The Federal Democratic Republic of Ethiopia
Ministry of Health

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

TRAINEES MANUAL

A Three day Training Course for Clinical Care Providers

September 2008

List of Handouts

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
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
USAID	U.S. Agency for International Development
UNICEF	United Nations Children's Fund
WHO	World Health Organization
VIPP	Visualization in Program Planning

Foreword

The HIV care and support program emphasizes nutrition as an important component to contribute effectiveness and improved quality of services. In order to complement and upgrade existing nutrition services provided by health services, this clinical nutrition guide has been prepared.

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 nutritional problems.

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

I would also like to take this opportunity to express our sincere thanks to USAID and PEPFAR for providing the required financial and technical assistance through FHI 360/FANTA.

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

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

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Introduction

This training manual should be used 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 for trainers to train health care providers to counsel HIV-positive clients on critical nutrition practices and services for PLHIV. The training is based on the principles of Integrated Management of 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 in-service training, but trainers can integrate it in pre-service courses as deemed appropriate.

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: 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	1:00 hr	1:30 – 2:30
Session 3	Messages for Communicating the Critical Nutrition Practices	45:00 min	2:30 – 3:15
Session 4	Requirements for Quality Nutrition Care and Support Services for PLHIV/ Self-Assessment	30:00 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:20min	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	1:00 hr	9:00 – 10:00
Session 4	Anthropometric Measurement and Classification of Nutritional Status	30:00 min	10:00 – 10:30
Tea Break			10:30- 10:50
Session 4	Anthropometric Measurement and Classification of Nutritional Status	1:00 hr	10:50 – 11:50
Session 4	Nutrition Care Plan – A for children	1:00 hr	11:50 – 12:50
Lunch			12:50- 1:50
Session 4	Nutrition Care Plan – A for Adults	40:00 min	1:50 – 2:30
Session 4	Nutrition Care Plans B Adults/children	1:00 hr	2:30- 9:30
Tea Break			9:30-9:50
Session 4	Nutrition Care Plans C Adults/children	1:00 hr	9:50 – 4:50
Session 4	Nutritional Care for PLHIV on ART	30:00 min	4:50 – 5:20
	Daily Evaluation and Introduction to field practice	10:00 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	Feed back from field practice	30:00 min	10:30 – 11:00
Recap day 2			11:00 – 11:10
Session 5	Logistics	1:00 hr	11:10 – 12:10
Lunch			12:30-1:30
Session 6	Monitoring and Evaluation	1:00 hr	1:30 – 2:30
Session 7	Post-test, evaluation and closing of the training	1:00 hr	2:30 – 3:30
Tea break			3:30-4:00

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 nutrient/s is/are most needed by PLHIV?
   a) Energy b) Proteins c) Vitamins and minerals d) All
7. Nutritional 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) Nutritional support has the greatest impact in the early stage of HIV.
   b) Nutritional support has the greatest impact in the late stage of HIV.
   c) Nutritional support has an impact regardless of the stage of HIV.
9. Nutrition has a role in managing food and dug interactions and side effects.
   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 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. The effect of malnutrition and HIV on immune system is manifested by decreasing CD4 counts.

    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

_____

_____

_____

22. Please list three effects of good nutritional 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?

_____

Demonstration 1: Non-verbal Communication

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).

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.*

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.*

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.

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?*

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…*

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.**

Avoid using words that sound judgemental.

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
- ❑ **Discuss** 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 do-able action
- ❑ Makes an **Appointment** for the follow-up visit.

Name one or more things the counsellor did well.

_____

_____

_____

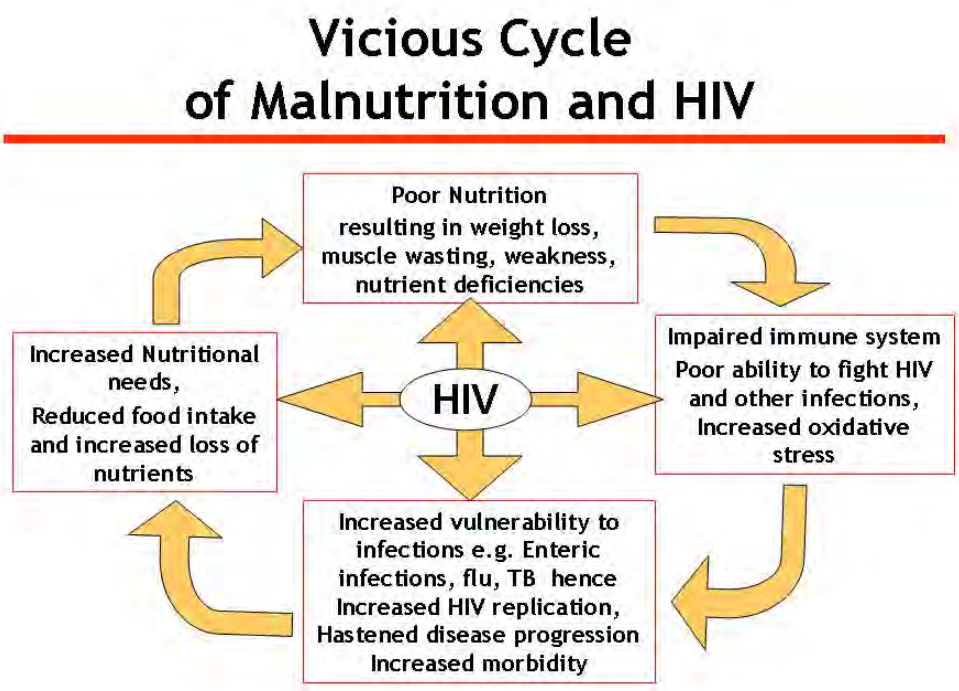
Name one thing you would recommend the counsellor to try to improve next time:

_____

_____

_____

Hand out 4. The link between Nutrition and HIV/AIDS



- The effect of malnutrition and HIV on immune system
    - Decreases CD 4 count
    - Delays/weakens reaction to infections

1. Effect of HIV on Nutrition
    - Decreased amount of food consumed example: due to mouth and throat soars, 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, OI
    - Change in metabolism : Increased energy metabolism asymptomatic adults10-15% of additional energy, 20 – 30 % additional energy for symptomatic adults, HIV+ children symptomatic but not losing weight 20-30% additional energy, HIV+ children symptomatic and losing weight 50 – 100% of additional energy, No addition protein and micronutrients needed above RDA
2. Effect of Good nutrition on HIV/AIDS:
    - Decreases weight loss
    - May delay disease progression and death
    - Reduces incidences of OI
    - Improves survival and HIV related outcomes
3. Effect of Good nutrition on HIV/AIDS:
    - Decreases weight loss

- May delay disease progression and death
- Reduces incidences of OI
- Improves survival and HIV related outcomes
- Contributes to reduction of mother to child transmission of HIV during pregnancy

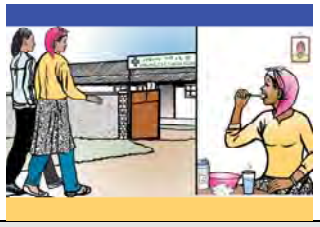
Handout 5 : Critical Nutrition Practices for PLHIV

Key message	Explanation
1. See a health care provider for 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. ➔ An intentional 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. ➔ This helps you get enough energy and other nutrients (proteins and micronutrients) your body needs. ➔ Fruits and vegetables help 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. ➔ 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.	➔ Practicing safer sex avoids infection and transmission of other Sexually Transmitted Infections. ➔ Alcohol interferes with digestion,

Key message	Explanation
❖ Avoid smoking cigarettes and taking drugs without prescription. ❖ Limit your intake of junk food such as chips, sodas, and sugary foods such as cakes and candies. ❖ Seek help at the nearest health facility to manage depression and stress. ❖ Get enough rest. ❖ If possible, exercise regularly by doing household chores, grading, walking or running	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 nutritional values and can even harm our 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 e 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 nutritional supplements you are taking. ➔ Manage symptoms with dietary practices at home where possible.	➔ 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 supplements. ➔ Be aware of the aggressive advertising of some supplements which have false claims. ➔ Nutritional supplements should not replace food and do not treat HIV and AIDS. ➔ Some traditional herbs may affect the way other drugs act in the body and make the drugs ineffective or produce side-effects. ➔ Dietary management can help manage certain symptoms, reduce their severity, and enable continued food consumption.

Key message	Explanation
REFER TO HANDOUT 6 ON NUTRITIONAL MANAGEMENT OF SYMPTOMS.	
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 counselor 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 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 you drug-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.

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 a healthy lifestyle by avoiding unprotected sex, alcohol, tobacco, sodas, and other coloured and sweetened drinks and do physical activity (exercise)	
4. Drink plenty of clean and safe (boiled or treated) water.	
5. Maintain high levels of hygiene and sanitation.	
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 AIDS in adults

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, 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 & continue to eat after illness to recover weight and nutrient loss. • Eat soft fruits & vegetables (bananas, squash, cooked and mashed green bananas, mashed sweet potato, 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 & 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 3 days.
Fever	• Eat soups rich in foods that give energy and nutrients, (maize, potatoes, carrots) • Drink plenty of liquids. • Drink teas from lemon, guava, 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 2 aspirin or Panadol, if available, with meals 3 times/day. • Go to the health centre in case of: ➢ Fever lasting several days & is not relieved with aspirin ➢ Loss of consciousness ➢ Severe body pain ➢ Yellow eyes ➢ Severe diarrhoea ➢ Convulsion seizure

Illness	Diet	Care and nutrition practices
Nausea & vomiting	• Eat small & frequent meals. • Eat foods - soups, unsweetened porridge, fruits such as bananas. • Eat lightly salty and dry foods (crackers) to calm the stomach. • Drink herbal teas & lemon juice in hot water. • Avoid spicy and fatty foods. • Avoid caffeine (coffee/tea) and alcohol. • Drink liquids such as clean boiled water.	• Avoid an empty stomach; nausea is worse if nothing is in the stomach. • Avoid lying down immediately after eating; wait at least 20 minutes to avoid vomiting. • Rest between meals.
Thrush	• 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 & 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 & 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, groundnuts), nuts, oil seeds & fortified cereals. • Take iron supplements.	• If available, take 1 iron tablet a day with food. Take with Vit. 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 & frequency of consumption. • Improve quality & quantity of foods by providing a variety of foods. • Increase energy foods in cereals & 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 cleansing practices (enemas & 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, & lemon). • Chew food well & move it around in mouth to stimulate receptors.	

