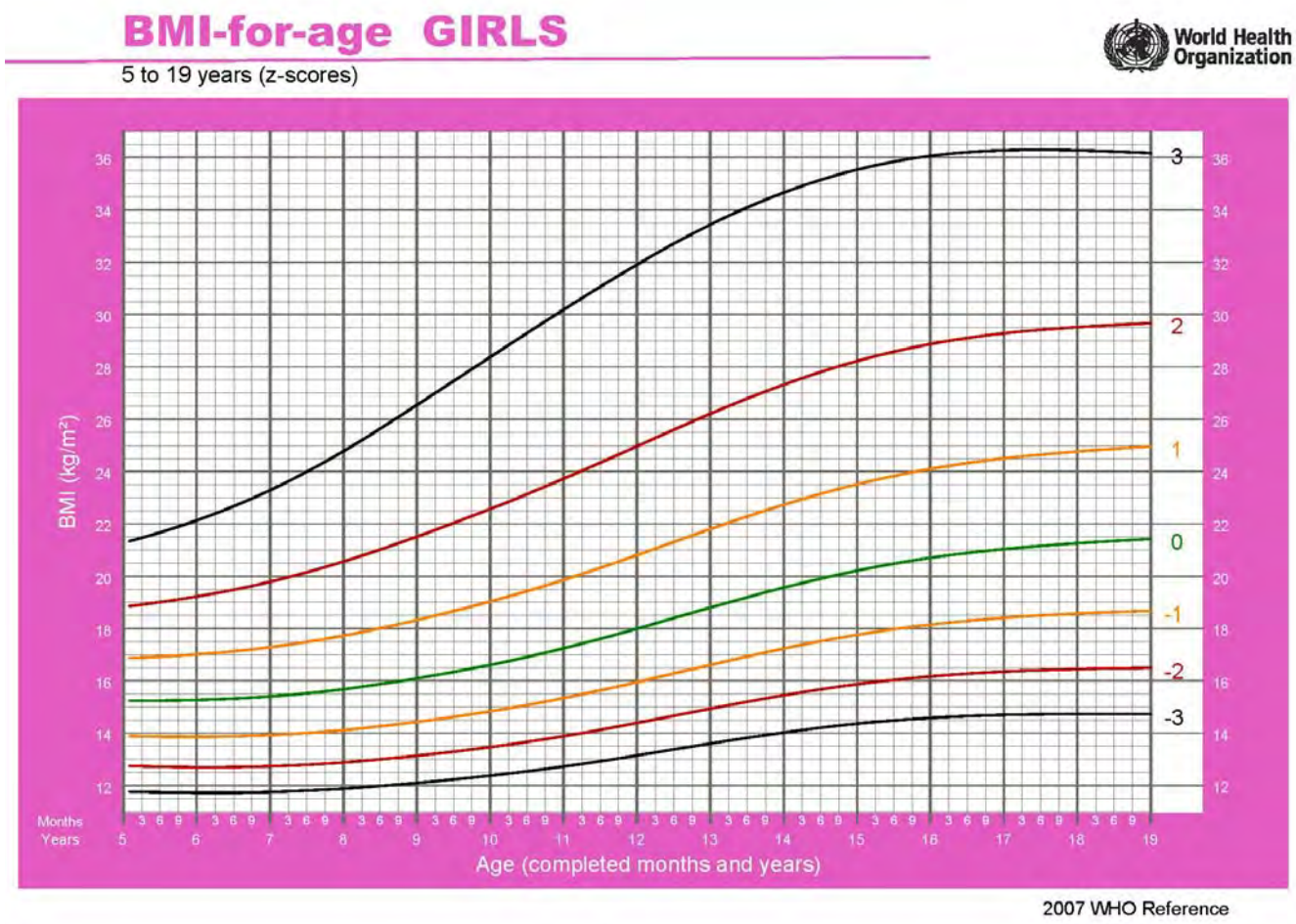
Additional Energy Needs of Asymptomatic PLHIV		
Age (years)	**Additional (10%) energy (kcal) per day due to HIV**	**Food-based approach: Give in addition to meals and other snacks**
15-17	280 kcal/day (in addition to 2,800 kcal/day)	1 large coffee cup of beso firfir
18+	225 kcal/day (in addition to 2,170-2,430 kcal/day)	1 large coffee cup of kolo
Pregnant and post-partum women	225 kcal/day (in addition to 2,455-2,670 kcal/day)	2 medium coffee cups of chechebsa

