



NUTRITION CARE AND SUPPORT FOR PEOPLE WITH HIV  
Nutrition Assessment, Counselling and Support  
(NACS)



TRAINING MANUAL FOR  
FACILITY-BASED PROVIDERS

**Facilitator's Guide**

2017



## **Nutrition Assessment, Counselling and Support (NACS) Training Manual for Facility-Based Providers: Facilitators' Guide**

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### **Recommended citation:**

Zambia Ministry of Health, National Food and Nutrition Commission and Food and Nutrition Technical Assistance III Project (FANTA). 2017. *Nutrition Assessment, Counselling and Support (NACS) Training Manual for Facility-Based Providers: Facilitator's Guide*. Lusaka.

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## FOREWORD

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Zambia has made significant progress in reducing morbidity and mortality due to HIV and AIDS through the provision of free comprehensive HIV prevention services and antiretroviral drugs in all public health facilities. This has led to a reduction of new HIV infections from 77,500 in 2010 to approximately 46,000 in 2016. However, the devastating impact of HIV infection continues to be experienced by individuals, families, communities and the nation at large.

Evidence has shown that there is a relationship between HIV and nutrition. In the presence of HIV infection, nutrient requirements increase, and, HIV infection impairs nutrient intake and uptake. Poor nutrition therefore increases the risk of opportunistic infections and causes acceleration in progression of HIV to AIDS. In addition, maintaining good nutrition helps in reinforcing the effectiveness of antiretroviral drugs by improving their tolerance and safety. Thus, malnutrition and HIV/AIDS are interdependent and create a vicious cycle.

The Government of the Republic of Zambia recognizes that nutrition is an important component in the provision of quality care and support to people living with HIV and AIDS. This is in accordance with the National Health Strategic Plan 2017-2021, embedded in the 7th National Development Plan 2017-2021, that identifies the importance of a healthy nation in attaining middle income status by 2030.

These guidelines were therefore developed to define the necessary actions service providers need to take for them to include nutrition components at all sites providing HIV services and treatment including; maternal and child health (MCH) care services, services for orphans and vulnerable children (OVC), and home-based care (HBC) services. They seek to assist all categories of people infected with and/or affected by HIV.

In order to successfully implement quality nutritional care and support services to PLHIV, there is need for an inferred partnership between those affected and the different levels of care providers, as well as a coordinated effort by all stakeholders. I therefore call for the wide dissemination and use of these guidelines as a complement to other documents providing guidance on HIV prevention, treatment and support so as to improve the quality of life of people living with HIV and AIDS.



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Hon. Dr. Chitalu Chilufya, M.P.  
Minister of Health

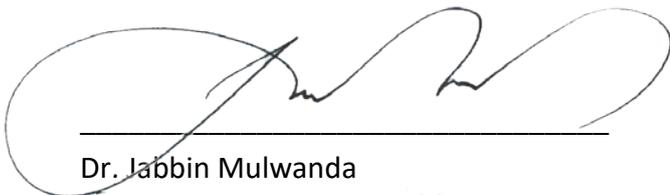
## ACKNOWLEDGEMENTS

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This training manual was developed after extensive review and technical updates of existing nutrition and infectious disease training guides used in and outside Zambia. The manual is a publication of the Zambian Ministry of Health (MOH) and National Food and Nutrition Commission (NFNC), prepared with technical and financial support from the Food and Nutrition Technical Assistance III Project (FANTA), managed by FHI 360, through funding from the U.S. Agency for International Development (USAID)/Zambia and U.S. President's Emergency Plan for AIDS Relief (PEPFAR).

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Printing of the manual was made possible by FANTA/Zambia and the Thrive Project.



Dr. Jabbin Mulwanda  
Permanent Secretary-Health Services  
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## ABBREVIATIONS AND ACRONYMS

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AIDS	Acquired immune deficiency syndrome
ART	Antiretroviral therapy
ARV	Antiretroviral drug
BMI	Body mass index
DHO	District Health Office
DOTS	Directly observed (TB) treatment, short course
FANTA	Food and Nutrition Technical Assistance III Project
g	Gramme(s)
HEPS	High-energy protein supplement
HIV	Human immunodeficiency virus
HBC	Home-based care
kg	Kilogramme(s)
MAM	Moderate acute malnutrition
MOH	Ministry of Health
MUAC	Mid-upper arm circumference
NACS	Nutrition assessment, counselling and support
NFNC	National Food and Nutrition Commission
NGO	Nongovernmental organisation
OVC	Orphan(s) and vulnerable child(ren)
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
PMTCT	Prevention of mother-to-child transmission of HIV
RUTF	Ready-to-use therapeutic food
SAM	Severe acute malnutrition
TB	Tuberculosis
UNAIDS	United Nations Program on HIV/AIDS
USAID	United States Agency for International Development
WHO	World Health Organisation
WAZ	Weight-for-age z-score
WHZ	Weight-for-height z-score
ZDHS	Zambia Demographic and Health Survey

# INTRODUCTION

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Undernutrition is one of the major complications of illness. In resource-constrained settings, illness combined with pre-existing undernutrition makes it difficult for people to remain healthy and economically productive. Infections are associated with symptoms that reduce appetite, interfere with nutrient digestion and absorption and change metabolism. This cycle leads to weight loss, loss of muscle tissue and body fat, vitamin and mineral deficiencies, reduced immune function and competence and increased susceptibility to secondary infections.

Nutrition care and support can prevent malnutrition, improve nutritional status, ensure adequate food intake, prevent food- and water-borne illness, enhance quality of life through symptom management and provide palliative care during the advanced stages of illness. The three components of nutrition care are nutrition assessment, counselling and support (NACS). Assessment information enables health care providers to counsel clients on the most effective actions to help them improve their diets, manage their symptoms and avoid infections. Assessment results also can be used to target other nutrition interventions such as therapeutic and supplementary feeding and to monitor programme effectiveness.

To strengthen the integration of nutrition into Zambia's health system, health care providers need adequate nutrition knowledge and skills. This training course is an essential step to integrate nutrition care and support into routine service delivery in Zambia. This manual was designed to ensure accurate and consistent application of nutrition assessment and counselling skills and accommodate the time constraints of health care providers. Participants develop action plans to apply their skills in their workplaces and then convene for meetings during the year to review their experience under the mentorship of trainers or regional supervisors.

## Purpose of the Facilitator's Guide

The purpose of this guide is to help facilitators conduct a 5-day training to strengthen the skills of health care providers in NACS. The guide supports the National Nutrition Policy; extends the implementation of Integrated Management of Malnutrition (IMAM) to older children, adolescents and adults; and supports the *Nutrition Guidelines for Care and Support of People with HIV*. Participant handouts and PowerPoint slides are available separately.

By the end of this training, the participants should be able to:

- Advocate for and discuss the role of nutrition in care and treatment.
- Assess clients' nutritional and clinical status.
- Design a nutrition care plan.
- Prescribe specialised food products for malnourished clients.
- Counsel clients on issues identified during nutrition assessment, including meal planning, dietary management of illness-related symptoms, medication-food interactions and hygiene.

## Course Organisation

**Participants:** This training is intended for health care providers (physicians, nurses, nutritionists, dieticians and counsellors). Trainers may modify the curriculum to meet the needs of staff at various levels. The course should have a maximum of 24 participants per class, ideally with at least two participants from each health facility represented.

**Facilitators:** The course requires at least four facilitators per class of 24 participants. One of the trainers/facilitators should be a nutritionist who takes the role of course director. The other facilitators should ideally be health professionals. The facilitators support participants in practicum, demonstrations, small group discussions and role-plays to strengthen skills. Facilitators should have the following nutrition knowledge and skills:

- Basic knowledge of and experience in nutrition and infections, including HIV
- Technical expertise and experience in child and maternal nutrition
- Familiarity with the local nutrition and health care system and service delivery protocols
- Experience using adult learning and participatory training techniques
- Basic counselling and communication skills

**Venue:** If possible, the training should take place in the district or province where the participants work, in a location accessible to participants from several health facilities. The space should be large enough to allow the participants to work in up to eight small groups.

Arrange the chairs so that all participants can see the board, screen or flipcharts. Conduct the entire course in a circle, if possible, to reinforce an atmosphere of respect, attention, collaboration and trust. Make sure the training room is clean, well lit, ventilated and comfortable. It should have enough space to post the flipcharts and a white wall or screen.

## Content

The *Facilitators' Guide* contains the following material:

- Sample timetable for a 5-day course
- Pre- and post-test and answer key
- Daily evaluation forms for participants
- A post-course evaluation form
- Guidelines for each session (estimated duration, purpose, learning objectives, outline, preparation required, step-by-step training procedures that trainers can adapt to the local context, references and suggested further reading)
- Practical sessions such as demonstrations, case scenarios, role-plays and group work to allow participants to apply the material in a simulated setting
- Annexes that trainers can use during supervision and follow-up after the training

## Resources needed for the 5-day course

- Copy of *Nutrition Assessment, Counselling and Support (NACS) Training Manual: Facilitator's Guide* for each facilitator
- Electronic file with PowerPoint slides

- Copy of each of the following materials for each facilitator and participant:
  - *Nutrition Assessment, Counselling and Support (NACS) Training Manual: Participant Handouts*
  - *Nutrition Guidelines for Care and Support of People with HIV* for each facilitator and participant
  - *2009 Zambia Food Composition Tables*
  - Child Health Clinic Card
  - *2016 Zambia Consolidated Guidelines for Treatment and Prevention of HIV Infection*
  - Counselling flipchart *Eating and Living Well: Good Nutrition Makes a Difference for People Living with Illness* (or at least 1 copy for each facilitator and each health facility represented)
  - Course timetable
- At least two flipchart stands, 3 flipcharts and assorted marker pens
- Three packets of adhesive gum
- LCD projector and computer or overhead projector and transparencies
- Name tag for each facilitator and participant
- Writing pad or notebook for each facilitator and participant
- Pen or pencil for each facilitator and participant
- At least four functioning Salter scales
- At least four functioning mother/baby pair Seca scales
- At least four height boards for adults
- At least four height/length boards for children
- Set of mid-upper arm circumference (MUAC) tapes for each participant (for children 6–59 months, 5–9 years and 10–14 years; adults; and pregnant/postpartum women)
- BMI wheel for each participant
- Selection of local foods from each food group
- *NACS Job Aids* and posters for each participant
- Optional: Copies of other relevant national guidelines, health service provider tools (e.g., SmartCare forms, NACS client card, antenatal card, pharmacy stock control card and nutrition register) for each participant (or at least 1 copy for each health facility represented)

Flipcharts and markers should be available throughout the room. Information written on the flipcharts should be visible to refer to throughout the course.

## Suggestions for Facilitators

### ***Before the training***

- Even if you are an experienced facilitator, read through each session to become thoroughly familiar with the material and the order of presentation.
- Meet with the other facilitators before the training begins to review the **training methods** and **content**. Agree on which facilitators will be responsible for each session and the different activities (role-play, group exercises) in each session.

- Practice role-plays and demonstrations with other facilitators so you know how much time they will take. Make sure you have all the materials needed, including extra chairs, tables or other props to make the demonstrations convincing.
- Agree on acceptable participant responses.
- Review the **objectives** to know what the sessions aim to achieve.
- Go through the text and make notes as needed to remind you of points to emphasise. Think of ways to include your own experience in the training.
- Make advance preparations as suggested at the beginning of each session.
- Print enough handouts for each participant and facilitator.
- Make advance preparations for the health facility visits.
- If possible, gather local inexpensive foods, including nutritious wild foods that may not be commonly eaten, to take to class for the meal planning exercise in Session 1.
- Review the slides for each session.
- Make sure that you can operate the equipment and that the PowerPoint slides project well on a screen or wall.
- If an LCD projector is not available or there is no electricity, print the slides as handouts for each participant (six slides per page).

### ***During the training***

- Speak clearly and loudly enough for everyone to hear.
- Present the information in a natural conversational manner instead of reading the text word for word.
- Maintain eye contact with participants. Ask other facilitators to write information on the flipcharts while you are speaking.
- Follow the session plans accurately and completely.
- Use the PowerPoint slides and flipcharts as visual aids to reinforce information. Highlight the main points on the slides, but do not read every word aloud.
- Move around the room to keep participants engaged, but do not block participants' view of the screen or flipcharts.
- Try to learn participants' names early and use them whenever possible.
- Begin each day with a 5–10-minute **review** of key points covered the previous day. This helps learners remember and retain material and see a connection between what they have learned and what they will learn during the day. Use the review to discuss questions or concerns, highlight useful participant ideas or new knowledge and reinforce topics. Ask participants to do the review when possible.
- Adjust the time of each session as needed to the participants' knowledge and experience.
- Use warm-ups or give 5-minute breaks if participants' energy level seems low or participants seem overwhelmed by the amount of information presented.
- Allow enough time for the practical exercises.
- Be available after each session to answer questions and discuss concerns. Instead of talking with other trainers during breaks, talk with participants.
- HIV is a sensitive topic. Some participants may be living with HIV or have close family or friends living with the disease. Help participants understand and accept others' experience and show mutual respect. Avoid and rectify critical or judgemental comments.