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

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 member who is providing nutritional 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 boards that measure 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/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 compilation system that includes nutrition data.	
11.	Every site providing HIV services has copies of BMI, Weight/Height and BMI for age charts	
Nutritional 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 pregnant or lactating or weight or height cannot be measured accurately.	
13.	Body mass index BMI (for adults), weight-for-height (for children < 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 records 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.	
15.	Every client with moderate or severe malnutrition is referred for HIV (counselling and) testing if not tested before.	

Nutrition care plan		
16.	Every PLHIV and OVC is managed using a nutrition care plan which is based on his/her nutritional status and health condition.	
17.	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.	
18.	Every PLHIV, OVC, and caregiver who qualifies for 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.	
19.	Every PLHIV, OVC, and caregiver who is eligible for 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.	
20.	Eligibility (entry and exit) criteria for nutrition care are plan posted where service providers and clients can see them clearly.	
21.	Every severely malnourished PLHIV or OVC is given an “appetite test” before being counselled on home management of severe malnutrition.	
22.	Every PLHIV or OVC who is eligible for nutrition care plan is prescribed FBP (or 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.	
23.	Every PLHIV or OVC or caregiver who is eligible for nutrition care plan is given a demonstration on how to prepare and use the prescribed food(s).	
24.	Every PLHIV or OVC or caregiver who receives 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.	
25.	FBP is not distributed as an infant food for children <6 months old, except for the management of severe acute malnutrition and health care providers reinforce the message that infants should be exclusively breastfed for six months.	
Nutrition Commodities and Infrastructure		
26.	Every site providing clinical nutrition care has nutrition supplements according to the treatment protocol and care plan-RUTF, FBF, Micronutrient supplement etc…	
27.	Every site providing clinical nutrition care has B CC counselling tools for counselling critical nutrition behaviour.	
28.	Every site has adequate infrastructure for storing nutrition supplements and commodities	

Stock management and record keeping		
29.	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.	
30.	The site store in-charge correctly maintains stock records of FBP.	
31.	The person providing nutritional care services fills in the nutrition/FBP register for each client counselled.	
32.	The site data clerk person compiles nutrition data on form RHB to FHAPCO/MOH by the 5th of every month.	
33.	The person in charge of site pharmacy stores health commodities to facilitate first to expire first out procedures and stock management	
34.	The person in charge of site pharmacy orders food supplies three months before the stock out	

Hand out 8: Algorithm and Nutrition Care Plans for the Management of 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/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.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/In-patient Care ***CHECK FOR GENERAL DANGER SIGNS***

- All severely malnourished infants aged <6months should be treated in-patient
- All children severely malnourished with complications should be admitted for in-patient care according to the National Protocol for SAM
- Assess if the child wants to eat – **Conduct appetite test**. If the child does not eat at least the amount shown in the table (the RUTF) See Annex 3 then admit and manage accordingly
- Assess if there are signs such as intractable vomiting, high fever >39°C/malaria, hypothermia <35°C, severe anaemia (paleness, severe palm pallor), pneumonia or active TB? any chest in-drawing, bilateral edema +++, excessive skin lesion, very weak/lethargy, sever dehydration, convulsion/fitting
- Assess if there have been any major changes in the child's circumstances (mother/carer died, stop breastfeeding, 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 mls/kg body weight/day). Gradually introduce RUTF in small amounts until patient can take RUTF instead of F100.

2. Check for treatable conditions and exclude opportunistic infections such as TB.

- Ensure **Cotrimoxazole prophylaxis** for HIV+ children as per national protocol
- Explain to carer on how to give medicines at home (especially the doses and schedule). The carer gives the first dose of medications in front of health worker.
- Treat any illnesses (like Candida—nystatin [1ml x 4 for 7d}→also check mother's breast for Candida and treat if indicated]; malaria)
- If HIV+, **refer** for assessment of possible ART start (if not 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 caregiver/mother's health and condition is conducive for appropriate care. Give RUTF to provide 50-100% additional energy according to the Table below.

Class of weight (kg)	RUTF Paste		OR Plumpy'Nut	
	Grams/day	Grams/week	Sachet/day	Sachet/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 home management, ensure mother/carer understands care plan and ask if she/he has any questions. You may need to demonstrate the use of the RUTF (other feeds) to the mother/caregiver**.**

5. If managed at home, then review in **1 week** to ensure weight gain of **at least 3-5 gm/kg/d**. Check **mother's health (+ need for ART)** and provide support/counselling to be able to care for other children

6. On discharge from inpatient care, ensure **Vitamin A supplements** and **de-worming drugs** every 6 months, (if >12 months and not done in the last 4 months) [VA is delayed for children with oedema until it subsides]. Transfusion should be considered in severe anaemia during phase 1 and folic acid tab 5 mg for clinical anaemia.

7. Transition to Nutrition Care Plan B when **weight-for-height >80% (or MUAC > 110 mm if MUAC was used)** AND **no oedema for two consecutive weighing** (children can usually tolerate this energy intake for **6-10 weeks**). Review and change to plan A if child becomes severely malnourished again.

8. If **not gaining weight, or worsening oedema, or losing weight** consider for further investigation and treatment according to the national protocol.

NUTRITION CARE PLAN B

1. **Check for treatable conditions. Refer child for treatment where indicated.**
2. **Ensure Cotrimoxazole prophylaxis is started for HIV+ children as per national protocol.**
3. **If HIV+ refer for ART assessment.**
4. **If on ART, refer for assessment of clinical and immunological response [Failure to take ART correctly/non-adherence; related side-effects (e.g. vomiting, abdominal pain, diarrhoea, poor appetite, taste change); presence of an opportunistic infection e.g. TB, diarrhoea; development of the immune reconstitution syndrome; late ART related side effects e.g. lactic acidosis (signs like abdominal pain, vomiting or fast breathing) or lipodystrophy; inadequate food intake due to food access problems; if on ART >6mo then possible early sign of treatment failure, . Refer if indicated.**
5. **Check the mothers health (+need for ART) and care of child and other children**
6. **Nutrition counselling. Counsel on the Critical Nutrition Practices.**
   - What does the child eat and drink? Who gives the child their food and how does the child eat?, Is food available at home?
7. **Meet age-specific needs and additional 20-30% food (energy) based on actual weight.** If possible, the energy/nutrient needs should be met through a food-based approach. Nutritional supplement may be provided by the service/programmes where available**.**

Table 2. Additional energy needs of symptomatic HIV+ children		
Age group	**20-30% Additional energy (kcal) per day**	**Food-based approach** Give as addition to meals and other snacks
6 months – 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 months – 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 months - 59 months	**325 kcal/day (in addition to 1,500 kcal/day)**	**1 medium cup of besso drink and 1 average size banana**
5 years – 9 years	**450 kcal/day (in addition to 1,800 kcal/day)**	**1 medium coffee cup of besso drink and one average size banana**
10–14 years	**575 (in addition to 2360 kcal daily need)**	**2 large coffee cups of enjera fetfet with meat sauce**

** For more options refer to Annex 5 for Snacks*

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

Table 3. Supplementary food rations for HIV+ children		
Age group	**RUTF**	**FBF**
6 months – 11 months	**one 92 g. sachet of RUTF**	**0 g.**
12 months – 23 months	**one 92 g. sachet of RUTF**	**50 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.**

9. **Ensure mother/caregiver understand nutrition care plan and ask if she/he has any questions. Counsel on management of 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 recommended Daily Allowance of a wide range of vitamins and minerals. Anaemic children may need supplementation. Children with diarrhoea should be given **Zinc for 14 days**.
11. **Vitamin A supplements every 6 months according to IMNCI schedule, Deworm every 6 months (if more than 1 year)**
12. **Review 1st visit in 2 wks.** If responding, then every **1-2 months depending** on response. Change to **Nutrition Care Plan C** when weight-for-height > -2 Z-scores or W/H > 80% for children under 5, BMI-for-age > -2 for children over age 5-17, or MUAC is greater than the cut-off for moderate malnutrition (see No. 9 above) AND the child has been in Plan B for at least 2 months AND there has been no weight loss in the past month AND there are no signs of symptomatic disease.

NUTRITION CARE PLAN C

1. Ask about general condition and if child is on any treatment including ART and TB medicine.

- If child on ART, check that adherence counsel on management of diet related symptoms if indicated.

2. Check the mothers health (+need for ART) and care of other children

3. Nutrition counselling. Counsel on the Critical Nutrition Practices.

- Encourage mother/caregiver that the child is growing well,
- If breastfeeding, counsel on optimal breastfeeding practices. If on replacement feeding emphasis on proper feeding, safety and to avoid mixed feeding.
- If a child is in complementary feeding age, promote optimum complementary feeding practise. i.e. FADUA – Frequency, Adequacy , Density, safety and hygiene, active feeding and variety.

4. Counsel to ensure child meet age-specific energy/nutrient needs and additional 10% energy based on age of the child.

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

*** For more information, refer to Annex 5-Snacks.**

5. Ensure adequate micronutrient intake

- Counsel to ensure diet is varied and contains of animal source foods, fruits and vegetables. If this is not possible, give a daily micronutrient supplement that provides 1 Recommended Daily Allowance of a wide range of vitamins and minerals. Anaemic children may need supplementation. Children with diarrhoea should be given **Zinc for 14 days**.

6. Vitamin A supplements every 6 months according to IMNCI schedule, Deworm every 6 months (if more than 1 year)

7. Eensure Cotrimoxazole prophylaxis is provided as per national protocol.

8. Ensure mother/caregiver understand nutrition care plan and ask if she/he has any questions

9. Advise mother/carer of need for periodic follow-up.

10. Review in 2-3 months (Tell caregiver to return earlier if problems arise)

Algorithm and Nutrition Care Plans for the Management of Malnutrition in PLHIV – Adult

ASSESS			CRITERIA	Classification	Treatment/care plan
HISTORY	**LOOK AND FEEL**				
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 soar/oral trash 3.Has the client had noticeable changes on body composition/ fat distribution • Tinning 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 & 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, treatment is given for accompanying illness (e.g. pneumonia or active TB, other ailments like chronic diarrhoea, fever, nausea/vomiting).
- Ensure **Cotrimoxazole prophylaxis** is provided as per the national protocol for HIV-positive clients for CD4 < 350 and WHO stage 3 & 4.
- If indications of 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, refer or conduct counselling and tests immediately. If client is not on ART refer to ART care clinic.
- Do an appetite test. If the client will not eat (e.g. the RUTF or the FBF) possibly due to anorexia/vomiting, admit and feed via nasogastric tube.
- **Phase 1 (days 1–2):** Give F75 only, amounts based strictly on weight. The amount per kg given is much less than for children and decreases with increasing age (See National Protocol for Management of Severe Malnutrition).
- **Transition phase 1 *and Phase 2:*** Replace F75 with F100 (70–80 mls/kg body weight/day). Gradually introduce RUTF in small amounts until patient can take 3 to 4 sachets a day and give other foods to meet remaining nutritional needs, such as fortified blended foods (FBF) or BP-100.
- Refer patients to where they can collect RUTF/FBF.