** For more information refer to **Annex 5: Snacks**.*

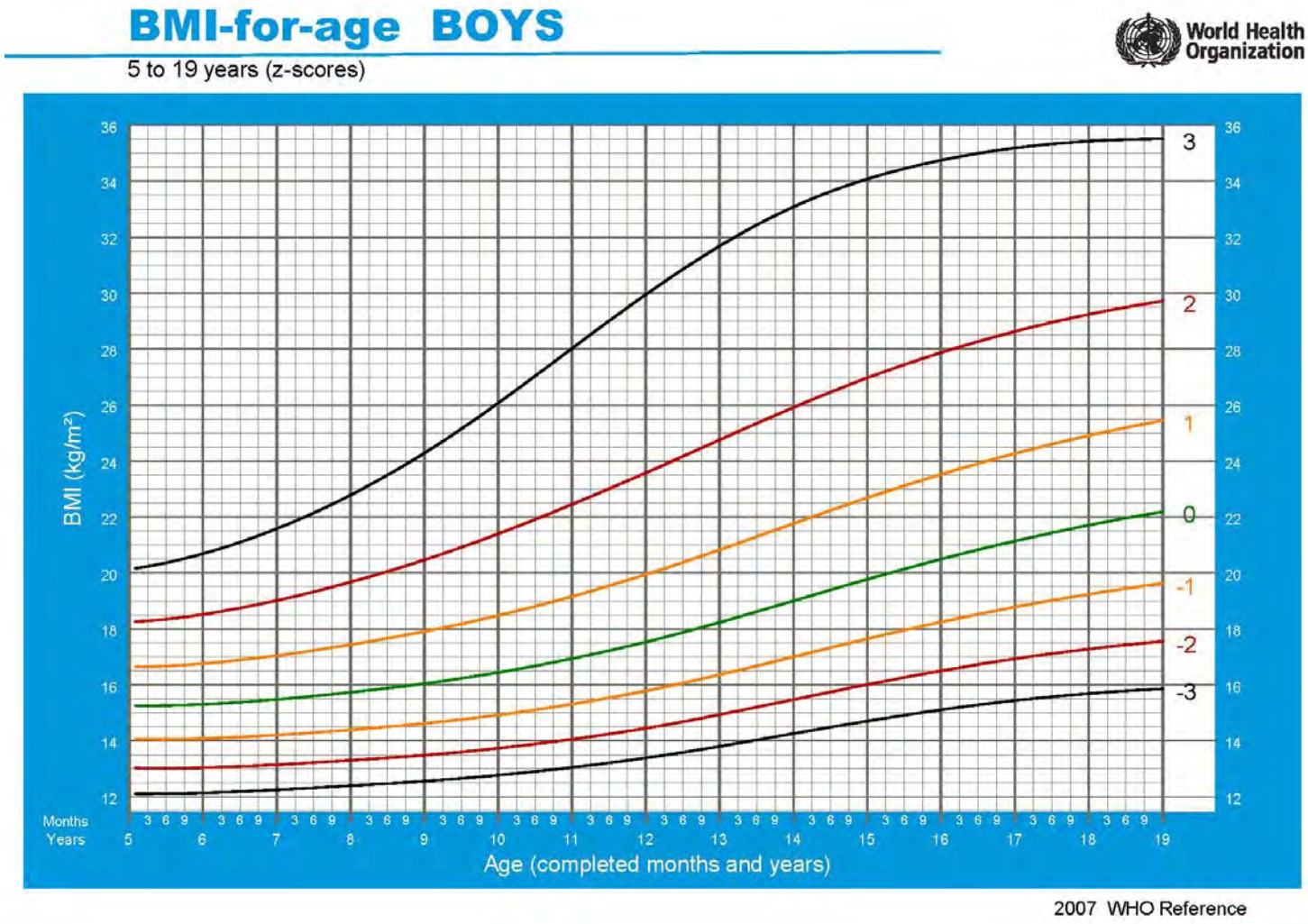
4. **Counsel client to eat a variety of foods served**. If this is not possible, give the client a daily micronutrient supplement that provides 1 RDA of a wide range of vitamins and minerals. Clients who are anaemic may need iron supplementation.
5. **Advise the client and caregiver of the need for periodic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