### ***Involving the participants***

- Encourage participants to share their experience. Learning is more effective and faster when it builds on what learners already know or have experienced.
- Allow time for participants to answer questions. Do not give the answers too quickly. Use hints to prompt participants when needed.
- Tell participants that their responses will be received respectfully, even if they are not correct. If a participant gives an incorrect answer, invite others to express their views and steer the discussion toward the correct answer.
- Consult participants throughout to gauge their understanding. Praise or thank them when they do an exercise well, participate in discussion, ask a question or help other participants.
- Reinforce correct answers by expanding on them or asking others to comment.
- Do not allow the same participants to dominate every discussion. Move closer to quieter participants to encourage them to contribute.
- Build trust by showing that you are committed to the course and willing to share your own experience.
- Regularly recap and reflect on points raised during the sessions.
- Explain how you know what you know.
- Remember: Learners can only absorb five or six new pieces of information at a time.

A sample **timetable** for the course is shown on the following pages. The estimated length of the course is 40 hours over 5 days.

8:30–9:30	9:30–10:30	10:30–11:00	11:00–12:00	12:00–13:00	13:00–14:00	14:00–15:00	15:00–16:00	16:00–17:00		
<b>Day 1</b>										
<b>Opening Session</b>	Comprehensive Care and NACS (5)	BREAK	Definition of Nutrition Terms (20)	A Mixed (Balanced) Diet, cont. (10)	LUNCH	Review of Session 1 (5)	Critical Nutrition Actions (10)	Anthropometric Assessment, cont. (60)		
Session Objectives (5)						Session 2 Objectives (5)				
Introductions, Expectations and Objectives (30)	NACS Contact Points and the Role of Health Care Providers (15)			Good Eating Habits (15)		Conditions for Good Nutrition (10)	Meal Planning (25)		Relationship between Nutrition and Infection (10)	Introduction to Action Planning (5)
	Reference Materials for Nutrition Care (10)								Discussion (5)	
Pre-test (20)	Discussion (5)		A Mixed (Balanced) Diet (20)	A Mixed (Balanced) Diet (20)		Discussion (5)	Nutritional Requirements (20)		<b>Session 3. Nutrition Assessment</b>	
	<b>Session 1. Basic Nutrition</b>								Review of Session 2 (5)	
	Session 1 Objectives (5)								Session 3 Objectives (5)	
Comprehensive Care and NACS (5)	Definition of Nutrition Terms (10)		A Mixed (Balanced) Diet (20)	A Mixed (Balanced) Diet (20)		Discussion (5)	Critical Nutrition Actions (20)		Importance of Nutrition Assessment (15)	
Importance and Types of Nutrition Assessment (20)									Anthropometric Assessment (15)	
									Planning a Counselling Session (10)	

8:30–9:30	9:30–10:30	10:30–11:00	11:00–12:00	12:00–13:00	13:00–14:00	14:00–15:00	15:00–16:00	16:00–17:00
<b>Day 2</b>								
<b>Session 3. Nutrition Assessment, cont.</b>	Anthropometric Assessment, cont. (5)	BREAK	Biochemical Assessment, cont. (10)	Communication Skills for Effective Counselling (60)	LUNCH	Preparation for a Counselling Session (40)	Using the Counselling Flipchart, cont. (20)	Nutrition Counselling Practice, cont. (35)
Anthropometric Assessment, cont. (60)	Clinical Nutrition Assessment (40)		Dietary Assessment (25)				Counselling Challenges (15)	
			Discussion (5)					
			<b>Session 4. Nutrition Counselling</b>				Discussion (5)	
			Biochemical Assessment (15)			Review of Session 3 (5)	Review of Session 4 (5)	
	Session 4 Objectives (5)					Session 5 Objectives (5)		
	Definition of Counselling (10)					Interaction between ARVs and Food (10)		

8:30–9:30	9:30–10:30	10:30–11:00	11:00–12:00	12:00–13:00	13:00–14:00	14:00–15:00	15:00–16:00	16:00–17:00		
<b>Day 3</b>										
<b>Session 5. Nutrition and ART, cont.</b>	The Importance of Food and Water Safety (35)	BREAK	Nutritional Needs of Pregnant and Breastfeeding Women, cont. (20)	Discussion (5)	BREAK	Infant Feeding for HIV-Positive Mothers, cont. (25)	Nutrition Support in Health Facilities (10)	Supply Chain Management, cont. (35)		
Medication-Food Plans (35)				<b>Session 8. Nutrition Care for Infants and Young Children</b>			Review of Session 7 (5)		Definition and Purpose of Specialised Food Products (30)	
Discussion (5)				Session 8 Objectives (5)			Discussion (5)			
<b>Session 6. Food and Water Safety and Hygiene</b>	<b>Session 7. Nutrition Care for Pregnant and Breastfeeding Women</b>		Nutrition actions for Pregnant and Breastfeeding Women (30)	Infant and Young Child Feeding (20)		Infant Feeding for HIV-Positive Mothers (25)	BREAK	Feeding Children during Illness and Recovery (5)	Prescription of Specialised Food Products (15)	<b>Session 10. Visit to a Health Facility</b>
Review of Session 5 (5)	Review of Session 6 (5)			Anaemia in Pregnant Women (10)				Session 9 Objectives (5)		Discussion (5)
Session 6 Objectives (5)	Session 7 Objectives (5)								Session 9 Objectives (5)	Supply Chain Management (5)
Food- and Water-Borne Infection (10)	Nutritional Needs of Pregnant and Breastfeeding Women (15)									

8:30–9:30	9:30–10:30	10:30–11:00	11:00–12:00	12:00–13:00	13:00–14:00	14:00–15:00	15:00–16:00	16:00–17:00
<b>Day 4</b>								
<b>Session 10. Visit to a Health Facility, cont.</b>						<b>Session 11. Household Food Security and Nutrition</b>	<b>Session 12. Health Facility-Community Linkages</b>	Home-Based Care, cont. (10)
Health Facility Visit (180)		Report Preparation (40)	Feedback on the Field Visits (60)	LUNCH	Review of Session 10 (5)	Review of Session 11 (5)	Client Follow-up (10)	
					Session 11 Objectives (5)	Session 12 Objectives (5)		
					Effects of Household Food Security on Nutrition (25)	Health Facility-Community Linkages (25)	Client Referral (15)	
							Discussion (5)	
					Improving Food Security for NACS Clients (20)	Continuum of Care (10)	Home-Based Care (15)	
					Discussion (5)			

8:30–9:30	9:30–10:30	10:30–11:00	11:00–12:00	12:00–13:00	13:00–14:00	14:00–15:00	15:00–16:00	16:00–17:00
<b>Day 5</b>								
<b>Session 13. NACS Data Collection and Reporting</b>	Nutrition Data Collection Tools, cont. (5)	BREAK	<b>Session 14. NACS Data Collection and Reporting</b>	Expected Performance, cont. (15)	LUNCH	Final Course Evaluation (15)		
Review of Session 12 (5)			Review of Session 13 (5)					
Session 13 Objectives (5)	Session 14 Objectives (5)							
Purpose of NACS Data Collection (10)	Challenges in Data Collection and Management (10)		Action Plans (35)	<b>Session 15. Post-test and Course Evaluation</b>				
Nutrition Data Collection Tools (40)	Nutrition Indicators (40)			Session 15 Objectives		Review of Course Objectives and Expected Outputs (15)		
				Post-test (25)				
			Expected Performance (15)					

## OPENING SESSION

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**Duration:** 1 hour 35 minutes

### Purpose

This session introduces participants and facilitators to each other, introduces the objectives and expected outcomes of the course and allows participants to discuss their expectations of the course and take a pre-test.

### Objectives

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

1. Discuss their expectations and relate them to the objectives of the training.
2. Communicate freely with each other and with facilitators.
3. Define the role of a health care provider in nutrition care and support.
4. Refer to national reference materials on nutrition.

### Materials

- PowerPoint slides for Session 0
- Ball
- Box
- Numbers chosen at random written on small pieces of paper for each participant
- *Nutrition Assessment, Counselling and Support (NACS) Training Manual: Participant Handouts* for each participant
- *Nutrition Guidelines for Care and Support of People with HIV* for each participant
- Counselling flipchart *Eating and Living Well: Good Nutrition Makes a Difference for People Living with Illness* for each participant or at least for each health facility represented
- *2016 Zambia Consolidated Guidelines for Treatment and Prevention of HIV Infection* for each participant
- *NACS Job Aids* for each participant
- **Handout 0.1. Course Objectives**
- **Handout 0.2. Role of a Health Care Provider in NACS**
- **Annex 1. Pre-test**
- **Annex 3. Pre- and Post-test Answer Key**

### Advance preparation

1. Review slides 0.1 to 0.6.
2. Print out copies of the **course timetable** and the **pre-test** in Annex 1 for all participants.
3. Review the contents of the *Nutrition Guidelines for Care and Support of People with HIV*.
4. Review Handout 0.1 in the *Participant Handouts*.

## TOPIC 1. Session Objectives (5 minutes)

**PRESENT** the session objectives on **slide 0.1** or on a flipchart.

## TOPIC 2. Introductions, Expectations and Objectives (30 minutes)

### Training methods

- Do one of the ice-breaker exercises below or invent another one to introduce the participants to each other, encourage learning about each other and sharing and establish a relaxed and collaborative atmosphere.
  - **Icebreaker 1:** Divide the participants into pairs. Ask them to exchange names, where they come from, positions, workplaces and something interesting such as a food, song, hobby, or game they like. Then ask the participants to introduce each other in plenary.
  - **Icebreaker 2:** Give one participant a ball. Ask her or him to introduce himself or herself by telling his or her name, job, place of work and one thing he or she likes about nutrition. Then ask him or her to throw the ball to another participant, who then introduces himself or herself the same way. If the ball is thrown to someone who has already been introduced, the person who threw the ball must introduce the catcher and then throw the ball to someone else, until everyone is introduced.

**ASK** each participant to share at least one expectation of the course. **WRITE** the expectations on a flipchart. **SHOW slide 0.2** (duplicated below and in **Handout 0.1. Course Objectives**) and **ASK** the participants to compare their expectations with the course objectives.

### The objectives of this training course are to help participants:

- Advocate for and discuss the role of nutrition in care and treatment.
- Assess clients' nutritional status.
- Counsel clients on prevention and management of malnutrition.
- Prescribe specialised food products and other support to malnourished clients.
- Monitor and report on NACS services.

**EXPLAIN** that the course will include presentations, demonstrations, role-plays, discussion and group work. **ENCOURAGE** all participants to contribute to discussions and **EXPLAIN** that no answers will be criticised.

**ORGANISE** the participants into small groups of people from the same health facility or geographical area. Each group should have no more than six people. Working in these groups will allow participants to consult each other back in their workplaces. **GIVE** each group a number. **EXPLAIN** that the participants will return to these groups during the

course. Alternatively, **ASK** the participants to count off from 1 to 6. **EXPLAIN** that everyone with number 1 will be in group 1 and so on.

**FACILITATE** brainstorming of group norms. **WRITE** the responses on a flipchart. Then **ASK** participants to decide on penalties for failing to comply with the agreed norms. **ATTACH** the group norms on the wall for continued reference during the course.

### TOPIC 3. Pre-test (20 minutes)

**PLACE** numbered pieces of paper in the box. **ASK** each participant to pick a piece of paper from the box and **WRITE** his or her name at the back. **EXPLAIN** that the participants will write these numbers on the pre- and post-tests instead of their names. **COLLECT** the pieces of paper and **MAKE** a table of the names and corresponding numbers with two additional columns for pre- and post-test scores.

**DISTRIBUTE** a copy of **Annex 1. Pre-test** to each participant. **ASK** each participant to write the number from the piece of paper he or she drew from the box, date, title/designation and work area (e.g., antenatal clinic, antiretroviral therapy (ART) clinic, maternity ward) at the top of the sheet. **TELL** participants that they have 15 minutes to complete the written pre-test.

After 15 minutes, **COLLECT** the pre-test answers. **ASK** one facilitator to mark the pre-tests immediately using **Annex 3. Pre- and Post-test Answer Key**. **MAKE** a table of names and corresponding numbers with two columns, one column for the pre-test score and a second column for the post-test score. **CALCULATE** and **RECORD** the pre-test scores so that they can be used to identify where more emphasis is needed in the training.

**REVIEW** administrative and housekeeping details (start and end times and the **course timetable**).

### TOPIC 4. Comprehensive Care and NACS (10 minutes)

★ **Ask:** What do you understand by 'comprehensive care'?

**COMPARE** participants' responses with the information on **slides 0.3 and 0.4**, copied in the box below.

### Comprehensive care for people with chronic illness may include:

- HIV counselling and testing (HCT)
- Treatment of opportunistic infections and counselling on their prevention
- Monitoring of disease progression
- Counselling on adherence to treatment
- Nutrition assessment
- Nutrition counselling based on assessment results
- Prescription of specialised food products to treat malnutrition
- Counselling on positive living (safer sex, avoidance of drug and alcohol abuse)
- Treatment (e.g., ART)
- Referral to social and economic support
- Advice about orphaned children
- Advice about legal rights
- Psychological and spiritual support

**SHOW slide 0.5.** **EXPLAIN** that nutrition assessment, counselling and support (NACS) is an approach to integrating nutrition into routine health services to prevent and treat malnutrition. **EXPLAIN** that participants will learn about each of the components of NACS in this training.