2. OUTPATIENT nutritional management of severely malnourished adults

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

3. FOLLOW-UP management

- Give ferrous sulphate tablets (usually after 14 days) if indicated by clinical signs of anaemia.
- If client is managed at home, weigh **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 client is not gaining weight, has lost weight for > 2 months, or has worsening oedema, refer to a medical officer immediately.

NUTRITION CARE PLAN B

1. **Clinical management of *moderately malnourished* adults *OUTPATIENT***

   - **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 for CD4 < 350 and WHO stage 3 & 4

   - **If client is not on ART, refer for assessment for ART.**
   - If **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, 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 > 6mo [do CD4 check]), and f) lipoatrophy, **Refer if indicated.**
   - Assess inadequate food intake a) energy density of the food, b) quantity of food intake, and c) food access problems. **Support appropriately.**

2. **Nutritional management of adults**

   - Counsel client to increase energy in foods to **consume 20–30% more energy** from home foods based on current weight**, as in table 2.**

Table 2. Additional energy needs of symptomatic PLHIV		
Age (years)	**Additional (20-30%) energy (kcal) per day due to HIV**	**Food-based approach** Give as addition to meals and other snacks
15–17	**700 (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**

*** For more options Refer to Annex 5 - Snacks**

3. **If 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 the food when they are no longer moderately/mildly malnourished (BMI = > 18.5 or for pregnant/postpartum women, MUAC > 210 mm).
4. Educate client on how to **improve household food (increase energy and improve taste)** and achieve the extra food requirements for the disease stage
5. Provide **food supplements** in daily amounts and **demonstrate** on home use of the supplements
6. **G**ive 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.
7. **Counsel on key messages and Critical Nutrition Practices:** a) need for periodic weight monitoring, b) how to increase 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) sanitation and hygiene, especially making drinking water safe,)
8. **Review the plan** with the client in one month**.** If client is responding, review every **1-2 months depending** on response.
9. **Change** to **Nutrition Care Plan C** when BMI = >18.5 for adults and MUAC = > 210mm for pregnant/postpartum women AND there is no weight loss AND no clinical signs of symptomatic disease.
10. If client is **not gaining weight for 3 or more months** or if he/she continues to **lose weight for 2 or more months**, you should refer client to specialized investigation & care.

NUTRITION CARE PLAN C

1. **Ask client whether (s)he is on any treatment including ART and TB medicine. If client is on ART, determine whether (s)he is adhering to treatment and** managing diet-related symptoms well.

2. **If the client is HIV positive but not on ART, provide Cotrimoxazole prophylaxis for CD4 count < 350 and WHO stage 3 & 4.**

3. **Counsel the client to eat enough food to meet increased energy/nutrient needs plus 10% energy, as 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 firfer**
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 cup 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 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** (especially, nausea/vomiting, poor appetite, diarrhoea, mouth sores/thrush)., c) any possible drug-food interactions, d) sanitation and hygiene, especially making drinking water safe, e) having physical exercise to strengthen muscles and improve appetite.
7. **Review the client's progress in 2–3 months (or earlier if problems arise).**

Handout 9. Daily Evaluation Form (Day 1)

Fill out this form as each topic is completed.

1 = Good 2 = Average 3 = Poor

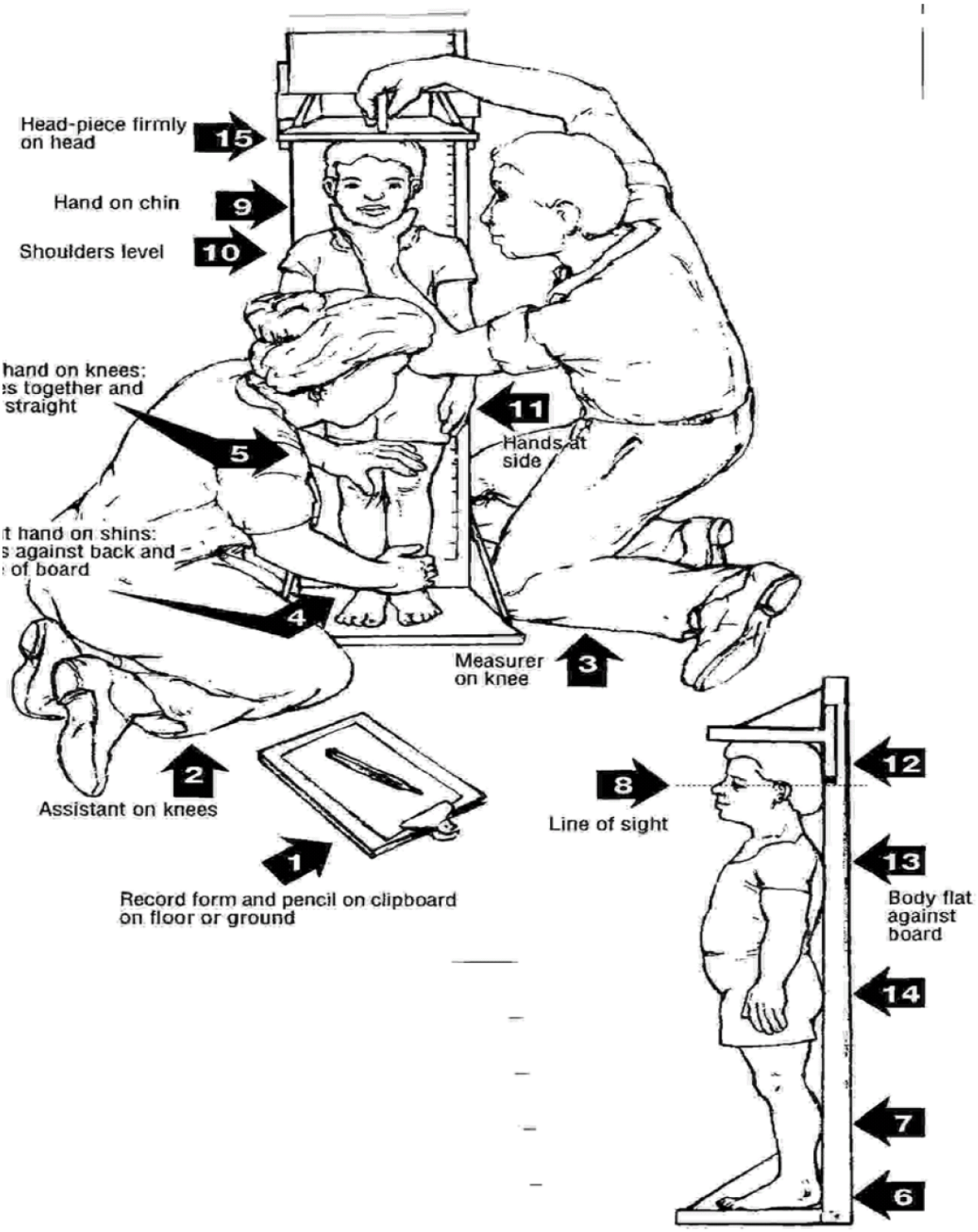
Topic	Time allocated	Relevance to your work	Support from facilitators	Resources	Contribution to skills improvement	Suggestions
Session 1						
1. Introductions, Expectations, Objectives						
2. Pre-test						
Session 2						
1. Listening and Learning Skills						
Session 3						
1. Clinical Nutrition practices & messages						
Session 4						
1. Requirements for Quality Nutrition Services for PLHIV						