Annex 10: BMI-for-Age Charts

BMI-for-Age GIRLS



BMI-for-age BOYS



Annex 11: Safe Water System and Hand washing Guide

The Safe Water System (SWS) is a household-based water quality intervention that has been developed in response to the need for inexpensive, alternative means of water treatment and storage in the short to medium term for populations lacking access to safe water. Although this guide was designed to be used to promote the use of safe water and hand hygiene practices among people living with HIV and their families, the principles apply to all members of the community, and particularly those who are particularly vulnerable to diarrhoea such as PL HIV and children under five years old. The Safe Water System intervention has three components:

The Wuha Agar Bottle

What is Wuha agar?

- Wuha agar is a 1.25% sodium hypochlorite solution (diluted bleach) which is used to disinfect water and make it safe for drinking.

When should you use Wuha agar?

- Every time you refill your water container, you should treat the water with Wuha agar. Water should be treated **year round.**
- You should even treat your water if you have piped water and store it because the water can become contaminated during storage.
- Wuha agar is a household water treatment intervention and should not be used in boreholes or community wells.

How much Wuha agar should be added to a 20 litre container?

- 1 capful is sufficient for clear water
- 2 capfuls for dirty water
- For containers larger than 20 litres, the dose of Wuha agar should be increased proportionately (e.g., 2 capfuls should be used to treat clear water in a 40-litre container).

How long does the bottle last before it expires?

- The product's shelf life is 12 months if **unopened.**
- After the bottle is opened in the home, the solution should be used up within two months because the introduction of air causes it to lose its potency.

When is the water safe to drink after treating it?

- Treat the water and shake or stir the container. Then wait a half hour (30 minutes) before drinking.

Where should the bottle of Wuha agar be stored?

- Out of sunlight, out of the reach of children, in a cool, dry place.

What are other purposes of using Wuha agar besides using it for drinking water?

- Treated water should also be used for washing fruits and vegetables, cleaning kitchen utensils, and can be used for hand washing.

Is Wuha agar a prevention or a treatment for diarrhoea?

- Wuha agar can prevent diarrhoea, whereas Oral Rehydration Solution (ORS) is a treatment for dehydration caused by diarrhoea.

What does water treated with Wuha agar taste like?

- Wuha agar has a chlorine or metallic taste to it. It is important to tell your clients that a slight odour of chlorine means that their water is safe to drink.

Is Wuha agar safe?

- If Wuha agar is accidentally ingested in large quantities by children, there are only minor, transient effects on health.

The WHO recommends chlorination of water for populations facing a risk of disease and death from contaminated water. There may be a very small risk of cancer from drinking visibly dirty water treated with chlorine over many decades; however, the WHO is clear that water treatment with chlorine is the priority for people facing a high current risk of waterborne disease. The benefits of Wuha agar therefore far outweigh any very small risk of contracting cancer. Chlorinated water is the norm in most developed countries. Chlorine is used widely in city-piped water systems.

The Recommended Container
Covered buckets with taps and covered clay pots

Components of Proper Hand Washing

Benefits of integrating proper hand washing into daily hygiene routine:
1) Hand washing with soap is the number-one way to prevent the spread of infection from person to person.
2) Hand washing with soap is the cornerstone of infection-control practice.

Key elements to remember when teaching your clients about hand washing:
1) Use soap every time you wash your hands.
2) How you wash your hands is just as important as when you wash them. Just rinsing them is not enough!
3) Unwashed (or poorly washed) hands can transfer harmful microorganisms to other people.
4) Discourage multiple uses of washbasins from eldest generation to youngest generation. Instead, change the water after each use and be sure to use treated water or use the pouring method.
5. Encourage clients to share the hand-washing message with their family, neighbours, and friends.

When should you tell your clients to wash their hands?
1) After going to the latrine.
2) After cleaning up a child or after a child defecates.
3) Before preparing or eating food.
4) Before and after tending to someone who is sick.
5) After handling uncooked foods, particularly raw meat, poultry, or fish.
6) After blowing your nose, coughing, or sneezing.
7) After handling an animal or animal waste.

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