### TOPIC 5. NACS Contact Points and Roles of Health Care Providers (15 minutes)

**COMPARE** responses to the information in the box below and **FILL IN** gaps as needed.

#### Contact points in the health system for nutrition interventions

- Inpatient care
- Outpatient care
- HIV counselling and testing (HCT)
- ART clinics
- Antenatal and maternal and child health (MCH) clinics
- Prevention of mother-to-child transmission of HIV (PMTCT)
- Home-based care (HBC)
- Programmes for orphans and vulnerable children (OVC)

**ASK** two or three participants what services are provided where they work and how nutrition is integrated into those services, if at all.

★ **Ask:** What role does a health care provider play in nutrition?

**REFER** participants to **Handout 0.2. Role of a Health Care Provider in NACS** (duplicated in the box below). **COMPARE** their responses with the information in the handout.

### Role of a health care provider in NACS

1. Assess, classify and record nutritional status.
2. Refer clients for medical treatment or inpatient treatment of severe acute malnutrition (SAM).
3. Provide nutrition education and counselling.
4. Prescribe specialised food products for clinically malnourished clients.
5. Collect and report on nutrition data.

**Facilitate** discussion of challenges participants might face performing these roles and possible solutions.

### TOPIC 6. Reference Materials for Nutrition Care (10 minutes)

**DISTRIBUTE** copies of the *Nutrition Guidelines for Care and Support for People with HIV*.

**SHOW** **slide 0.6**, copied in the box below. **EXPLAIN** that these guidelines standardise what should be done in all health care facilities in Zambia.

#### Objectives of the Zambia *Nutrition Guidelines for Care and Support of People with HIV*

- Promote advocacy at all levels for prevention of malnutrition.
- Mainstream nutrition into the national HIV response.
- Guide NACS services.
- Facilitate consistent professional services based on sound technical advice.
- Inform training, job aids and social and behaviour change (SBC) materials.

**DISTRIBUTE** copies of the *NACS Job Aids* and the flipchart *Eating and Living Well: Good Nutrition Makes a Difference for People Living with Illness* to participants. **EXPLAIN** that they will use these materials during the training and take them back to their workplaces to use when assessing or counselling clients.

**ASK** the questions below. **FACILITATE** discussion about how participants can use the materials in their workplaces.

1. Do any of you have these materials in your workplaces? How?
2. What challenges do you face using them?
3. Has anyone supervised you in how to use these materials?

### Discussion (5 minutes)

**ALLOW** time for questions and **DISCUSS** any issues that need clarification.

# SESSION 1. BASIC NUTRITION

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**Duration:** 2 hours

## **Purpose**

This session gives an overview of basic nutrition and eating wisely.

## **Objectives**

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

1. Define select nutrition terms.
2. Describe the conditions for good nutrition.
3. Discuss food choices to plan a mixed diet.

## **Materials**

- PowerPoint slides for Session 1
- *Nutrition Guidelines for Care and Support of People with HIV*
- *Zambia Food Composition Tables*
- **Handout 1.1. Definition of Nutrition Terms**
- **Handout 1.2. Conditions Necessary for Good Nutrition**
- **Handout 1.3. A Mixed Diet**
- **Handout 1.4. Good Eating Habits**
- **Handout 1.5. Principles of Meal Planning**
- **Worksheet 1.6. Meal Planning**

## **Advance preparation**

1. Read Annex 1. 'Macronutrients and Micronutrients Needed for Good Nutrition' and Annex 3. 'Nutritional Benefits of Zambian Foods' in the *Nutrition Guidelines for Care and Support of People with HIV*.
2. Read section 2.5. 'Ensuring Adequate Nutrient and Energy Intake' of the *Nutrition Guidelines for Care and Support of People with HIV*.
3. Review slides 1.1 to 1.10.
4. Read Handouts 1.1 to 1.5 in the *Participant Handouts*.
5. Collect examples of foods from the different food groups to take to class.

## **Review of Introductory Session (5 minutes)**

**ASK** the following questions:

1. What is the purpose of the *Nutrition Guidelines for Care and Support of People with HIV*?
2. What other job aids can health care providers use when counselling people on nutrition?

## TOPIC 1. Session Objectives (5 minutes)

**PRESENT** the session objectives on **slide 1.1** or on a flipchart.

## TOPIC 2. Definition of Nutrition Terms (30 minutes)

★ **Ask:** What is food?

**LIST** responses on a flipchart. **COMPARE** them to the information on **slide 1.2**.

★ **Ask:** What are nutrients?

**LIST** responses on a flipchart. **COMPARE** them to the information on **slide 1.3**.

★ **Ask:** What is nutrition?

**LIST** responses on a flipchart. **COMPARE** them to the information on **slide 1.4**.

★ **Ask:** What is malnutrition?

**LIST** responses on a flipchart. **COMPARE** them to the information on **slide 1.5**. **EXPLAIN** that malnutrition can be either undernutrition or overnutrition.

★ **Ask:** What is overnutrition?

**COMPARE** responses to the information on **slide 1.6**.

**REFER** participants to **Handout 1.1. Definition of Nutrition Terms**. **EXPLAIN** the different types of undernutrition and the difference between acute malnutrition and chronic malnutrition.

**Food is anything edible that provides the body with nutrients.**

### **The role of food in the body**

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

**Nutrients** are chemical components of food that are released during digestion and provide energy to maintain, repair or build body tissues. These nutrients are divided into **macronutrients** (carbohydrates, protein and fat), needed in large amounts, and **micronutrients** (vitamins and minerals), needed only in small amounts. Water is not necessarily a nutrient but serves to transport nutrients and waste products in the body.

**Nutrition** is the body's process of taking in, digesting, absorbing, transporting and using food for growth, development and health.

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

- **Undernutrition** is the result of taking in an inadequate amount or combination of nutrients to carry out needed body functions.
  - **Acute malnutrition** is caused by a decrease in food consumption and/or illness, resulting in bilateral pitting oedema or wasting. **Wasting** is defined by low mid-upper arm circumference (MUAC) or low weight-for-height z-score (WHZ).
  - **Chronic malnutrition** is caused by prolonged or repeated episodes of undernutrition starting before birth, resulting in stunting. **Stunting** is defined by low height-for-age.
  - **Micronutrient deficiencies** are a result of reduced micronutrient intake and/or absorption. The most common forms of micronutrient deficiencies are related to iron, vitamin A and iodine deficiency.
- **Overnutrition** is the result of taking in more nutrients than the body needs over time and includes overweight and obesity.

**REFER** participants to Annex 1. 'Macronutrients and Micronutrients Needed for Good Nutrition' in the *Nutrition Guidelines for Care and Support of People with HIV*. **ASK** volunteers to take turns reading the information on the following nutrients:

- Protein, carbohydrates and fats
- Vitamin A
- Vitamin C
- Iodine and zinc
- Iron

**ASK** participants to read the rest of this handout for homework to understand the relationship between nutrition and infection.

### TOPIC 3. Conditions Necessary for Good Nutrition (10 minutes)

★ **Ask:** What do people need for good nutrition?

**WRITE** responses on a flipchart. **COMPARE** them to the information on **slide 1.7**. **REFER** participants to **Handout 1.2. Conditions Necessary for Good Nutrition**, summarised in the box below. **ASK** volunteers to read the information in the handout aloud. **EXPLAIN** anything that is not clear.

#### Conditions necessary for good nutrition

1. Enough food is available (**availability**). During some seasons fruits and vegetables may be difficult to find, and people who live far from markets may not be able to buy enough food for a mixed diet.
2. Enough food is easily obtained (**accessibility**). People have resources to grow or buy and cook adequate food of good quality.
3. Enough food is eaten (**intake**). HIV-related symptoms such as loss of appetite, mouth sores, constipation, diarrhoea, nausea and vomiting, taste changes, stress and depression can reduce appetite and food absorption. People may believe that sick people should not eat certain foods, even if they are nutritious.
4. Food is digested and absorbed (**utilisation**). Food intolerance, diarrhoea, constipation and poor gut integrity can decrease nutrient digestion and absorption. Opportunistic infections, medication side effects, alcohol and lack of exercise can keep the body from metabolising the nutrients in food.
5. Unused food is excreted (**excretion**) to remove toxins and waste. Excretion is affected by water intake, organ function and medications.

### TOPIC 4. A Mixed (Balanced) Diet (30 minutes)

★ **Ask:** What is a mixed diet?

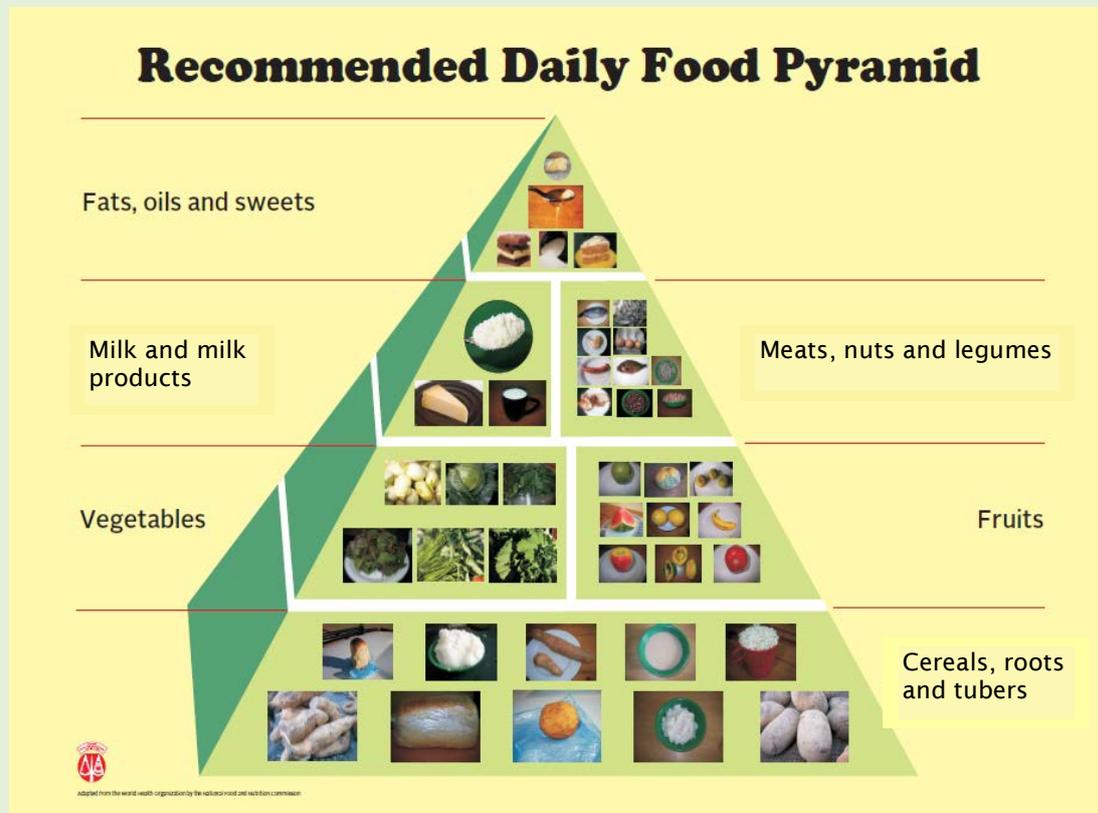
**COMPARE** responses to the information on **slide 1.8**, copied in the box below.

A **mixed diet** means eating a variety of foods from all the food groups to provide all the nutrients the body needs to function well. No single food, except breast milk for the first 6 months of life, provides all the nutrients the body needs to function well.

**EXPLAIN** that nutrition is more than eating a lot of food (**quantity**). The **quality and variety** of food is equally important to get all the different nutrients the body needs. **REFER** participants to **Handout 1.3. A Mixed (Balanced) Diet**, summarised in the box below.

## A mixed diet

A mixed diet includes a variety of foods and all the nutrients in the right amounts and combinations daily to meet the body's needs. A **food pyramid** helps people make healthy food choices by choosing from a variety of foods to get all the nutrients the body needs. A mixed meal includes at least one food from each group in the food pyramid for Zambia, copied below.



The food pyramid for Zambia divides foods into six food groups. Each food group includes foods that contains different nutrients the body needs to stay strong and healthy. The pyramid narrows from the bottom to the top to show that people should eat more of the foods from the bottom group than from the next group up and the least amount of foods from the top group.