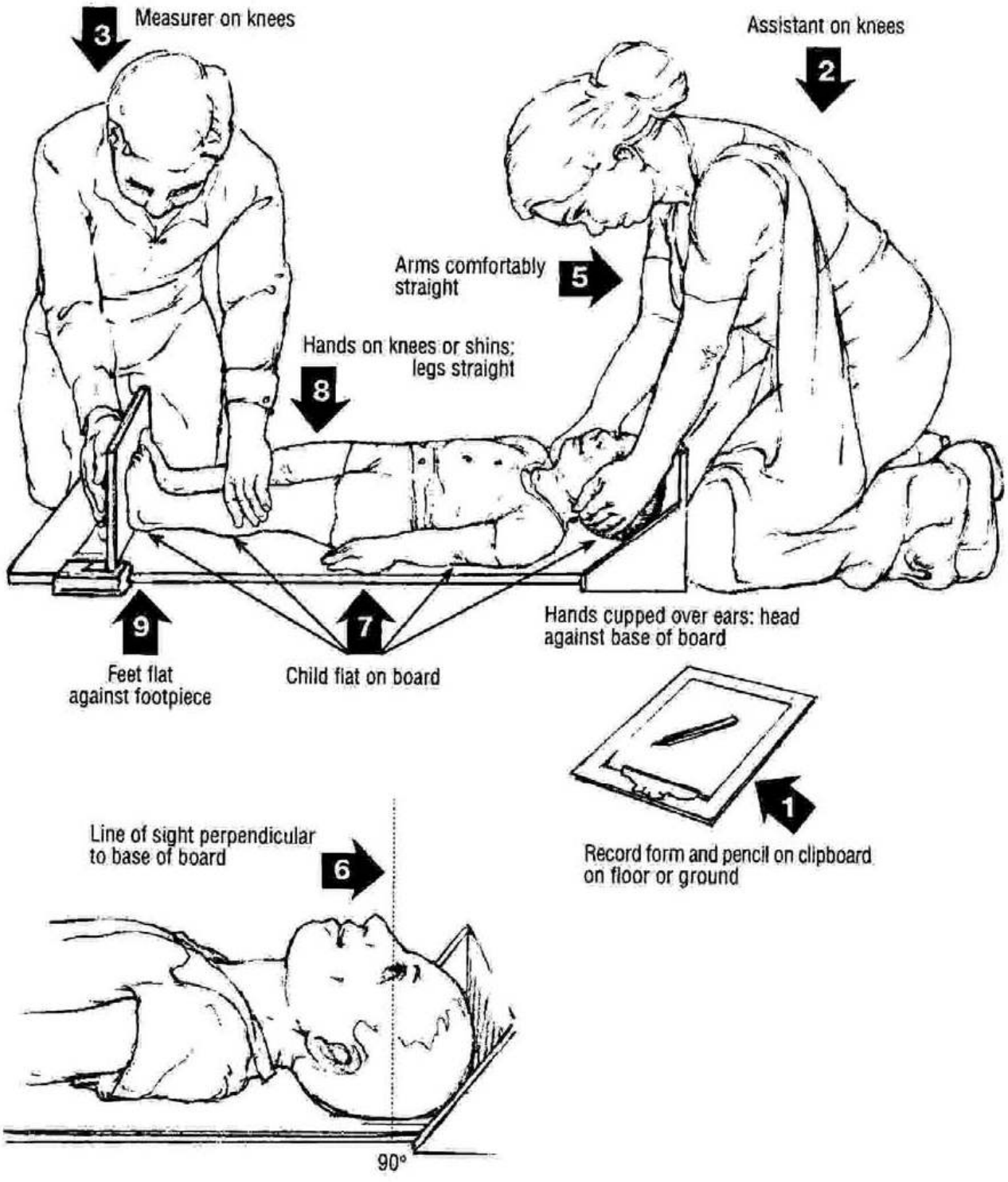
Handout 10. Measuring Weight and Height

Good nutrition improves the quality of life and health of PLHIV. This is why it is important to monitor nutritional 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

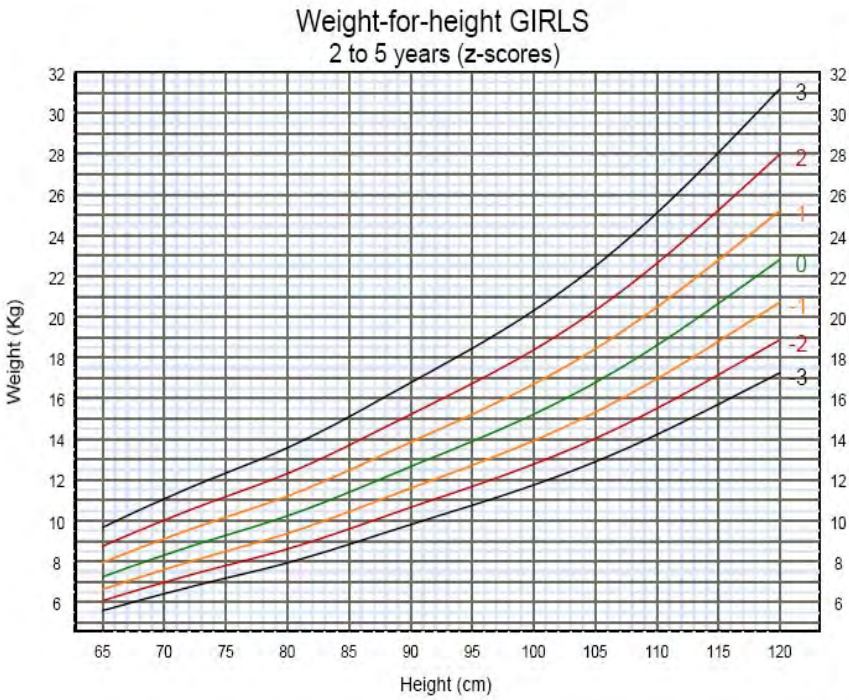

3
Measurer on knees
Assistant on knees
2
Arms comfortably straight
5
Hands on knees or shins; legs straight
8
9
7
Feet flat against footpiece
Child flat on board
Hands cupped over ears: head against base of board
1
Record form and pencil on clipboard on floor or ground
Line of sight perpendicular to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

Handout 11. Weight-for-Height Charts

This **Weight-for-length** chart shows body weight relative to length in comparison to the median (0 line).

- A child whose weight-for-length is above the line 3 is **obese**.
- Above 2 is **overweight**.
- Above 1 shows possible **risk of overweight**.
- Below the line –2 is **wasted.**
- Below –3 is **severely wasted. Refer for urgent specialized care.**

6 months to 2 years



This **Weight-for-height** chart shows body weight relative to height in comparison to the median (0 line).

- A child whose weight-for-height is above the line 3 is **obese**.
- Above 2 is **overweight**.
- Above 1 shows possible **risk of overweight**.
- Below the line –2 is **wasted.**
- Below –3 is **severely wasted. Refer for urgent specialized care.**

2 to 5 years


Weight-for-length BOYS
Birth to 2 years (z-scores)
Weight (kg)
Length (cm)
3
2
1
0
-1
-2
-3
This Weight-for-length chart shows body weight relative to length in comparison to the median (0 line).
• A child whose weight-for-length is above the line 3 is obese.
• Above 2 is overweight.
• Above 1 shows possible risk of overweight.
• Below the line –2 is wasted.
• Below –3 is severely wasted. Refer for urgent specialized care.
6 months to 2 years

35


Weight-for-height BOYS
2 to 5 years (z-scores)
Weight (Kg)
Height (cm)
3
2
1
0
-1
-2
-3
This Weight-for-height chart shows body weight relative to height in comparison to the median (0 line).
• A child whose weight-for-height is above the line 3 is obese.
• Above 2 is overweight.
• Above 1 shows possible risk of overweight.
• Below the line –2 is wasted.
• Below –3 is severely wasted. Refer for urgent specialized care.
2 to 5 years

39

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 shows that below the established cut–offs by WHO, nutritional 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 table in Handout 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 > 5% of body weight since the last visit
- BMI < 18.5
- BMI 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 mass index (BMI) = $\frac{\text{Weight (kg)}}{\text{Height (m)}^2}$

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
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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
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170	12	13	14	15	15	16	17	17	18	19	19	20	21	21	22	23	24	24	25	26	26	27	28	28	29	30	30	31	32	33	33	34	35	35	36	37	37	38	39	39	40	41	42
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156	15	16	16	17	18	19	20	21	21	22	23	24	25	25	26	27	28	29	30	30	31	32	33	34	35	35	36	37	38	39	39	40	41	42	43	44	44	45	46	47	48	48	49
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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

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.

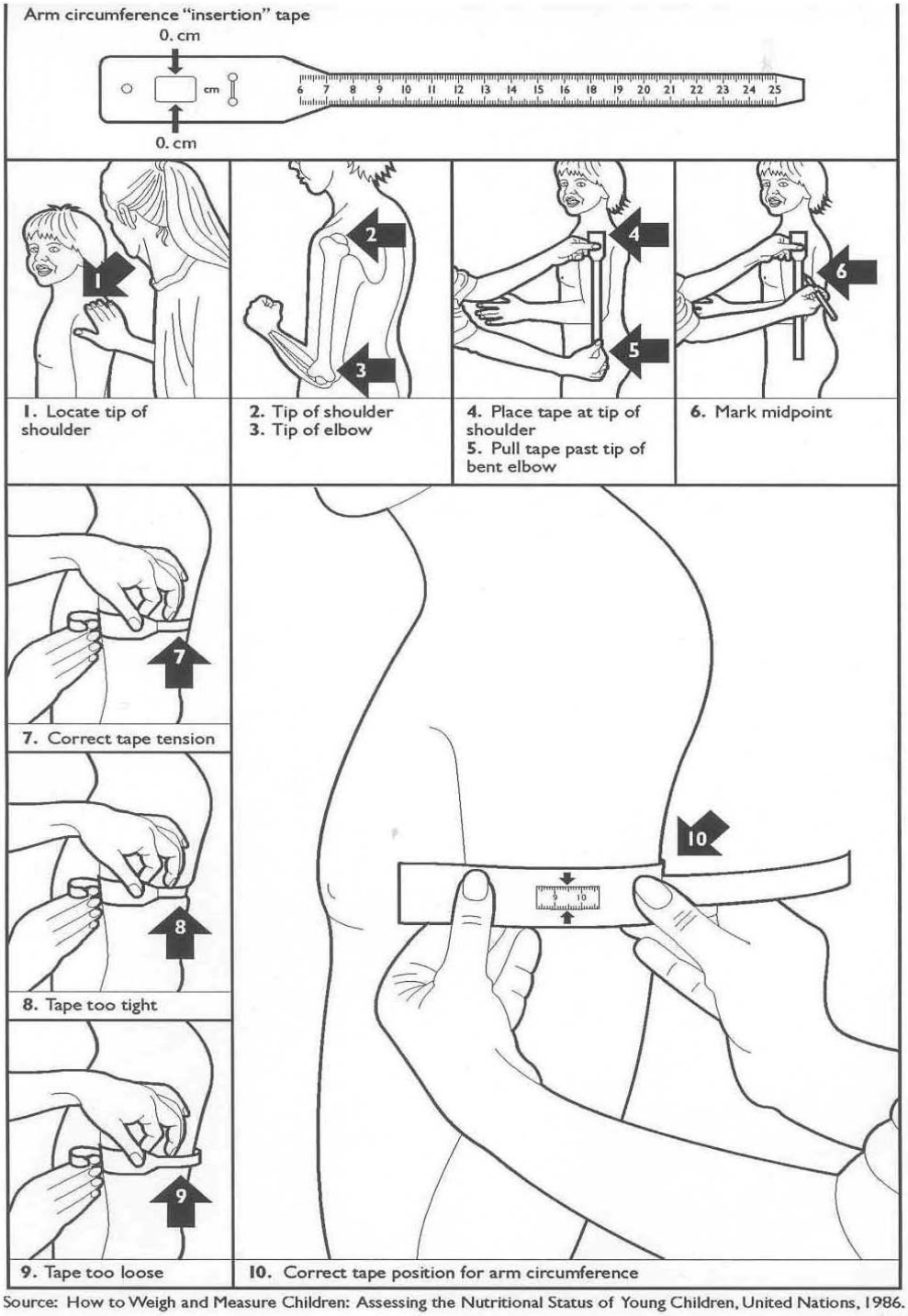
2. Calculate the midpoint of the child's left upper arm by first locating the tip of the child's shoulder (arrows 1 and 2) with your finger tips. Bend the child's elbow to make the right angle (arrow 3). Place the tape at zero, which is indicated by two arrows, on the tip of the shoulder (arrow 4) and pull the tape straight down past the tip of the elbow (arrow 5). Read the number at the tip of the elbow to the nearest centimetre. Divide this number by two to estimate the midpoint. As an alternative, bend the tape up to the middle length to estimate the midpoint. A piece of string can also be used for this purpose. Mark the midpoint with a pen on the arm (arrow 6).

3. Straighten the child's arm and wrap the tape around the arm at the midpoint. Make sure the numbers are right side up. Make sure the tape is flat around the skin (arrow 7).

4. Inspect the tension of the tape on the child's arm. Make sure the tape has the proper tension (arrow 7) and is not too tight or too loose (arrows 8 and 9). Repeat any step as necessary.

5. When the tape is in the correct position on the arm with correct tension, read and call out the measurement to the nearest 0.1cm (arrow 10).

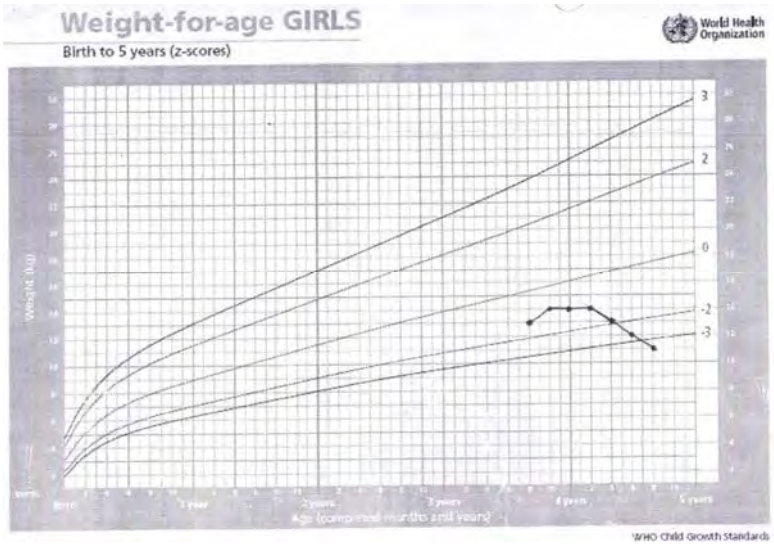
6. Immediately record the measurement.

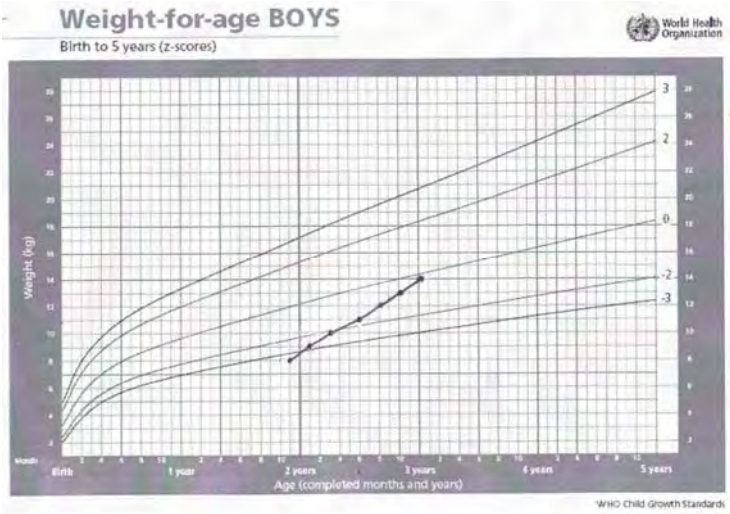


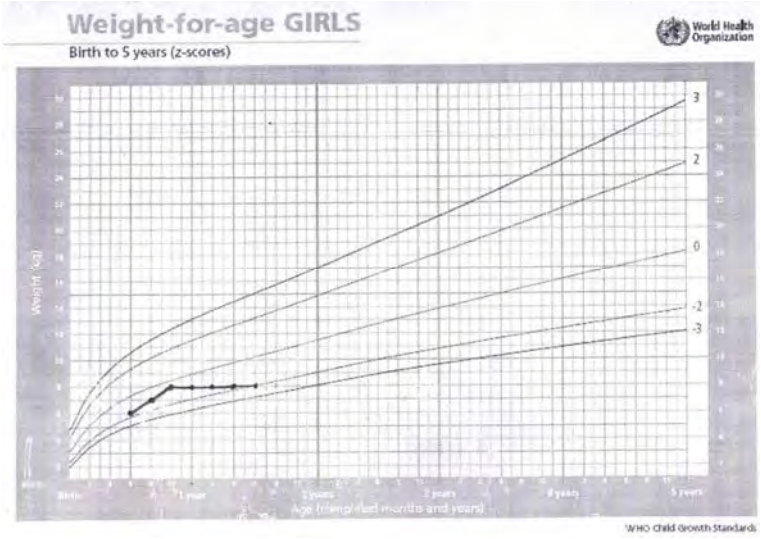
Source: How to Weigh and Measure Children: Assessing the Nutritional Status of Young Children, United Nations, 1986.

MUAC	CLASSIFICATION
Children 6–11 months old: <11 cm Children 12–59 months old: <11 cm 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.)	***SEVERE***
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 Children 10–14 years old: 16–18 cm Adults: 18–21 cm	***MODERATE***
Children Infants 6 – 11 month old : > 12 cm Children 12 -59 months old : > 13 cm Children 5 -9 years old : > 14.5 cm Children 10 – 14 years old > 18 cm Adults: > 21 cm	***NORMAL***

Handout 15. Sample Growth Chart



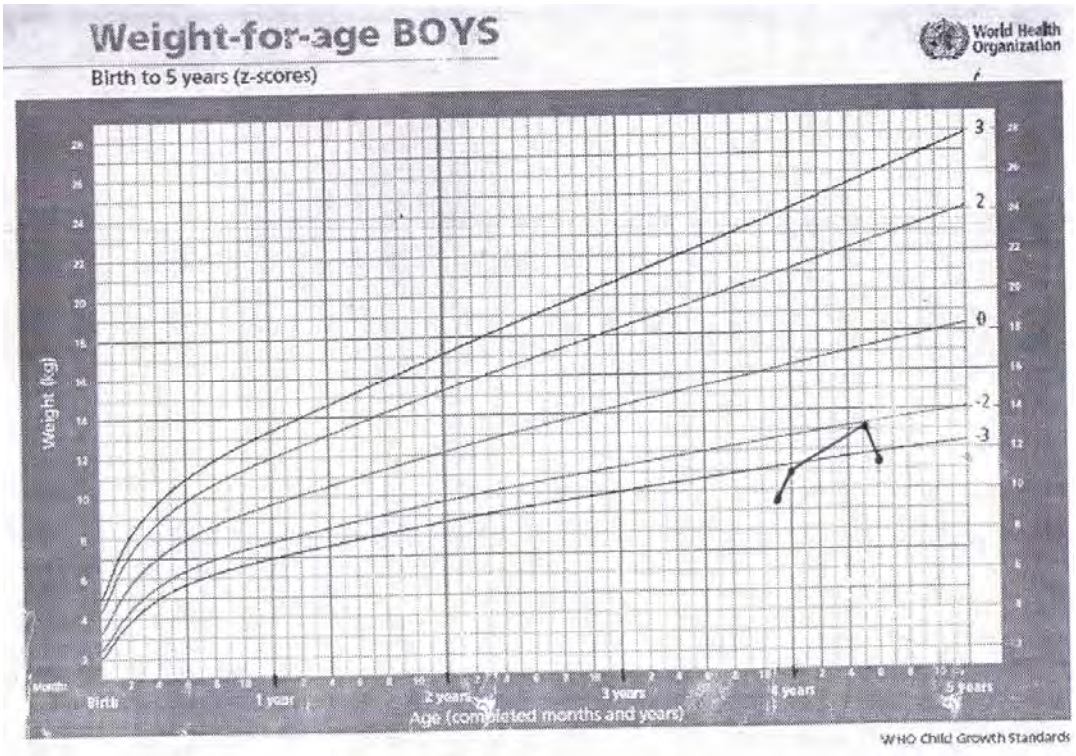




Handout 16. Case Study

Part 1.

Kebede's is a 47 months old 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 creps. Kebede's Growth Chart is shown below. He had all his immunisations. His mother says she is HIV infected and Kebele 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 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 but 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 grand mother has been coming for two months to collect Kebede's supplementary feeds (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, where he spends six–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.

Handout 17: Drugs Commonly Taken by PLHIV, Likely Side Effects, & Recommended Dietary Practices to Increase Drug Efficacy

Medication	Purpose	Recommended To be taken	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, & 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, lost 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	1 hour before or 2 hours after meal. Drink at least 1,500ml of fluid daily. Do not drink grapefruit juice, it may lower the level of medicine in the blood. Avoid St. John's wort.	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. Avoid St John's wort.	Abdominal pain, diarrhoea, headache, weakness, nausea. May increase the risk of lipodystrophy and/or diabetes.
Nelfinavir	Antiretroviral	With meal or light snack. Avoid St John's wort.	Diarrhoea, flatulence, nausea, abdominal pain, and rash. May increase the risk of lipodystrophy.

Medication	Purpose	Recommended To be taken	Potential side effects
Nevirapine (NVP)	Antiretroviral	Can be taken without regard to food. Avoid St John's wort.	Nausea, vomiting rash, fever, headache, skin reactions, fatigue, stomatitis, abdominal pain, drowsiness, paresthesia. High hepatoxicity.
Ritonavir	Antiretroviral	With meal if possible. Avoid St John's wort.	Nausea, vomiting, diarrhoea, hepatitis, jaundice, weakness, anorexia, abdominal pain, fever, diabetes, headache, dizziness. May increase the risk of lipodystrophy.
Saquinavir	Antiretroviral	With meal or light snack within 2 hours of a high-fat meal & high-calcium meal. Avoid garlic supplements & St John's wort.	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.	Nausea, vomiting, diarrhoea, peripheral neuropathy, chills and fever, anorexia, stomatitis, diarrhoea, anaemia, headaches, rash, bone marrow, and pancreatitis. May increase the risk lipodystrophy. Limit the consumption of alcohol.
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, dyspepsia, insomnia, muscle pain, and rash
Isoniazid	Treatment of tuberculosis	1hour before or 2 hours after meals. May cause possible reactions with foods such as bananas, beer, avocados, liver, smoked pickled fish, yeast and yogurt. May	Anorexia and diarrhoea.