1. **Cereals, roots and tubers** (e.g., *nshima*, bread, rice and pasta) (contain carbohydrates that provide energy ('fuel') to keep the body functioning)
2. **Fruits** (contain vitamins and minerals that protect against infection)
3. **Vegetables** (contain vitamins and minerals that protect against infection)
4. **Meat, nuts and legumes** (contain protein to make muscles and bones strong)
5. **Milk and milk products** (contain protein and calcium to make muscles and bones strong)
6. **Fats, oils and sweets** (provide extra energy but should be eaten only in small amounts)

**REFER** participants to Annex 3. 'Nutritional Benefits of Zambian Foods' in the *Nutrition Guidelines for Care and Support of People with HIV*. **POINT OUT** the nutrients in each food.

**SHOW** examples of locally available foods and **ASK** participants to identify the food groups each belongs to.

**SHOW** **slide 1.9**. **ASK** participants to use the *Zambia Food Composition Tables* to complete the exercise on the slide. **GIVE** 5 minutes for this activity. At the end of 5 minutes, **ASK** one or two groups to share their results.

## **TOPIC 5. Good Eating Habits (15 minutes)**

★ **Ask:** What are good eating habits?

**WRITE** responses on a flipchart and **COMPARE** them to the information in **Handout 1.4. Good Eating Habits**, summarised in the box below.

## Good eating habits

Having good eating habits (eating wisely) means eating a variety of foods in the right amounts and combinations to meet the body's nutrient needs.

1. Eat a variety of foods from all good groups every day to stay healthy. No single food provides all the required nutrients in the right amounts and combinations. Nutrients work as a team and need each other. The body cannot function properly if even one is missing.
2. Eat staple foods (e.g., maize, rice, tubers such as cassava) at every main meal. These foods provide mainly energy and must be combined with foods from other food groups to provide all the nutrients the body needs.
3. Eat animal-source foods (poultry, meat, fish, eggs, milk and milk products) whenever possible. These foods are needed for growth and repair, making new blood and strengthening muscles and the immune system to fight infections.
4. Eat peas, beans, lentils, nuts and seeds, if possible, every day. These foods are a cheaper source of protein than animal foods such as beef and chicken. Most of them need thorough cooking to improve digestion.
5. Eat a variety of vegetables and fruits every day to keep the body functioning well and the immune system strong. Eat vegetables and fruits of different colours (dark green, yellow, orange, purple and red). Peel fruits or wash them thoroughly before eating.
6. Eat foods fortified with essential nutrients (e.g., iodized salt, maize meal with vitamins and minerals and oil and sugar fortified with vitamin A) to improve their nutritional value. Read food labels for added nutrients and expiry dates. Do not overcook fortified foods, as this removes some of their goodness.
7. Eat only small amounts of fats, oils, sugar to improve flavor and energy intake. Adding 1–2 teaspoons of fats or sugar to foods can help them gain weight.
8. Drink plenty of clean, safe water. Water is important for life. Drink water or other fluids whenever you are thirsty and even more when it is very hot or you have diarrhea, vomiting or fever. Boil water for at least 10 minutes from when bubbles first appear or treat it with chlorine before drinking and store it in a clean container.

## TOPIC 6. Meal Planning (25 minutes)

★ **Ask:** What is meal planning?

**WRITE** responses on a flipchart and **COMPARE** them to the information in the box below.

**Meal planning** is applying knowledge of nutrient requirements and individual preferences to plan nutritious and acceptable meals and snacks for a specified period (e.g., a morning, a day, a week, or a month). It involves listing the food items needed as well as combining them into mixed meals.

**REFER** participants to **Handout 1.5. Principles of Meal Planning**. **ASK** volunteers to read each principle and **FACILITATE** discussion.

**SHOW slide 1.10**. **REFER** the groups to **Worksheet 1.6. Meal Planning** in the *Participant Handouts*. **ASK** them to read the instructions in step 1 and fill out the table with local foods from each food group. **GIVE** 5 minutes for this exercise. After 5 minutes, **ASK** participants to share their results. **COMPARE** them the examples below and **FILL IN** gaps as needed.

#### Sample foods for each food group

Food groups	Specific foods
Cereals, roots and tubers (carbohydrates)	Cereal, bread, rice, pasta, <i>tute</i> , <i>samp</i> , <i>nshima</i> , bread, macaroni, rice, <i>munkhoyo</i> , <i>kandolo</i> , cake, <i>maheu</i>
Meats, legumes and nuts, (protein)	Chicken, beef, eggs, <i>kapenta</i> , <i>ifinkubala</i> , groundnuts, <i>intojo</i> , <i>inswa</i> , <i>mbeba</i>
Milk and milk products (protein)	<i>Mabisi</i> , cheese, yogurt
Fruit (vitamins and minerals)	<i>Mponda</i> , guava, orange, apple, pineapple, <i>masuku</i> , banana
Vegetables (vitamins and minerals)	<i>Chibwabwa</i> , <i>kalembule</i> , <i>kanunkha</i> , cabbage, rape, pumpkin
Oils, fats and sweets (extra energy)	Cooking oil, butter, margarine, sugar, honey

Then **ASK** the groups to read the instructions in step 2. **ASK** each group to choose one member to write its work on a flipchart. **REFER** the groups to the food pyramid in **Handout 1.3. A Mixed Diet** for this activity. **GIVE** 15 minutes for this exercise.

After 15 minutes, **ASK** two groups to present their meal plans. **INVITE** suggestions from other groups.

#### Discussion (5 minutes)

**ALLOW** time for questions and **DISCUSS** any issues that need clarification.

## SESSION 2. NUTRITION AND INFECTION

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**Duration:** 1 hour 30 minutes

### Purpose

This session explains the link between nutrition and infection. It also introduces the Critical Nutrition Actions.

### Objectives

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

1. Describe the relationship between nutrition and infection.
2. Explain why good nutrition is important for people with infection.
3. Explain the recommended energy and nutrient intake for people with infection.
4. Describe the Critical Nutrition Actions.

### Materials

- PowerPoint slides for Session 2
- **Handout 2.1. Relationship between Nutrition and Infection**
- **Handout 2.2. Human Energy and Nutrient Requirements**
- **Handout 2.3. Critical Nutrition Actions**
- **Handout 14.1. NACS Action Plan Matrix**

### Advance preparation

1. Review Chapter 2. 'HIV and Nutrition' in the *Nutrition Guidelines for Care and Support of People with HIV*.
2. Review figure 3. 'Cycle of Poor Nutrition and Infection' and figure 4. 'The Benefits of Good Nutrition for People with HIV' in the *Nutrition Guidelines for Care and Support of People with HIV*.
3. Review slides 2.1 to 2.6.
4. Review **Handouts 2.1 to 2.3** and **Handout 14.1** in the *Participant Handouts*.

### Review of Session 1. Basic Nutrition (5 minutes)

**ASK** the following questions:

1. What is nutrition? ANSWER: *The body's process of taking in, digesting, absorbing and using nutrients for growth, development and health*
2. What is a mixed meal? ANSWER: *A meal containing a variety of foods from all the food groups*
3. What are the six food groups? ANSWER: *1) Cereals, roots and tubers, 2) Fruits, 3) Vegetables, 4) Meat, nuts and legumes, 5) Milk and milk products and 6) Fats, oils and sweets*

## TOPIC 1. Session Objectives (5 minutes)

**PRESENT** the session objectives on **slide 2.1** or on a flipchart.

## TOPIC 2. Relationship between Nutrition and Infection (20 minutes)

★ **Ask:** ‘How does infection affect nutrition? How does nutrition affect infection?’

**SHOW** **slide 2.2** and **COMPARE** responses to the information on the slide. **EXPLAIN** that undernutrition is common with some illnesses. Undernutrition and chronic infection interact in a vicious cycle that weakens the immune system. **REFER** participants to **Handout 2.1. Relationship between Nutrition and Infection**. **ASK** one volunteer to read the bullet points under ‘Poor nutrition and infection’. **FILL IN** gaps with information in the box below.

### Poor nutrition and infection

- **Poor nutrition causes:**
  - Weight loss and nutrient deficiencies
  - Weakened immune system
  - Increased vulnerability to infections
  - Decreased appetite but increased nutrient needs and malabsorption

Poor nutritional status and infections weaken the immune system and make people more vulnerable to other infections.

While infections increase energy needs, they can also reduce appetite and change the way the body uses food. This means that people with infections may not be able to eat enough to meet their increased energy needs. They may lose weight and become undernourished, which further weakens the immune system. The cycle continues.

★ **Ask:** ‘Why is good nutrition important for people with infections?’

**WRITE** responses on a flipchart and **COMPARE** them with the information on **slide 2.3**. **EXPLAIN** that there is a strong link between nutritional status and BMI, mortality and (for people with HIV) ART adherence. For people with HIV, frequent infections weaken the body and make HIV progress faster to AIDS.

**REFER** participants again to **Handout 2.1. Relationship between Nutrition and Infection**. **ASK** a volunteer to read the bullet points under ‘Good nutrition and infection’. **ADD** the information in the box below.

## Good nutrition and infection

- **Good nutrition leads to:**
  - Healthier weight
  - Stronger immune system to fight infection
  - Fewer infections with shorter duration
  - Possibly slower disease progression
  - Ability to manage symptoms of illness
  - Medicines working more effectively and with fewer side effects
  - Less risk of transmitting HIV from mother to child

**SHOW** **slide 2.4** and **GO OVER** the cycle of good nutrition and infection.

## TOPIC 3. Nutritional Requirements (20 minutes)

**SHOW** **slide 2.5**. **POINT OUT** the energy requirements of adults and additional energy requirements of adults with HIV. **MAKE SURE** participants understand the difference between 'symptomatic' and 'asymptomatic'.

**SHOW** **slide 2.6**. **POINT OUT** the energy requirements of school-age children, including children with HIV.

**REFER** participants to **Handout 2.2. Human Energy and Nutrient Requirements**. **EXPLAIN** that they can use this handout to counsel clients on what to eat to prevent or recover from infections.

## TOPIC 4. Critical Nutrition Actions (30 minutes)

**ASK** participants to read **Handout 2.3. Critical Nutrition Actions**. **FACILITATE** discussion on whether people can follow all the Critical Nutrition Actions (CNAs) in their areas and if not, why not. Then **ASK** what can be done to improve the situation.

**REFER** participants to **NACS Job Aid 1. How to Prevent Malnutrition**, which also lists the CNAs. **EXPLAIN** that they can use this job aid to choose appropriate counselling messages.

## TOPIC 5. Introduction to Action Planning (5 minutes)

**EXPLAIN** that participants from each health facility will work together to finish their 6-month action plans for how they will apply the information from this training to their work.

**REFER** participants to **Handout 14.1. NACS Action Plan Matrix**. **GO OVER** each of the headings. **ASK** participants to begin thinking about how to apply the information in this training to their work.

## Discussion (5 minutes)

**ALLOW** time for questions and discuss any issues that need clarification.

## SESSION 3. NUTRITION ASSESSMENT

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**Duration:** 4½ hours

### Purpose

This session gives participants the knowledge and skills to do anthropometric, clinical and dietary assessment and to interpret the results to classify nutritional status.

### Objectives

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

1. Explain why nutrition assessment is important.
2. List the types of nutrition assessment.
3. Do accurate anthropometric assessment.
4. Identify signs of malnutrition.
5. Do simple dietary assessment.
6. Interpret the results of various assessments to classify nutritional status.

### Materials

- PowerPoint slides for Session 3
- At least four functioning Seca scales
- At least four functioning height boards or height metres
- At least four functioning length boards
- Non-stretchable measuring tape
- Set of MUAC tapes for each participant
- BMI wheel for each participant
- *Nutrition Guidelines for Care and Support of People with HIV*
- NACS Job Aids
- **Handout 3.1. Anthropometric Indicators**
- **Handout 3.2. Measuring Weight**
- **Handout 3.3. Measuring Length and Height**
- **Handout 3.4. Measuring Mid-Upper Arm Circumference (MUAC)**
- **Handout 3.5. Finding Weight-for-Height Z-Score (WHZ) for Children 6–59 Months**
- **Handout 3.6. Finding Body Mass Index (BMI) for Adults**
- **Handout 3.7. Finding BMI-for-Age for Children and Adolescents 5–14 Years**
- **Handout 3.8. Classification of Nutritional Status**
- **Handout 3.9. Clinical Nutrition Assessment**
- **Handout 3.10. Checking for Bilateral Pitting Oedema**
- **Handout 3.11. Giving an Appetite Test**
- **Handout 3.12. Biochemical Assessment**
- **Handout 3.13. Dietary Assessment**
- **Annex 4. Z-Scores**

## Advance preparation

1. Review slides 3.1 to 3.16.
2. Review Handouts 3.1 to 3.13 in the *Participant Handouts*.
3. Review Annex 4. Z-Scores.
4. Collect weighing scales, height boards or height metres, MUAC tapes and BMI wheels to take to class. If the scale is electronic, make sure it has working batteries or a power source.
5. Set up a space in the training venue to do anthropometric assessment.
6. Be familiar with the cutoff points for classification of nutritional status using different measurements.
7. Practice using the WHZ, BMI and BMI-for-age charts and BMI wheel.
8. If possible, arrange for a baby and/or young child to come to the training for the weighing practice.

## Review of Session 2. Nutrition and Infection (5 minutes)

**ASK** the following questions:

1. Why is good nutrition important for people with infection? **ANSWER:**  
*Infections deplete energy and nutrients. Good nutrition helps resist infections and reduce their frequency and duration, helps maintain healthy weight, helps manage symptoms, helps medicines work and reduces side effects, may reduce the risk of mother-to-child transmission of HIV and may delay progression of HIV to AIDS.*
2. How much more energy do people *with* HIV-related symptoms need than people without HIV?  
**ANSWER:** *20–30 percent extra*
3. How much more energy do HIV-positive children who have symptoms and are losing weight need than uninfected children of the same age and sex? **ANSWER:** *50–100 percent extra*
4. What are the Critical Nutrition Actions?
  - *Eat a variety of nutritious foods.*
  - *Maintain good hygiene and sanitation.*
  - *Practice positive living.*
  - *Get regular exercise.*
  - *Drink plenty of clean, safe water.*
  - *Seek prompt treatment for all infections and manage symptoms through diet.*
  - *Manage medication-food interactions through diet.*

## TOPIC 1. Session Objectives (5 minutes)

**PRESENT** the session objectives on **slide 3.1** or on a flipchart.

## TOPIC 2. Importance of Nutrition Assessment (15 minutes)

★ **Ask:** 'What is nutrition assessment?'

**COMPARE** responses to the definition: *Nutrition assessment is gathering, analysing, interpreting and using information from objective measurements to determine clients' nutritional status.*

★ **Ask:** 'What kinds of nutrition assessment do is done in your workplaces?'

**FACILITATE** discussion. If some participants say they do not do dietary assessment, **ASK** why.

★ **Ask:** 'Why is nutrition assessment important for people with infections?'

**COMPARE** responses to the information in the box below and **FACILITATE** discussion.

### **Nutrition assessment is important for people with infections because:**

- Some people with infections such as HIV have increased energy needs and symptoms that can decrease appetite or nutrient absorption, leading to wasting. Because they have weakened immune systems, they are vulnerable to infections that can lead to malnutrition.
- Nutritional status is a sensitive indicator of health and well-being. It helps identify problems early for quick action.
- Nutrition assessment helps determine what nutrition interventions clients need, such as diet changes, specialised food products, medical treatment or referral for further assessment.
- Nutrition assessment measures changes in nutritional status to monitor progress.

**SHOW** **slide 3.2**. **EXPLAIN** that participants will learn how to do four types of nutrition assessment in this course. **EXPLAIN** that they can remember the different types of nutrition assessment by the letters A, B, C, D.

## TOPIC 3. Anthropometric Assessment (2½ hours)

★ **Ask:** 'What is anthropometry?'

**COMPARE** responses to the definition: *Anthropometry is the measurement of the size, proportions and composition of the human body.*

★ **Ask:** 'What anthropometric measurements do you know?'

**COMPARE** responses to the ANSWERS (any are correct): *Height, weight, head circumference, waist circumference, skin fold thickness and MUAC.*

**EXPLAIN** that some anthropometric indicators are written as indexes. These are not simple measurements, but should be calculated based on measurements, for example, weight-for-height.

**REFER** participants to **Handout 3.1 Anthropometric Indicators**, copied below. **ASK** one participant to read the indicators aloud.

### Handout 3.1. Anthropometric Indicators

Indicator	Definition/measurement	Use
Birth weight	Weight at which a baby is born	An indicator of maternal nutrition and health that affects infant health and development. Low birth weight (< 2,500 grammes [g]) increases the risk of illness and death.
Body mass index (BMI)	Weight in kilogrammes (kg) divided by height in square metres (m <sup>2</sup> ) (kg/m <sup>2</sup> ),	Mainly used for non-pregnant adults. For pregnant/postpartum women, use MUAC instead.
Head circumference	Measurement around the head	A measure of brain development in the first 2 years of life
Height-for-age z-score (HAZ)	Length or height compared to the height of a child of the same age and sex from a reference population for age	Inadequate HAZ indicates <b>stunting</b> , an indicator of chronic malnutrition in children under 5
Mid-upper arm circumference (MUAC)	Measurement around the upper left arm (for right-handed people) midway between the tip of the shoulder and the top of the elbow	A measure of nutritional adequacy that can be used for all population groups and should be used for pregnant/postpartum women and clients whose weight and height cannot be taken
Weight-for-age z-score (WAZ)	Weight compared to the weight of a child of the same age and sex from a reference population	Inadequate WAZ indicates <b>underweight</b> , an indicator of both chronic and acute malnutrition.
Weight-for-height z-score (WHZ)	Weight compared to the weight of a child of the same height from a reference population	Inadequate WHZ identifies <b>wasting</b> , an indicator of acute malnutrition

**SHOW** **slide 3.3**. **POINT OUT** the different kinds of anthropometric assessment. **EXPLAIN** that participants will learn in this course how to do all of these assessments except for birth weight and head circumference.

## Weight

**SHOW** participants different scales for weighing adults and children. **REFER** participants to **Handout 3.2. Measuring Weight**. **GO OVER** the sections on how to weigh infants and young children, copied in the boxes below.

- To turn on the scale, carefully turn it over so that the base is accessible. Press the closure of the battery compartment in the direction of the cover itself to open it. Insert the supplied batteries and check that they are inserted in correct direction. Close the cover and turn the scale back up the right way. Push the switch to the 'On' position.
- Handle the scale carefully:
- Do not drop or bump the scale.
- Do not weigh loads totalling more than 150 kg.
- Protect the scale from excess moisture or humidity.

### How to weigh babies using a mother/baby (Seca) scale

- Place the scale on a hard, level surface (wood, concrete or firm ground). Soft or uneven surfaces may cause small errors in weighing.
- Ask the mother or another adult helper to stand still in the middle of the scale, feet slightly apart (on the foot prints, if marked).
- With the mother or helper still on the scale and her weight displayed, press the two-in-one button. The scale will display 00.0
- Hand the baby to the mother or another adult helper.
- The baby's weight will appear on the display to the nearest 0.1kg. Record this weight as the weight of the baby on the child's clinic card, client file and appropriate register.

If there is a baby or child in the class, **DEMONSTRATE** how to weigh them using a Seca scale. Then **ASK** one or two participants to practice weighing them.

### How to weigh older children, adolescents and adults using a Seca scale

- Place the scale on a hard, level surface.
- Ask the client to take off shoes, hat, scarf and head wrap and remove everything from pockets.
- Ask the client to stand straight and unassisted on the centre of the scale.
- Stand in front of the scale to read the measurement.
- Record the weight to the nearest 100 g in the client's file, client card and appropriate register.

## Salter scale

### How to weigh children under 5 using a Salter scale

- Hook the scale with a rope to any firm support such as a roof beam, tree branch, tripod or stick held horizontally by two poles. The face of the scale should be at eye level.
- Attach the weighing pants to the lower hook of the scale.
- Zero the scale (make sure the arrow is pointing to zero).
- Remove the weighing pants.
- Undress the child, leaving only minimal clothing, and place him or her in the weighing pants.



### How to weigh babies using a beam balance scale

- Weigh babies with no clothes or minimal clothing.
- If using a cushion (e.g., a towel or diaper) in the pan, first weigh the cushion and then subtract its weight from the baby's weight.
- Lift the large weight on the lower bar gently and move it slowly to the right.
- Watch the arrow on the right end of the beam balance and stop moving the weight when the arrow falls downward.
- Move the weight back toward the left one notch, which will cause the arrow to move upward.
- Move the smaller weight on the upper bar slowly to the right and stop when the arrow is level.
- Add the numbers shown in the opening or by tiny arrows on both weights to find the client's weight.
- Move both weights back to the left and ask the client to step off the scale.
- Read the weight to the nearest 100 g (0.1 kg) and record it immediately in the child's file, client card and appropriate register.
- If the baby moves too much to get an accurate weight, try again.



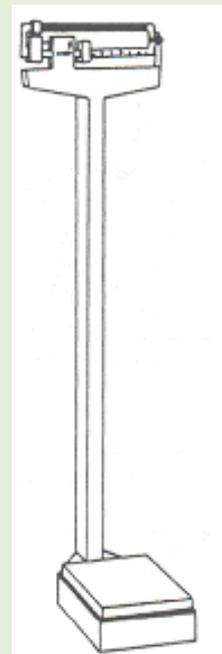
**REFER** participants again to **Handout 3.2. Measuring Weight**. **GO OVER** the sections on how to weigh adults, copied in the boxes below.

### How to weigh adults using a Seca scale

- Place the scale on a hard, level surface (wood floor, concrete or hard ground). Soft or uneven surfaces may cause small errors in weighing.
- Carefully turn over the scale so the base is accessible.
- Open the battery compartment by pressing the closure in the direction of the cover.
- Insert the supplied batteries into the battery compartment.
- Check that the batteries are inserted in the correct direction.
- Close the cover and turn the scale back up the right way.
- To activate the power supply, push the switch to the “On” position.
- Re-zero the scale.
- Ask the client to take off shoes, hat, scarf and head wrap and remove everything from pockets.
- Ask the client to stand straight and unassisted on the centre of the scale.
- Stand in front of the scale to read the measurement.
- Record the weight to the nearest 100 g in the client’s file, client card and appropriate register.
- nearest 100 g in the client’s file, client card and appropriate register.

### How to weigh adults using a beam balance scale

- Make sure the scale is on a flat, hard surface.
- Ask the client to remove any jacket, scarf, hat or head wrap and to remove anything from her/his pockets.
- Ask the client to stand still in the middle of the scale’s platform without touching anything and with her/his weight equally distributed on both feet.
- Lift the large weight on the lower bar gently and move it slowly to the right.
- Watch the arrow on the right end of the beam balance and stop moving the weight when the arrow falls downward.
- Move the weight back toward the left one notch, which will cause the arrow to move upward.
- Move the smaller weight on the upper bar slowly to the right and stop when the arrow is level.
- Add the numbers shown in the opening or by tiny arrows on both weights to find the client’s weight.
- Move both weights back to the left and ask the client to step off the scale.
- Read the weight to the nearest 100 g (0.1 kg) and record it immediately in the client’s file, client card and appropriate register.



**ASK** a volunteer to come to the front of the class. **DEMONSTRATE** how to zero the Seca scale and weigh the volunteer, saying aloud each step and the weight. Then **DEMONSTRATE** how to zero the balance beam scale, if available, and **WEIGH** the volunteer, saying aloud each step and the weight.

**ASK** participants to form their working groups. Then **ASK** the group members to take turns weighing each other. One group member should record the weights of the all the group members on a flipchart.

**EXPLAIN** that participants will use a Seca scale when they visit a health facility during the training.

### Length and height

**REFER** participants to **Handout 3.3. Measuring Length and Height**. **EXPLAIN** that children are measured using a length board if they are younger than 24 months or under 87 cm long or if they cannot stand erect without assistance. **SHOW** a length board. **POINT OUT** the stationary headboard and moveable footboard. **GO OVER** the section in the handout on how to measure children under 87 cm long, copied in the box below.

#### How to measure length for children younger than 24 months or under 87 cm long

- Two people are needed (one can be an assistant or the child's mother) to measure a child's length.
- Place the length board horizontally on a flat, level surface.
- Remove the child's shoes and any head covering.
- Place the child lying down and face up in the middle of the board with arms at the sides.
- One person should gently hold the child's head and position it against the headboard (with the hair compressed).
- Another person should gently press down the child's knees so that the legs are straight. The soles of the feet should be flat on the footboard, pointing up at right angles.
- Keep the child's feet in contact with the footboard with one hand while holding the footboard securely in place with the other hand.
- Read the length aloud to the nearest 0.1 cm and record it in the client file, client card and appropriate register.

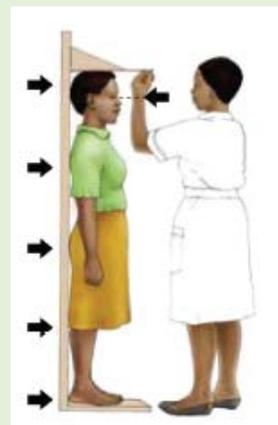
If there is a child younger than 24 months in the classroom, demonstrate how to measure length using a length board.

**EXPLAIN** that children older than 24 months and over 87 cm tall are measured with a height metre, height board or non-stretchable tape measure fastened securely to a wall. **SHOW** a height metre, height board and a non-stretchable measuring tape.

**REFER** participants again to **Handout 3.3. Measuring Length and Height**. **GO OVER** the section in the handout on how to measure children older than 24 months or over 87 cm long, copied in the box below.

### How to measure height for children older than 24 months or over 87 cm tall

- Two people are needed (one can be an assistant or the child's mother). Use a height board or fasten a non-stretchable tape measure securely to a wall.
- If using a height board, place it vertically on a stable, level surface on a floor that is not carpeted and against a flat, smooth surface such as a wall.
- If using a tape measure, attach the end with the highest measurement to a flat wall so that the end with the lowest measurement just touches the floor. Let the tape hang down straight on its own before attaching the end with the lowest measurement to the bottom of the wall.
- Ask the caregiver or client to remove the client's shoes and headwear.
- Ask the client to stand with feet flat, together and against the height board or wall.
- Make sure the client is looking straight ahead, with head, shoulders, buttocks and heels touching the board.
- Ask the client to stand straight and tall and look straight ahead.
- Lower the moveable head piece until it firmly touches the crown of the client's head.
- With your eyes at the same level as the headpiece, read the measurement aloud to the nearest 0.1 cm.
- Record the height accurately in the client's file, client card and appropriate register.