Medication	Purpose	Recommended To be taken	Potential side effects
		interfere with vitamin B_6 metabolism and require vitamin B_6 supplementation. Avoid alcohol.	
Rifampin	Treatment of tuberculosis	On an empty stomach 1hour 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: Sulfamethox-azole, 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 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, Folinic acid supplementation needed	Nausea, vomiting, taste loss, and diarrhoea. Not recommended if folate deficient and for women breastfeeding.

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

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						

Handout 19. List of Illustrative Indicators

INPUT INDICATORS

1. No./% of HIV treatment sites where standard protocol for nutrition care of HIV exists, available at facility or at least one staff trained
2. No./% of HIV treatment sites where standard protocol for nutrition care of HIV exists, or at least one staff trained
3. No./% of sites with forms/registers for documenting nutrition information
4. No./% of sites with standard/functional equipments:-
   - o Weighing scales (adult, paediatric)
   - o Stadiometer
   - o Length board
   - o MUAC tapes

5. No./% of sites with food commodities available (No. stock-outs in 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 PLWHA.
9. Number of Community Health Workers trained to support PMTCT + nutrition services
10. Number of Community Health Workers trained to support HBC + nutrition services

PROCESS INDICATORS

1. Proportion of facility staff providing nutrition counselling to PLWHA who provide quality counselling (to be defined by standard checklist)
2. .No./% of sites with adequate inventory control system + transport system for commodities
3. No./% of sites providing nutrition services $\geq$ x days/week
4. No./% of service providers in Nutrition
5. Counselling who meet the quality standard
6. No./% of service providers, who measures height/weight/MUAC correctly based on standard/checklist
7. No./% of service providers using the protocol or standards in service provision

OUTPUT INDICATORS

1. Number and proportion of PLWHA clients receiving nutritional assessment.
2. Number and proportion of PLWHA clients provided with nutrition counselling.
3. Number of clients provided with nutritional supplements (disaggregated by ART, non-ART, PMTCT, and OVC; and disaggregated by therapeutic food, supplementary food, and micronutrient supplements).

4. Proportion of clinically malnourished PLWHA 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 program aired.
7. No./% of clients with weight/height measured or recorded at first entry
8. No./% of clients with weight/height measured or recorded in the past three months
9. No./% of clients whose nutrition management plan is determined
10. No./% of clients with who are put on nutrition plan/disaggregated by plan
11. No./% of HIV affected individuals receiving food and nutrition support at facility level
12. No./% of malnourished clients receiving food
13. No./% of partners session held to review quality of nutrition services

OUTCOME INDICATORS

1. No./% of clients graduating from Plan A to Plan B and Plan B to Plan C
2. Average duration spent in each plan
3. No./% of clients who know $\geq$ 2 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 PLWHA 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 PLWHA who die per quarter.
4. Incidence of OI/No. of episodes of diarrhoea per no. of clients
5. No./% with perceived improvement in quality of life
6. No./% of clients in the working category of functional status (W, A, B)

Handout 20: 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 nutrient/s is/are most needed by PLHIV?
   a) Energy b) Proteins c) Vitamins and minerals d) All
7. Nutritional 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?
   d) Nutritional support has the greatest impact in the early stage of HIV.
   e) Nutritional support has the greatest impact in the late stage of HIV.
   f) Nutritional support has an impact regardless of the stage of HIV.
9. Nutrition has a role in managing food and drug interaction and side effects.
   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 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. The effect of malnutrition and HIV on immune system is manifested by decreasing CD4 counts.

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?

e) A person suffering from diarrhoea needs to drink a lot of water.
f) Green leafy vegetables are rich sources of iron.
g) People suffering from constipation should eat more refined foods.
h) 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 nutritional 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 21. Daily Evaluation Form (Day 3)

Fill out this form as each topic is completed.

1 = Good 2 = Average 3 = Poor

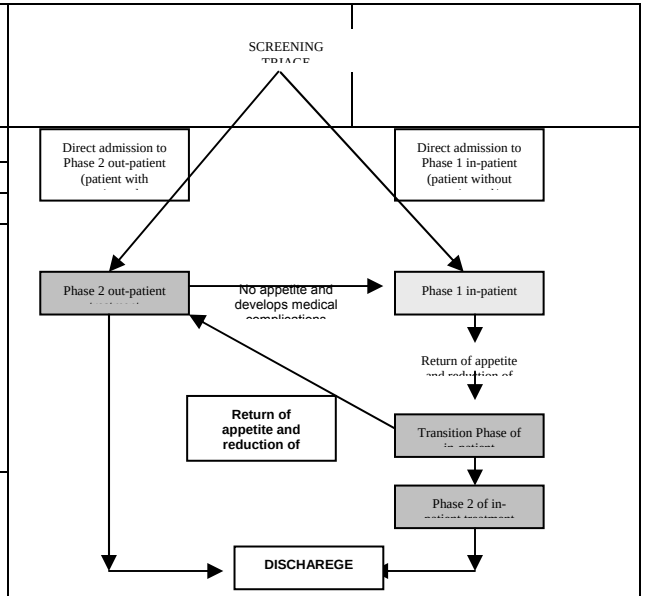
Topic	Time allocated	Relevance to your work	Support from facilitators	Resources	Contribution to skills improvement	Suggestions
Session 4						
1. Field practice						
2. Feed back from the field						
Session 5						
1. Logistics						
Session 6						
1. Monitoring and Evaluation						
Session 7				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

Handout 22: 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 > 6 months[1]

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	In-patient/Day care / Out-patient/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** Vitamin A Folic acid Amoxicillin Malaria Measles (>9 months) **Iron** **Albendazole**	**Direct admission in Phase 1 (in-patient)** **1 does at admission (conditional – see protocol) and 1 dose on discharge** **1 dose at admission if sign of anaemia** **Every day in Phase 1 + 4 days in Transition** **According to national protocol** **According to national protocol** **1 vaccine at admission if no card and 1 vaccine at discharge** **Add to F100 in Phase 2** **1 dose on first day of Phase 2**

Direct admission in Phase 2 (out-patient)
1 does on 4th week (4th visit)
1 dose at admission if sign of anaemia
1 dose at admission + 7 days treatment at home
According to national protocol
1 vaccine on 4th week (4th visit)
No
1 dose on 2nd week (2nd visit)

[1] For infants < 6 months or 3 kilos, refer to national protocol for management of sever acute malnutrition, FMOH, June 2006

Annex2 Summary of OTP

Outpatient Therapeutic Program

Out-patient care

Children can be admitted directly into the OTP, treated with routine drugs and given RUTF to eat at home. Out-patient treatment is normally organised from the same facilities that have in-patients.

- Patients who pass the appetite test and are free of medical complications should normally be directly admitted to the OTP, if the caretaker agrees. Out-patient 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 out-patient programme, if they fulfil the admission criteria.

In-patient 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 in-patients, because a sudden change to large amounts of diet 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.

The main objective of therapeutic care is to reduce the prevalence of severe malnutrition and mortality among vulnerable groups. Children > 6 months and < 5 years are more susceptible to malnutrition because of higher nutritional requirements in relation to their weight in comparison with adults.

3. Admission

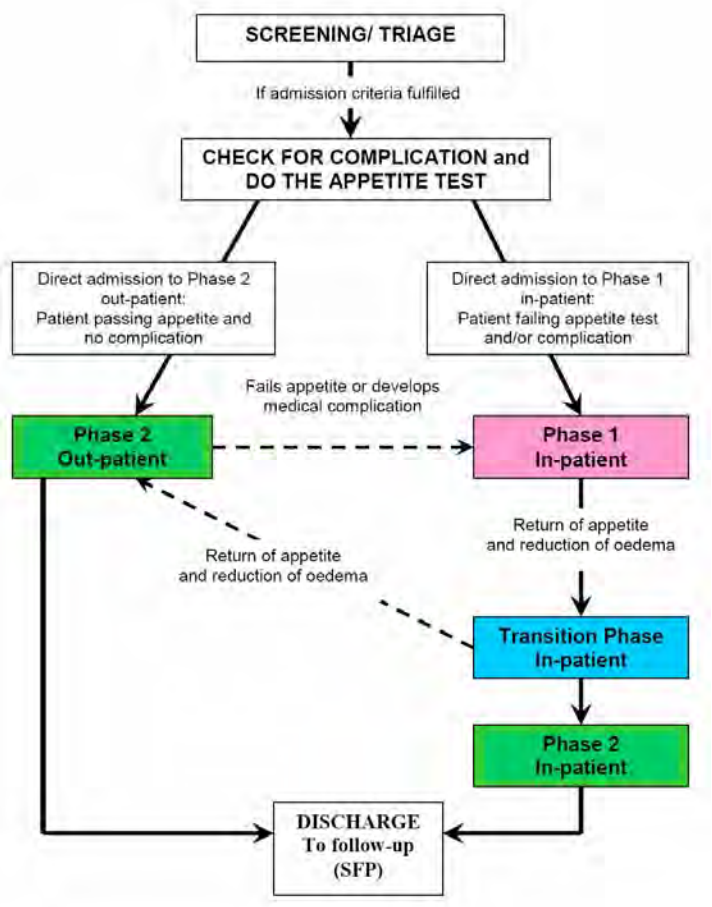
3.1. Admission criteria

AGE	ADMISSION CRITERIA
6 months to 18 years	**1.** W/H or W/L < 70% **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, it must be used.

3.2. Admission procedures:



➔ First the patient is identified in the community or health facility by anthropometry and looking for oedema. Once the child has fulfilled any of the admission criteria, the health worker needs to decide, whether the child requires inpatient or out-patient 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 in-patient care.