**DEMONSTRATE** how to measure height. One facilitator should **READ** aloud the instruction for each step.

Then **ASK** participants to work in their groups to measure each other's height using both a height metre and a height board (if both are available) and to record the results on the flipchart next to the weights from the weighing activity.

### Mid-upper arm circumference (MUAC)

**EXPLAIN** that MUAC can be used to assess nutritional status for anyone older than 6 months, but it is the **only** reliable way to find the nutritional status of pregnant and postpartum women. This is because women who are pregnant or postpartum gain weight because they are or were pregnant, not because they are overweight. MUAC is also useful for clients whose weight and height cannot be measured, such as bedridden clients.

**ASK** participants to look at the MUAC tapes for children and adults. **POINT OUT** the end of the tape, the window at the top and the centimetre markings.

**REFER** participants to **Handout 3.4. Measuring Mid-Upper Arm Circumference (MUAC)**, summarised in the box below.

### How to measure MUAC

1. Measure MUAC on the left arm for right-handed people and on the right arm for left-handed people.
2. Ask the client to bend his or her arm at a 90° angle.
3. Find the top of the shoulder and the tip of the elbow.
4. Keep the tape at eye level and place it at the top of the shoulder. Put your right thumb on the tape where it meets the tip of the elbow (endpoint).
5. Find the middle of the upper arm by carefully folding the endpoint to the top edge of the tape. Place your left thumb on the place where the tape folds (midpoint). If using a tape measure, determine the mid-point by measuring the distance between the top of the shoulder and the tip of the elbow.
6. Mark the mid-point with chalk or a pen. Make sure the tape is not twisted and is parallel to where the marking was placed.
7. Straighten the client's arm (unless the client is disabled) so that it is hanging loosely and comfortably at the side and wrap the tape around the mid-point.
8. Put the end of the tape through the window and correct the tension.
9. Record the measurement to the nearest 0.1 cm.

**DEMONSTRATE** how to measure MUAC for one participant whose weight and height was already measured. **ASK** the groups to follow the steps in **Handout 3.4. Measuring Mid-Upper Arm Circumference (MUAC)** to measure each other's MUAC and **WRITE** the results on the flipchart. **GUIDE** participants in measuring MUAC correctly.

★ **Ask:** 'What is nutritional status?'

**COMPARE** responses to the definition: *Nutritional status is the result of how the body responds to nutrients consumed in food.*

**SHOW** **slide 3.4** and go over the different classifications of nutritional status, copied below.

### Classifications of nutritional status

- Severe acute malnutrition (SAM) with no appetite or with medical complications
- SAM with appetite and no medical complications
- Moderate acute malnutrition (MAM)
- Normal
- Overweight
- Obesity

**REFER** the groups again to **Handout 3.4. Measuring Mid-Upper Arm Circumference (MUAC)**. **EXPLAIN** that the chart, copied below, shows cutoffs for classification of nutritional status using MUAC. **EXPLAIN** that there are no MUAC cutoffs for overweight and obesity.

### MUAC cutoffs for classification of nutritional status

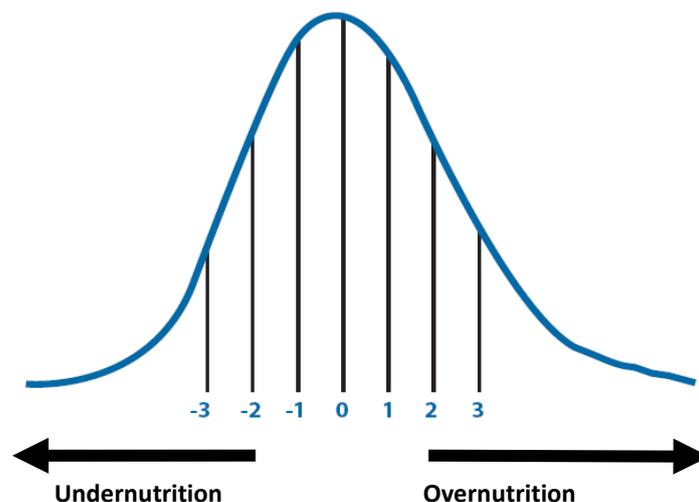
Group	Severe acute malnutrition (SAM)	Moderate acute malnutrition (MAM)	Normal
Children 6–59 months	< 11.5 cm	≥ 11.5 to < 12.5 cm	≥ 12.5 cm
Children 5–9 years	< 13.5 cm	≥ 13.5 to < 14.5 cm	≥ 14.5 cm
Children 10–14 years	< 16.0 cm	≥ 16.0 to < 18.5 cm	≥ 18.5 cm
Adults (non-pregnant/postpartum)	< 18.5 cm	≥ 18.5 to < 21.0 cm	≥ 21 cm
Pregnant/postpartum women	< 21.0 cm	≥ 21.0 to < 23.0 cm	≥ 23.0 cm

### Anthropometric indices

**EXPLAIN** that some anthropometric measurements are combined to calculate anthropometric indices. In adults, the most commonly used anthropometric index is BMI. In children, the most commonly used anthropometric indices are weight-for-height, height-for-age, weight-for-age and BMI-for-age.

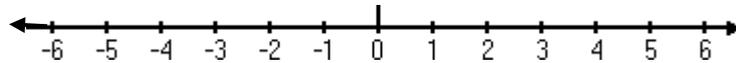
**EXPLAIN** that anthropometric indices for children are calculated as z-scores. Z-scores are measured in standard deviations (SD), which describe how far and in what direction a measurement differs from the median (middle number). Annex 4 describes z-scores in more detail.

**SHOW** **slide 3.5**. Ask participants to look at the curving line, which is called a bell curve.



**POINT OUT** the 0 at the bottom of the bell curve. **EXPLAIN** that this is the median. **POINT OUT** the arrows pointing to the left and right of the median. **EXPLAIN** that measurements lower than the median have minus signs, and measurements higher than the median have plus signs or no signs. The further a measurement is from 0 on either side, the greater the risk of malnutrition.

Then **ASK** participants to look at the number line (shown below and on the slide).



**EXPLAIN** that the arrow points right to show that the numbers are getting bigger and points left to show that the numbers are getting smaller. **ASK** which is bigger,  $-5$  or  $-4$  (ANSWER:  $-4$  is bigger than  $-5$ .)

### Weight-for-height z-score (WHZ)

**EXPLAIN** that nutritional status for children under 5 can be measured by comparing weight and height.

**REFER** participants to **Handout 3.5. Finding Weight-for-Height Z-Score (WHZ) for Children 6–59 Months**. **EXPLAIN** that weight-for-height z-score, written as ‘WHZ’ compares a child’s weight to the weight of a child of the same length/height and sex of the reference population. **ASK** participants to look at the WHZ cutoffs, copied below).

#### WHZ cutoffs for classification of nutritional status

$< -3$	$\geq -3$ to $< -2$	$\geq -2$ to $< +2$	$\geq +2$ to $< +3$	$\geq +3$
Severe acute malnutrition (SAM)	Moderate acute malnutrition (MAM)	Normal	Overweight	Obesity
Undernutrition			Overnutrition	

**WRITE** the symbols  $<$  (less than),  $>$  (greater than),  $\leq$  (less than or equal to) and  $\geq$  (greater than or equal to) on a flipchart. **EXPLAIN** what they mean.

**COMPARE** the WHZ cutoffs table to the number line on **slide 3.5**. **POINT OUT** the different classifications of nutritional status. **POINT OUT** that the negative measurements are to the left of the median and the positive measurements are to the right.

**ASK** the groups to look at the two charts at the end of **Handout 3.5. Finding Weight-for-Height Z-Score (WHZ) for Children 6–59 Months**. **POINT OUT** that there is one chart for length for children 6–23 months and one for height for children 24–59 months. **EXPLAIN** that the left-hand column shows length or height in cm.

**EXPLAIN** how to use the WHZ chart to find BMI (see the box below).

### How to find WHZ using a WHZ chart

10. Find the correct table for the child's age (6–23 months or 24–59 months) and sex (boy or girl).
11. Find the figure closest to the child's length/height in the left column.
12. If the child's length or height falls between two numbers, round up or down. For example, if the length is 45.2 cm, round down to 45. If the length is 45.6 cm, round up to 46.
13. Move your finger to the right to find the child's weight.
14. Look at the top of that column to find the child's nutritional status.

**SHOW** the sample weights and lengths/heights on **slide 3.6** (CLICK only once).

**REFER** the groups again to **Handout 3.5. Finding Weight-for-Height Z-Score (WHZ) for Children 6–59 Months**. **ASK** them to use the WHZ cutoffs to find the z-scores for the children on the slide and classify their nutritional status. **GIVE** 5 minutes for this exercise.

After 5 minutes, **CLICK** again on **slide 3.6** to show the correct answers. **ASK** if any participants got different answers. If so, **EXPLAIN** how to find the correct answers.

Then **ASK** the groups to fill in the WHZ and nutritional status for the children in the chart at the end of **Handout 3.5. Finding Weight-for-Height Z-Score (WHZ) for Children 6–59 Months**. **GIVE** 5 minutes for this exercise. At the end of 5 minutes, **ASK** the groups to share their results. **SHOW** **slide 3.7** with the **ANSWERS**, shaded in the table below.

### Exercise: Finding WHZ

ID	Sex	Age (months)	Height (cm)	Weight (kg)	WHZ	Nutritional status
1	F	35	98.2	11.5	$\geq -3$ to $< -2$	MAM
2	M	52	99.5	13.5	$\geq -2$ to $\leq +2$	Normal
3	M	9	69.9	7.5	$\geq -2$ to $\leq +2$	Normal
4	F	8	68.2	5.0	$< -3$	SAM
5	M	28	97.2	11.9	$\geq -3$ to $< -2$	MAM
6	M	25	89.7	12.9	$\geq -2$ to $\leq +2$	Normal

### Body mass index (BMI) for adults

**EXPLAIN** that BMI is measured for adolescents 15–17 years and adults (non-pregnant/postpartum). BMI should not be used for women who are pregnant or up to 6 months postpartum. They should be measured using MUAC.

**WRITE** the formula below on a flipchart visible to all the participants. **EXPLAIN** that BMI is calculated by dividing weight in kilogrammes (kg) by height in metres squared (m<sup>2</sup>) (BMI = kg/m<sup>2</sup>). **POINT OUT** that height measured in centimetres should be converted into metres.

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

**EXPLAIN** that participants can find BMI using either a BMI wheel or a BMI chart without having to do a mathematical calculation.

### Finding BMI using a BMI chart

**REFER** participants to **Handout 3.6 Finding Body Mass Index (BMI) for Adults**. **EXPLAIN** how to use the chart to find BMI (see the box below).

#### How to find BMI using a BMI chart

1. Find height in the left-hand column, or y axis (1 metre [m] = 100 cm).
2. Find weight in the bottom row, or x axis.
3. Find the point where the two lines meet. This is the BMI for that height and weight.
4. Classify the client's nutritional status according to the ranges below.

Severe acute malnutrition (BMI < 16.0)

Moderate acute malnutrition (BMI ≥ 16.0 to < 18.5)

Normal (BMI ≥ 18.5 to < 25.0)

Overweight (BMI ≥ 25.0 to < 30.0)

Obesity (BMI ≥ 30.0)

**EXPLAIN** that anyone whose weight and height fall outside the chart should be classified as the nearest nutritional status (e.g., SAM or obese).

BMI = Weight ÷ height (m<sup>2</sup>)

1. Find height in the left-hand column (y axis).
2. Find weight in the bottom row (x axis).
3. The point where the two lines meet is the BMI.

- Red shows SAM (BMI < 16.0).
- Yellow shows MAM (BMI ≥ 16.0 to < 18.5).
- Green shows adequate weight for height (BMI 18.5–24.9).
- Light purple shows overweight (BMI 25.0–29.9).
- Purple shows obesity (BMI > 30).

Height (m)	8	9	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	
200	8	9	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	
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146	15	16	17	18	19	20	21	22	23	23	24	25	26	27	28	29	31	32	33	34	35	35	35	36	37	38	39	40	41	42	43	43	44	45	46	46	47	48	49	50	51	52	53	53
144	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	36	37	38	39	40	41	42	43	43	44	45	46	46	47	48	49	50	51	52	53	54	54
Wt (kg)	32	34	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	

**POINT OUT** the BMI cutoffs, copied below, for classification of nutritional status in **Handout 3.6. Finding Body Mass Index (BMI) for Adults.**

**BMI cutoffs for classification of nutritional status**

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

**ASK** the groups to use these cutoffs to find the nutritional status of the group members whose weights and heights they wrote on the flipchart. They should write the corresponding BMIs on the same flipchart. **GIVE** 5 minutes for this activity. After 5 minutes, **ASK** participants to share their results.

**Finding BMI using a BMI wheel**

**ASK** participants to look at their BMI wheels. **EXPLAIN** that BMI for adults is found on the front side of the wheel, where they see the word 'Instructions'. The inner/smaller disc shows height. The outer/larger disc shows weight. **EXPLAIN** how to use a BMI wheel to find BMI (see the box below).

**How to find BMI using a BMI wheel**

1. Turn the top disc until the client's height is aligned with the client's weight.
2. On the outer disc, read the number that the arrow labelled 'BMI' is pointing to.
3. Look at the box at the bottom of the wheel labelled 'Nutritional status for adults 19 years and older'. Find the range that contains the client's BMI and classify the client's nutritional status.

**CLICK** once on **slide 3.8** with sample weights and heights for two clients. **ASK** participants to use their BMI wheels to find the BMI and nutritional status of the clients. **GIVE** a few minutes for this exercise.

After a few minutes, **CLICK** again on **slide 3.8**. **ASK** participants to compare their results to the ANSWERS on the slide.

Then **ASK** the groups to use the BMI chart or BMI wheel to complete the last two columns in the table at the end of **Handout 3.6. Finding Body Mass Index (BMI) for Adults**. **GIVE** 5 minutes for this exercise.

After 5 minutes, **ASK** one or two groups to present their answers in plenary and **EXPLAIN** how they found the answers. **CLICK** on **slide 3.9** to **COMPARE** the participants' results with the correct ANSWERS, shaded in the table below.

### Exercise: Finding BMI

ID	Sex	Height (cm)	Weight (kg)	BMI	Nutritional status
1	F	178	50	15.8	SAM
2	M	190	68	19	Normal
3	M	176	48	15	SAM
4	F	156	102	42	Obesity
5	M	160	38	15	SAM
6	M	174	84	28	Overweight

**ASK** the groups to discuss any difficulties they had finding BMI on the chart.

### BMI-for-age for children and adolescents

**EXPLAIN** that for adults, BMI can be used as an indicator of nutritional status because most people over 18 years have completed their physical development. But children over 5 years of age and adolescents are still growing and developing. Therefore, their age and sex need to be considered when using BMI to classify their nutritional status. BMI-for-age can be used to classify the nutritional status of children and adolescents 5–14 years.

**EXPLAIN** that BMI-for-age is measured in z-scores, like weight-for-height. A BMI-for-age z-score tells exactly how many standard deviations an individual's BMI is away from the median BMI value of the reference population. BMI-for-age can be found using either a BMI wheel or BMI and BMI-for-age tables.

### Finding BMI-for-age using a BMI-for-age table

**REFER** participants to **Handout 3.7. Finding BMI-for-Age for Children and Adolescents 5–14 Years** and **REVIEW** the steps in the table below.

#### How to find BMI-for-age using a BMI-for-age table

1. Find the client's BMI.
2. Locate the BMI on a BMI-for-age chart. In **Job Aid 7. BMI and BMI-for-age (5–14 Years)** in the *NACS Job Aids*, the first three pages are BMI tables for children 5–14 years, divided according to height.
3. Find the client's height in the vertical column on the left (y) axis of the chart.
4. Then find the client's weight in the horizontal column on the bottom (x) axis. BMI is the place where the height and weight cross.
5. Use the BMI-for-age table to find the client's age in the left-hand column. Round off the age to the nearest 6 months (for example, 6.0 for a child 6 years and 2 months old and 6.6 for a child 6 years and 7 months old).
6. Move your fingers t across from left to right to find the client's BMI. Nutritional status is indicated in the label in the top row and the colour of the columns.

## Finding BMI-for-age using a BMI wheel

### How to find BMI-for-age using a BMI wheel

1. Use the instructions on the front side of the wheel to find the child's BMI.
2. Flip the wheel over. Turn the inner disc until the arrow labelled 'age' points to the age closest to the child's age. Round up or down if needed. For example, if a child is 9 years and 5 months, point the arrow to 9. If a child is 9 years and 6 months, point the arrow to 10.
3. Select the box on the back side of the wheel labelled 'Girls' or 'Boys' based on the sex of the child.
4. With the wheel still pointing to the child's age, find the number range in the box (Girl Boys) that contains the child's BMI. Classify the child's nutritional status based on the range in which the child's BMI falls

**POINT OUT** the BMI-for-age cutoffs for classification of nutritional status in **Handout 3.7. Finding BMI-for-Age for Children and Adolescents 5–14 Years.**

### BMI-for-age cutoffs for classification of nutritional status

Group	Severe acute malnutrition (SAM)	Moderate acute malnutrition (MAM)	Normal	Overweight	Obesity
Children and adolescents 5–14 years	< -3	≥ -3 and < -2	≥ -2 and < +1	≥ +1 to < +2	≥ +2

**ASK** participants to use **NACS Job Aid 7** or the BMI wheel to complete the exercise at the end of **Handout 3.7. Finding BMI-for-Age for Children and Adolescents 5–14 Years** (copied below). **GIVE** 5–10 minutes for this activity. When participants have finished, **ASK** them to present their results. **SHOW** **slide 3.10** with the correct ANSWERS, shaded in the table. **ASK** participants to write the correct answers in the table in the *Participant Handouts*.

### Exercise: Finding BMI-for-age

ID	Sex	Age (years, months)	Height (cm)	Weight (kg)	BMI	BMI-for-age/nutritional status
1	F	6 years, 2 months	111	18.8	15.4	Normal
2	M	11 years, 3 months	130	23.0	13.6	MAM
3	F	13 years, 7 months	145	38.0	18.1	Normal
4	M	8 years, 4 months	125	19.0	12.2	SAM

**REFER** participants to **Handout 3.8. Classification of Nutritional Status**, copied below. **POINT OUT** the sections with cutoffs for children, older adolescents, non-pregnant/postpartum adults and pregnant/postpartum women. **EXPLAIN** that participants can use this handout to find the nutritional status of any client using any anthropometric measurement.

### Classification of nutritional status

Severe acute malnutrition (SAM)	Moderate acute malnutrition (MAM)	Normal	Overweight	Obesity
<b>Children</b>				
Bilateral pitting oedema <b>OR</b> Severe visible wasting <b>OR</b> WHZ or BMI-for-age < -3 <b>OR</b> MUAC 6–59 months: < 11.5 cm 5–9 years: < 13.5 cm 10–14 years: < 16.0 cm	Confirmed weight loss > 5% since last visit <b>OR</b> Growth curve flattening <b>OR</b> WHZ or BMI-for-age ≥ -3 to < -2 <b>OR</b> MUAC 6–59 months: ≥ 11.5 to < 12.5 cm 5–9 years: ≥ 13.5 to < 14.5 cm 10–14 years: ≥ 16.0 to < 18.5 cm	WHZ ≥ -2 to ≤ +2 <b>OR</b> BMI-for-age ≥ -2 to ≤ +1 <b>OR</b> MUAC 6–59 months: ≥ 12.5 cm 5–9 years: ≥ 14.5 cm 10–14 years: ≥ 18.5 cm	WHZ > +2 to < +3 <b>OR</b> BMI-for-age > +1 to ≤ +2	WHZ ≥ +3 <b>OR</b> BMI-for-age > +2
<b>Older adolescents and adults (non-pregnant/postpartum)</b>				
Bilateral pitting oedema <b>OR</b> BMI-for-age < -3 <b>OR</b> BMI < 16.0 <b>OR</b> MUAC < 18.5 cm	BMI ≥ 16.0 to < 18.5 <b>OR</b> BMI-for-age ≥ -3 to < -2 <b>OR</b> MUAC ≥ 18.5 to < 21.0 cm	BMI ≥ 18.5 to < 25.0 <b>OR</b> BMI-for-age ≥ -2 to ≤ +1 <b>OR</b> MUAC ≥ 21.0 cm	BMI ≥ 25.0 to < 30.0 <b>OR</b> BMI-for-age > +2	BMI ≥ 30.0 <b>OR</b> BMI-for-age > +2
<b>Pregnant and postpartum women</b>				
MUAC < 21.0 cm	MUAC ≥ 21.0 to < 23.0 cm	≥ 23.0 cm		

### TOPIC 4. Clinical Nutrition Assessment (40 minutes)

**SHOW** **slide 3.11**. **EXPLAIN** that clinical nutrition assessment includes looking for signs or symptoms of nutritional deficiencies and asking clients about symptoms or medications that can affect nutritional status.

★ **Ask:** ‘What are some signs of malnutrition?’

**COMPARE** responses to the information on **slide 3.12**. Then **REFER** participants to **Handout 3.9. Clinical Nutrition Assessment** for more details, copied below.

If participants say, 'Malnourished people look thin', **FACILITATE** discussion about whether this is the only sign of malnutrition. **PROMPT** for other physical signs of malnutrition in the box below. **REMIND** participants that overweight people are also malnourished.

#### **Signs of undernutrition**

- Bilateral pitting oedema
- Dull, dry, thin or discoloured hair
- Dry or flaking skin
- Pallor of the palms, nails or mucous membranes
- Lack of fat under the skin
- Fissures and scars at the corner of the mouth
- Swollen gums
- Goitre

#### **Signs of overnutrition**

- Overweight and obesity
- High blood pressure
- High blood sugar

★ **Ask:** 'What are some signs of severe malnutrition in children?'

**COMPARE** responses with the information on **slide 3.14**. **ASK** participants if they have ever seen children with kwashiorkor or marasmus.

**EXPLAIN** that any child with medical complications like those shown in the slide should be referred to hospital for treatment.

## Clinical nutrition assessment

### 1. Check for/ask about medical complications.

- Severe anaemia (pale conjunctiva, gums, nails, palms and skin; breathlessness; rapid pulse; palpitation; weakness, dizziness, drowsiness)
- Severe dehydration
- Hypothermia
- Hypoglycaemia
- Extreme weakness
- Anorexia, poor appetite
- Persistent diarrhoea
- Nausea
- Vomiting
- High fever
- Rapid breathing
- Convulsions
- Mouth sores or thrush
- Lethargy or unconsciousness
- Opportunistic infections
- Extensive skin lesions

### 2. Check for signs of malnutrition.

- Bilateral pitting oedema
- Hair colour changes
- In children, baggy skin on buttocks

### 3. Check for growth/weight problems.

- Inadequate weight gain in pregnancy
- Low birth weight
- Pre-term delivery
- Weight loss
- Growth faltering
- Slower growth rate

### 4. Find out whether the client is taking any medications that affect nutritional status or cause side effects that affect nutritional status.

**SHOW slide 3.13** on bilateral pitting oedema. Then **REFER** participants to **NACS Job Aid 2. Bilateral Pitting Oedema (Nutritional Oedema)**. **EXPLAIN** that this is one of the clinical signs of malnutrition. Bilateral pitting oedema is pitting, or indentation, on both feet or both legs that remains after you press the skin with your thumb and remove it. **STRESS** that any bilateral pitting oedema alone indicates severe acute malnutrition (SAM). There is no need for further nutrition assessment using MUAC or BMI or WHZ.

★ **Ask:** ‘How can you check for bilateral pitting oedema?’

**REFER** participants to **Handout 3.10. Checking for Bilateral Pitting Oedema. GO THROUGH** each step in the box below.

#### How to check for bilateral pitting oedema

- Press firmly with your thumbs on the back of both feet for 3 seconds, counting 1, 2, 3, 4, 5.
- Remove your thumbs.
- If the places that your thumbs pressed stay indented for several seconds, the person has oedema.
- Do the same test on the lower legs, hands and lower arms. If the skin stays depressed in these areas, look for swelling in the face, especially around the eyes.

**ASK** participants to look at the table with grades of bilateral pitting oedema, shown below. **EXPLAIN** that a client with SAM and grade + or ++ of bilateral pitting oedema can be treated for SAM as an outpatient, but a client with grade +++ must be admitted to hospital for treatment.

#### Grades of bilateral pitting oedema

Grade	Definition	Action
+	<b>Mild</b> (in both feet or ankles)	Treat for SAM as outpatient.
++	<b>Moderate</b> (in both feet plus both lower legs, both hands or both lower arms)	Treat for SAM as outpatient.
+++	<b>Severe</b> (generalised, in both feet, both legs, both hands, both arms and face)	Treat for SAM as inpatient.

**EXPLAIN** that only bilateral pitting oedema is nutritional. Oedema that is not bilateral and pitting can also be caused by pre-eclampsia, kidney problems, elephantiasis, heart failure or wet beriberi (vitamin B<sub>1</sub> deficiency with oedema).

**EXPLAIN** that SAM, infections and some medications can cause loss of appetite. Severely malnourished clients should be given an appetite test to find out whether they can eat ready-to-use therapeutic food (RUTF) used to treat SAM. If so, they can be treated as outpatients. If they fail the appetite test, they need to be admitted for inpatient treatment so they can be carefully monitored. Clients with SAM should be given an appetite test on every follow-up visit if RUTF is available.

**REFER** participants to **Handout 3.11. Giving an Appetite Test**, copied in the box below. **ASK** volunteers to read each step aloud.