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

SIGN	REFERRAL to SC / TFU / HOSPITAL
OEDEMA	Grade 3 +++
	Marasmus – Kwashiorkor (W/H <70 % with oedema) **or** MUAC < 11.0 cm with oedema
APPETITE / ANOREXIA	Failed appetite test or unable to eat
VOMITING	Severe / intractable (uncontrollable)
TEMPERATURE	Fever: >39 °C
	Hypothermia: axillary's 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 IM treatment
ALERTNESS	Very weak, lethargic, unconscious
	Fitting / convulsions
HYDRATION STATUS	Severe dehydration based on history & clinical signs
	Any conditions, that requires an infusion or NG tube feedings
	Other general signs the clinician thinks warrants transfer to the in-patient facility for assessment

Referral criteria:

- Altered consciousness (e.g. confusion, sleepy, drowsy, coma);
- Not able to drink or feed;
- Severe dehydration;
- Persistent fever;
- Frequent vomiting;
- Convulsion or recent history of convulsion;
- 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 in-patient care.

Medicines

	Direct admission to in-patient (Phase 1)	Direct admission to out-patient (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+4 more days in transition	- 1 dose at admission + 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 is already in all RUTF
Deworming	- 1 dose at the start of Phase 2	- 1 dose on the 2nd week (2nd visit)

Discharge criteria

A child stays in the programme until they meet the discharge criteria or until they have been in the programme for a maximum of 2 months. The discharge criteria depend on the admission criteria.

Cured (D1)

Option 1[2] 6 months to 18 years	W/L>=85 % **or** W/H >=85% for 2 consecutive weeks **and** no oedema for 14 days, if a child is admitted with oedema
Option 2[3] 6 months to adulthood	Target weight gain (see table Annex 14) **and** no oedema for 14 days, if s/he is admitted with oedema

All the patients should be discharged to 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 IMCI diseases and who are malnourished frequently show no signs of these diseases. However, the major complications lead to a loss of appetite. Most importantly, 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, if a patient should be sent to in- or out- patient 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 take the diet at home and will continue to deteriorate or die. As the patient does not eat the special therapeutic food (RUTF), the family will take the surplus and become habituated to sharing.

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 gives 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 quiet, private area and continue to quietly encourage the child and take time over the test. The test usually takes a short time, but may take 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 gives the4 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 meals, snacks, and foods

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 gm Medium ladle = 70 gm Large ladle =100gm

Annex 5: 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 with out 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

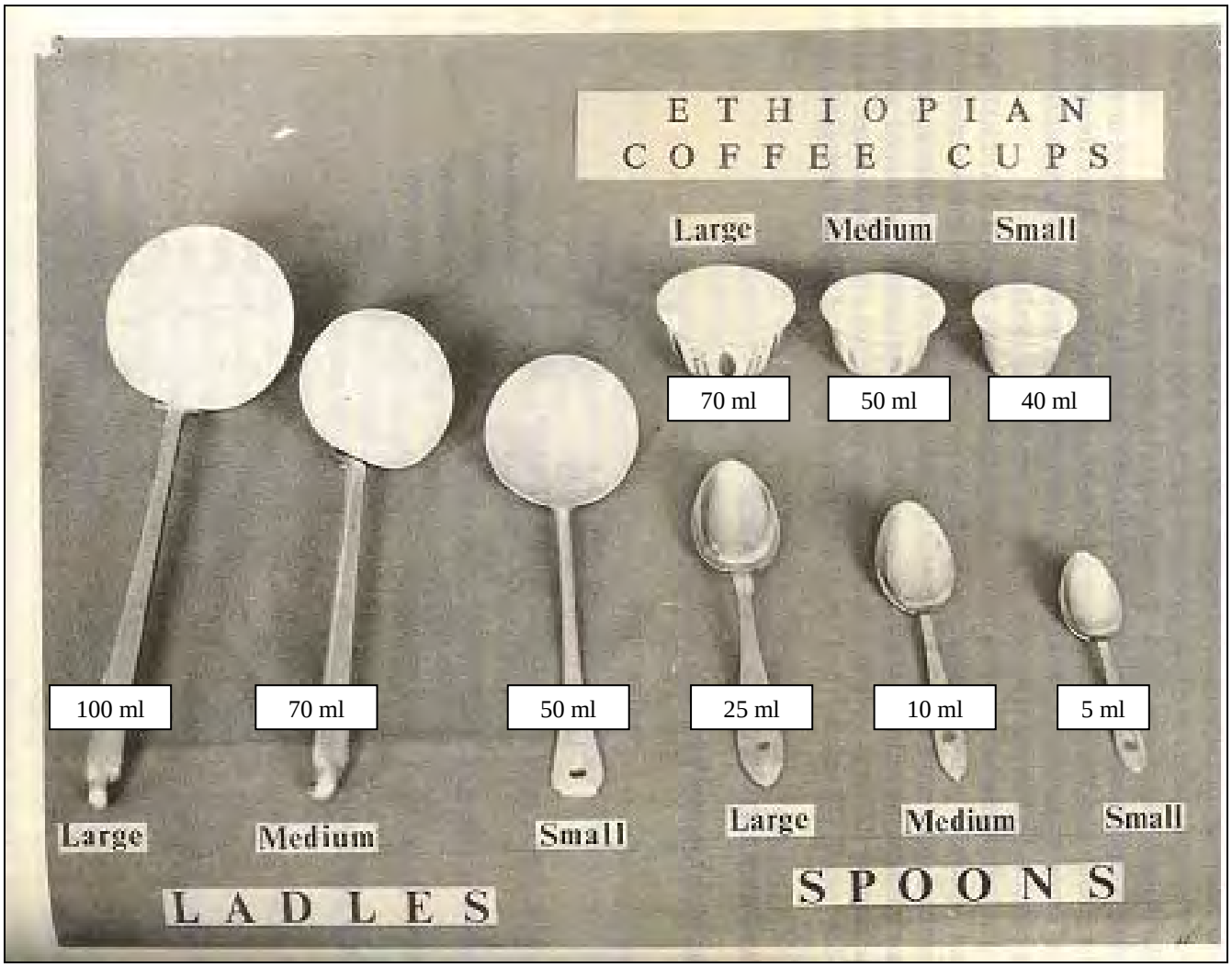
Annex 6: Bulk foods:

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	Arer, 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

Food	Local name	**Energy** (kilo-calories)	**Protein** (Grams)
Egg, whole, raw	Inqulal, difin, t'rye	153	12.1
Fish:			
Lake fish, raw	Yehatq asa, t'rye	107	17.6
River fish, raw	Yewenz asa, t'rye	137	18.9
Sugars:			
Sugar, refined	Sikkwar	385	0.0
Fats:			
Butter, unspiced, raw	Qibye, qimem, 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 WHO Growth standards

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

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

67.0	7.7	7.1	6.6	6.1
67.5	7.9	7.2	6.7	6.2
68.0	8.0	7.3	6.8	6.3
68.5	8.1	7.5	6.9	6.4
69.0	8.2	7.6	7.0	6.5
69.5	8.3	7.7	7.1	6.6
70.0	8.4	7.8	7.2	6.6
70.5	8.5	7.9	7.3	6.7
71.0	8.6	8.0	7.4	6.8
71.5	8.8	8.1	7.5	6.9
72.0	8.9	8.2	7.6	7.0
72.5	9.0	8.3	7.6	7.1
73.0	9.1	8.4	7.7	7.2
73.5	9.2	8.5	7.8	7.2
74.0	9.3	8.6	7.9	7.3
74.5	9.4	8.7	8.0	7.4
75.0	9.5	8.8	8.1	7.5
75.5	9.6	8.8	8.2	7.6
76.0	9.7	8.9	8.3	7.6
76.5	9.8	9.0	8.3	7.7
77.0	9.9	9.1	8.4	7.8
77.5	10.0	9.2	8.5	7.9
78.0	10.1	9.3	8.6	7.9
78.5	10.2	9.4	8.7	8.0
79.0	10.3	9.5	8.7	8.1
79.5	10.4	9.5	8.8	8.2
80.0	10.4	9.6	8.9	8.2
80.5	10.5	9.7	9.0	8.3
81.0	10.6	9.8	9.1	8.4
81.5	10.7	9.9	9.1	8.5
82.0	10.8	10.0	9.2	8.5
82.5	10.9	10.1	9.3	8.6
83.0	11.0	10.2	9.4	8.7
83.5	11.2	10.3	9.5	8.8
84.0	11.3	10.4	9.6	8.9
84.5	11.4	10.5	9.7	9.0
85.0	11.5	10.6	9.8	9.1
85.5	11.6	10.7	9.9	9.2
86.0	11.7	10.8	10.0	9.3
86.5	11.9	11.0	10.1	9.4
87.0	12.0	11.1	10.2	9.5
87.5	12.1	11.2	10.4	9.6
88.0	12.2	11.3	10.5	9.7
88.5	12.4	11.4	10.6	9.8
89.0	12.5	11.5	10.7	9.9
89.5	12.6	11.6	10.8	10.0
90.0	12.7	11.8	10.9	10.1
90.5	12.8	11.9	11.0	10.2
91.0	13.0	12.0	11.1	10.3
91.5	13.1	12.1	11.2	10.4
92.0	13.2	12.2	11.3	10.5

67.0	7.5	6.9	6.3	5.8
67.5	7.6	7.0	6.4	5.9
68.0	7.7	7.1	6.5	6.0
68.5	7.9	7.2	6.6	6.1
69.0	8.0	7.3	6.7	6.1
69.5	8.1	7.4	6.8	6.2
70.0	8.2	7.5	6.9	6.3
70.5	8.3	7.6	6.9	6.4
71.0	8.4	7.7	7.0	6.5
71.5	8.5	7.7	7.1	6.5
72.0	8.6	7.8	7.2	6.6
72.5	8.7	7.9	7.3	6.7
73.0	8.8	8.0	7.4	6.8
73.5	8.9	8.1	7.4	6.9
74.0	9.0	8.2	7.5	6.9
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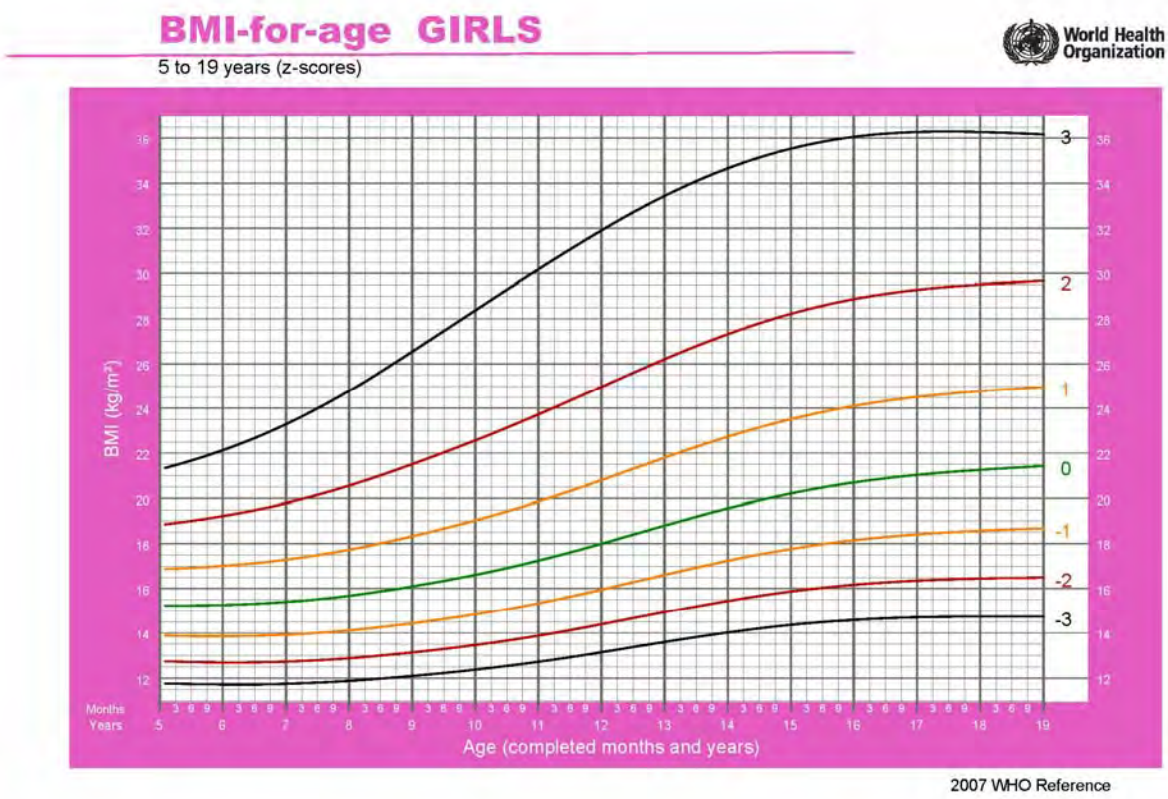
79.0	9.9	9.1	8.3	7.7
79.5	10.0	9.1	8.4	7.7
80.0	10.1	9.2	8.5	7.8
80.5	10.2	9.3	8.6	7.9
81.0	10.3	9.4	8.7	8.0
81.5	10.4	9.5	8.8	8.1
82.0	10.5	9.6	8.8	8.1
82.5	10.6	9.7	8.9	8.2
83.0	10.7	9.8	9.0	8.3
83.5	10.9	9.9	9.1	8.4
84.0	11.0	10.1	9.2	8.5
84.5	11.1	10.2	9.3	8.6
85.0	11.2	10.3	9.4	8.7
85.5	11.3	10.4	9.5	8.8
86.0	11.5	10.5	9.7	8.9
86.5	11.6	10.6	9.8	9.0
87.0	11.7	10.7	9.9	9.1
87.5	11.8	10.9	10.0	9.2
88.0	12.0	11.0	10.1	9.3
88.5	12.1	11.1	10.2	9.4
89.0	12.2	11.2	10.3	9.5
89.5	12.3	11.3	10.4	9.6
90.0	12.5	11.4	10.5	9.7
90.5	12.6	11.5	10.6	9.8
91.0	12.7	11.7	10.7	9.9
91.5	12.8	11.8	10.8	10.0
92.0	13.0	11.9	10.9	10.1

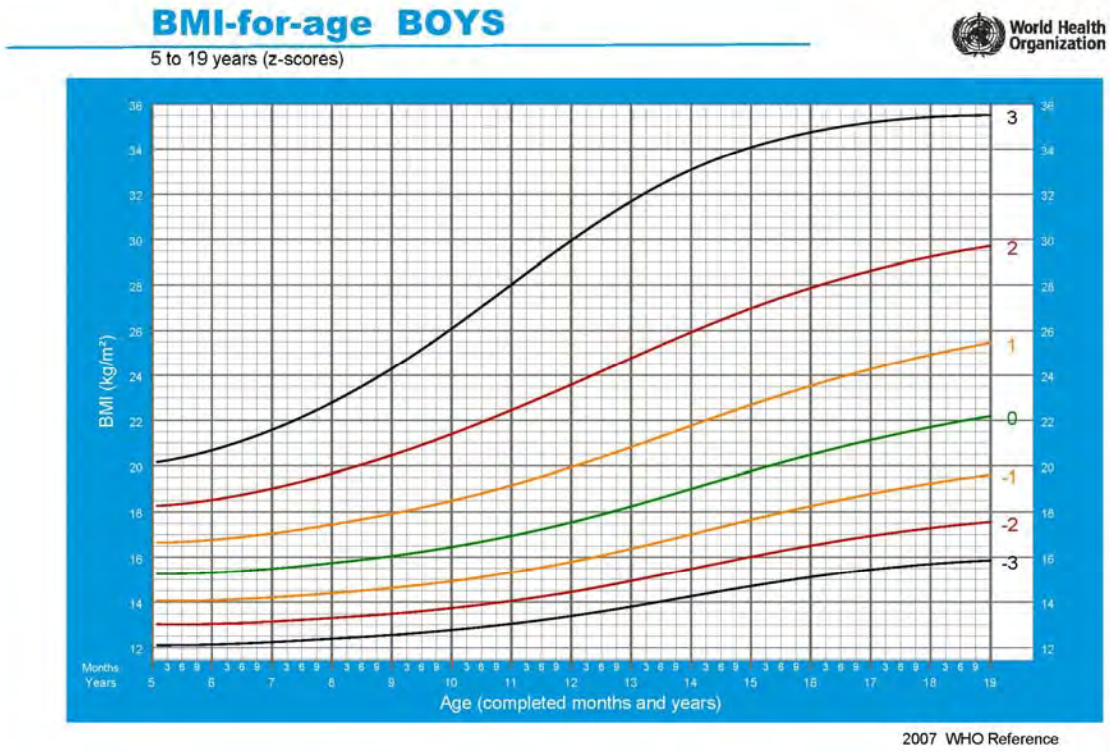
92.5	13.3	12.3	11.4	10.6
93.0	13.4	12.4	11.5	10.7
93.5	13.5	12.5	11.6	10.7
94.0	13.7	12.6	11.7	10.8
94.5	13.8	12.7	11.8	10.9
95.0	13.9	12.8	11.9	11.0
95.5	14.0	12.9	12.0	11.1
96.0	14.1	13.1	12.1	11.2
96.5	14.3	13.2	12.2	11.3
97.0	14.4	13.3	12.3	11.4
97.5	14.5	13.4	12.4	11.5
98.0	14.6	13.5	12.5	11.6
98.5	14.8	13.6	12.6	11.7
99.0	14.9	13.7	12.7	11.8
99.5	15.0	13.9	12.8	11.9
100.0	15.2	14.0	12.9	12.0
100.5	15.3	14.1	13.0	12.1
101.0	15.4	14.2	13.2	12.2
101.5	15.6	14.4	13.3	12.3
102.0	15.7	14.5	13.4	12.4
102.5	15.9	14.6	13.5	12.5
103.0	16.0	14.8	13.6	12.6
103.5	16.2	14.9	13.7	12.7
104.0	16.3	15.0	13.9	12.8
104.5	16.5	15.2	14.0	12.9
105.0	16.6	15.3	14.1	13.0
105.5	16.8	15.4	14.2	13.2
106.0	16.9	15.6	14.4	13.3
106.5	17.1	15.7	14.5	13.4
107.0	17.3	15.9	14.6	13.5
107.5	17.4	16.0	14.7	13.6
108.0	17.6	16.2	14.9	13.7
108.5	17.8	16.3	15.0	13.8
109.0	17.9	16.5	15.1	14.0
109.5	18.1	16.6	15.3	14.1
110.0	18.3	16.8	15.4	14.2

92.5	13.1	12.0	11.0	10.1
93.0	13.2	12.1	11.1	10.2
93.5	13.3	12.2	11.2	10.3
94.0	13.5	12.3	11.3	10.4
94.5	13.6	12.4	11.4	10.5
95.0	13.7	12.6	11.5	10.6
95.5	13.8	12.7	11.6	10.7
96.0	14.0	12.8	11.7	10.8
96.5	14.1	12.9	11.8	10.9
97.0	14.2	13.0	12.0	11.0
97.5	14.4	13.1	12.1	11.1
98.0	14.5	13.3	12.2	11.2
98.5	14.6	13.4	12.3	11.3
99.0	14.8	13.5	12.4	11.4
99.5	14.9	13.6	12.5	11.5
100.0	15.2	13.7	12.6	11.6
100.5	15.2	13.9	12.7	11.7
101.0	15.3	14.0	12.8	11.8
101.5	15.5	14.1	13.0	11.9
102.0	15.6	14.3	13.1	12.0
102.5	15.8	14.4	13.2	12.1
103.0	15.9	14.5	13.3	12.3
103.5	16.1	14.7	13.5	12.4
104.0	16.2	14.8	13.6	12.5
104.5	16.4	15.0	13.7	12.6
105.0	16.5	15.1	13.8	12.7
105.5	16.7	15.3	14.0	12.8
106.0	16.9	15.4	14.1	13.0
106.5	17.1	15.6	14.3	13.1
107.0	17.2	15.7	14.4	13.2
107.5	17.4	15.9	14.5	13.3
108.0	17.6	16.0	14.7	13.5
108.5	17.8	16.2	14.8	13.6
109.0	18.0	16.4	15.0	13.7
109.5	18.1	16.5	15.1	13.9
110.0	18.3	16.7	15.3	14.0

Annex 9: BMI-for-age GIRLS



BMI-for-age BOYS



Annex 10: Safe Water System & 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/AIDS (PLWHA) and their families, the principles apply to all members of the community, and particularly those who are particularly vulnerable to diarrhoea such as PLWHA and children less that 5 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 (dilute 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 ½ 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 is prevention for 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 odor of chlorine means that their water is safe to drink.

Safety Issues and Health Impact: Wuha agar is dilute and 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

Hand washing is the number one prevention against the spread of person-to-person infection. Hand washing is the cornerstone of infection-control practice.

Benefits of integrating proper hand washing into daily hygiene routine:

1) Hand washing with soap is the number one prevention against 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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