### How to give an appetite test

1. Do the appetite test in a quiet place.
2. Ask the client or caregiver to wash his or her hands with soap and running water.
3. Give the client or caregiver a packet of RUTF and show how to open the RUTF and eat it from the packet or on a spoon.
4. Do not force the client to eat the RUTF. Children may need gentle encouragement to eat, especially if they are sick
5. Offer plenty of boiled or treated drinking water, as RUTF causes thirst.
6. Watch to see how much the client eats (or ask the caregiver to give it to the child and watch how much the child eats).
7. The test can take up to 30 minutes.

Minimum amount of RUTF the client should eat to pass the appetite test	
Client weight (kg)	Packets
< 4.0	$\frac{1}{8}$ – $\frac{1}{4}$
4.0–6.9	$\frac{1}{4}$ – $\frac{1}{3}$
7.0–9.9	$\frac{1}{3}$ – $\frac{1}{2}$
10.0–14.9	$\frac{1}{2}$ – $\frac{3}{4}$
15.0–29.0	$\frac{3}{4}$ –1

### TOPIC 5. Biochemical Assessment (25 minutes)

**EXPLAIN** that the blood, urine and stool test results can provide information on nutritional status. Not every health facility may do all these tests, but use any available laboratory results can help assess the nutrition-related problems of clients. Although physicians usually order biochemical tests, health care providers should be able to interpret the results if they are nutrition related or require nutrition intervention.

★ **Ask:** ‘What laboratory tests can show information related to nutrition?’

**SHOW** **slide 3.15**. Then **REFER** participants to **Handout 3.12. Biochemical Assessment** for more details on different laboratory tests. The most common ones are copied below.

Test	Normal results	Low number	High number
<b>Metabolic tests</b>			
Glucose	70–99 milligrammes (mg)/decilitre (dL)	Hypoglycaemia, liver disease, adrenal insufficiency, excess insulin	Hyperglycemia, certain types of diabetes, prediabetes, pancreatitis, hyperthyroidism
Blood urea nitrogen (BUN)	7–20 mg/dL	Malnutrition	Liver or kidney disease, heart failure
Creatinine	0.8–1.4 mg/dL	Low muscle mass, malnutrition	Chronic or temporary kidney function decrease
Calcium	8.5–10.9 mg/dL	Calcium, magnesium, or vitamin D deficiency, malnutrition, pancreatitis, neurological disorders	Excess vitamin D intake, kidney disease, cancer, hyperthyroidism
Protein	6.3–7.9 g (g)/dL	Liver or kidney disease, malnutrition	Dehydration, liver or kidney disease, multiple myeloma
Albumin	3.9–5.0 g/dL	Liver or kidney disease, malnutrition	Dehydration
<b>Blood tests</b>			
White blood cell count	4,500–10,000 cells/microlitre (mCL)	Autoimmune illness, bone marrow failure, viral infections	Infection, inflammation, cancer, stress, intense exercise
Red blood cell count	Male: 4.7–6.1 million cells (Mill)/mCL Female: 4.2–5.4 Mill/mCL	Iron, vitamin B <sub>12</sub> , or folate deficiency, bone marrow damage	Dehydration, renal problems, pulmonary or congenital heart disease
Haemoglobin (Hb)	Male: 13.8–17.2 g/dL Female: 12.1–15.1 g/dL	Iron, vitamin B <sub>12</sub> , or folate deficiency, bone marrow damage	Dehydration, renal problems, pulmonary or congenital heart disease
Haematocrit	Male: 40.7%–50.3% Female: 36.1%–44.3%	Iron, vitamin B <sub>12</sub> , or folate deficiency, bone marrow damage	Dehydration, renal problems, pulmonary or congenital heart disease
Platelet count	150–400 thousand/mCL	Viral infections, lupus, pernicious anaemia (due to vitamin B <sub>12</sub> deficiency)	Leukaemia, inflammatory conditions
<b>Stool sample analysis</b>			
Helminth (hookworm and ascaris) infection			Anaemia

**POINT OUT** the anaemia and cholesterol cutoffs, copied below.

### Anaemia cutoff points

Group	Haemoglobin level less than
Children 6–59 months	11.0 g/dL
Children 5–11 years	11.5 g/dL
Children 12–14 years	12.0 g/dL
Pregnant women	11.0 g/dL
Non-pregnant women > 15 years	12.0 g/dL
Men > 15 years	13.0 g/dL

### Cholesterol cutoff points

Cholesterol type	Desirable (mg/dL)	Borderline (mg/dL)	High risk (mg/dL)
Total cholesterol	Less than 200	200–239	240 or higher
High-density lipoprotein (HDL)	40 or higher	N/A	< 40 for men < 50 for women
Low-density lipoprotein (LDL)	Less than 100	130–159	160 or higher
Triglycerides	Less than 150	150–199	200 or higher

**FACILITATE** discussion on which of these laboratory test results are done in participants' workplaces and how they can use the results to determine what nutrition care and treatment clients need.

## TOPIC 6. Dietary Assessment (25 minutes)

**EXPLAIN** why it is important to know whether clients are eating enough food and a mixed diet—so they get enough energy and essential nutrients.

★ **Ask:** 'What might cause clients to eat an inadequate diet?'

**COMPARE** responses to the information on **slide 3.16**, copied below.

### Reasons for poor dietary intake

- Poor food access and availability
- Illness
- Medications
- Smoking
- Alcohol
- Drug abuse
- Food taboos
- Stigma
- Depression
- Lack of time for preparation
- Lack of fuel
- Lack of family support

★ **Ask:** ‘Do you do dietary assessment in your workplaces?’

If any participants answer ‘Yes’, **FACILITATE** discussion on how they do dietary assessment. If any participants answer ‘No’, **FACILITATE** discussion on why they do not do it.

**REFER** participants to **Handout 3.13. Dietary Assessment** and the Food Pyramid. **EXPLAIN** that they can use 24-hour recall to assess both the quantity and diversity of the client’s diet. **EXPLAIN** how to do this assessment using the information in the box below.

### 24-hour recall

1. Ask what the client ate and/or drank the previous day for a) breakfast, b) lunch, c) dinner, d) snacks and e) other (specify).
2. Include everything eaten or drunk at home and outside the home.
3. Ask how much of each food item the client ate or drank.
  - *Volume:* (teaspoon, tablespoon, cup)
  - *Number*
  - *Size:* (large, medium, small). Use plate size to estimate quantities.
4. Record the food eaten at different times.
5. Then show the client the Daily Food Pyramid and ask whether the client ate foods in each of the different food groups the previous day.
6. Estimate whether the client ate enough for his or her age, body size, activity level and sex.
7. Counsel the client to eat enough foods daily from any of the groups that were not included in his or her responses.

**FACILITATE** discussion about how health care providers could counsel clients based on the results of dietary assessment. **CONSIDER** all the factors that affect dietary intake listed on **slide 3.13**.

### Discussion (5 minutes)

**ALLOW** time for questions and discuss any issues that need clarification.

## SESSION 4. NUTRITION COUNSELLING

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**Duration:** 4 hours

### **Purpose**

This session will help participants provide effective nutrition counselling.

### **Objectives**

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

1. Explain the difference between education and counselling.
2. List the communication skills needed for effective counselling.
3. Describe key considerations for planning a counselling session.
4. Demonstrate nutrition counselling using the GATHER approach.

### **Materials**

- PowerPoint slides for Session 4
- Counselling flipchart *Eating and Living Well: Good Nutrition Makes a Difference for People Living with Illness* for each participant (or at least for each group)
- **Worksheet 4.1. Review of Session 3**
- **Handout 4.2. Communication Skills for Effective Counselling**
- **Handout 4.3. Conducting a Nutrition Counselling Session**
- **Handout 4.4. The GATHER Approach to Counselling**
- **Handout 4.5. Checklist of Counselling Techniques**
- **Handout 4.6. Counselling on Maintaining Desired Weight**
- **Handout 4.7. Counselling on Managing Symptoms of Illness through Diet**
- **Handout 4.8. Common Herbs and Spices**
- **Handout 4.9. Case Scenarios**

### **Advance preparation**

1. Review slides 4.1 to 4.7.
2. Review Handouts 4.1 to 4.9 in the *Participant Handouts*.
3. Review section 3.2. 'Nutrition Education and Counselling' of the *Nutrition Guidelines for Care and Support of People with HIV*.
4. Review the nutrition counselling flipchart *Eating and Living Well: Good Nutrition Makes a Difference for People Living with Illness*, including the instruction on how to use the flipchart on the back of the cover page.

### Review of Session 3. Nutrition Assessment (10 minutes)

**SAY**, 'To review what we learned about nutrition assessment in Session 3, we are going to play a game'.

**REFER** participants to **Worksheet 4.1. Review of Session 3** in the *Participant Handouts*.

**POINT OUT** that the sheet has nine boxes with an answer in each box.

High-energy protein supplement (HEPS)	Mid-upper arm circumference (MUAC)	Normal
Severe acute malnutrition (SAM)	Bilateral pitting oedema and wasting	SAM with no appetite or with medical complications
Extreme thinness or wasting	Stabilisation	< 11.5 cm

**EXPLAIN** that you will ask a series of questions and that the participants should tick the boxes on the worksheet with the correct answers. The first participant who marks three boxes in a row (vertically, horizontally or diagonally) should shout 'Bingo!' and stand up. Participants who raise a false alarm will be disqualified.

**ASK** the questions in the box and pause for 10 seconds after each question to give participants time to find the answers. **VERIFY** the answer of the person who shouts 'Bingo' first. **ANSWERS** are in bold in the box below.

1. What is the MUAC cutoff for SAM in children 6–59 months?  
**ANSWER: < 11.5 cm**
2. What is the criterion for admission to inpatient treatment of SAM?  
**ANSWER: SAM with no appetite or with medical complications**
3. What specialised food product is used to treat MAM?  
**ANSWER: High-energy protein supplement (HEPS)**
4. What anthropometric measure should be used for women who are pregnant

or up to 6 months postpartum?

**ANSWER: MUAC**

5. What is a sign of marasmus in children?

**ANSWERS: *Extreme thinness or wasting***

6. What is the nutritional status of a child with WHZ  $\geq -2$  to  $<+2$ ?

**ANSWER: *Normal***

### TOPIC 1. Session Objectives (5 minutes)

**PRESENT** the session objectives on **slide 4.1** or on a flipchart.

### TOPIC 2. Definition of Counselling (10 minutes)

★ **Ask:** 'What is giving advice?'

**WRITE** responses on a flipchart.

★ **Ask:** 'What is educating?'

**WRITE** responses on a flipchart.

★ **Ask:** 'What is counselling?'

**WRITE** responses on a flipchart. **COMPARE** them to the information on **slide 4.2**, copied below. **FACILITATE** discussion. **STRESS** the non-judgemental, collaborative and empathetic quality of counselling.

#### Difference between advising, educating and counselling

- Giving advice is directive.
- Educating is conveying information from one person (the expert) to another (the passive receiver).
- Counselling is non-directive, non-judgmental, dynamic, empathetic interpersonal communication to help someone learn how to use information to make a choice or solve a problem.

### TOPIC 3. Communication Skills for Effective Counselling (60 minutes)

★ **Ask:** 'Can you think of a time when someone told you what you should do, for example, quit smoking or eat fresh vegetables every day? How did you feel?'

**FACILITATE** discussion about how people usually react to being told what to do and why it's not always easy to do those things. **EXPLAIN** that decisions to change behaviour depend on:

- Beliefs, opinions and needs
- The people in the family or community who control the money and other resources
- Culture, the media and social status
- Health status
- Risks perceived in making the suggested change

**EXPLAIN** that counselling is not just telling or advising someone what to do. It is a way of helping people decide for themselves what is best to do in their situation. Good communication skills are important in nutrition counselling. Counsellors need to gather information on clients' practices and challenges, praise good practices and suggest changes if needed.

**EXPLAIN** that this session introduces basic communication skills for effective counselling and that these skills improve with practice.

**EXPLAIN** that counsellors should create a comfortable, private and safe environment to put clients at ease and encourage them to talk openly. They should allow enough time for clients to discuss their problems and assure them that the information they share will be kept confidential. Clients may want family members or friends they trust to be present during the counselling.

**REFER** participants to **Handout 4.2. Communication Skills for Effective Counselling**. Ask a volunteer to read aloud the first section beginning 'Good Communication is:'.

**EXPLAIN** that listening and learning are critical for good counselling. Counsellors should listen carefully to what clients say to gather as much information as possible. *They should do less talking than the clients*. Counsellors can learn a lot about clients' nutritional status by just observing, before asking any questions. This is called the **Triple L** ('Listen, Look and Learn') approach.

**SHOW** **slides 4.4** with the six listening and learning skills for effective counselling. **READ** the explanation in italics for each skill.

**FACILITATE** discussion about each of the skills, e.g., 'What is non-verbal communication?' (nodding, smiling), 'What words start open-ended questions?' (What? How? Why?), 'How can you show a client you are listening?' (Maintain eye contact, say 'Mmm').

## Listening and learning skills for effective counselling

1. **Use helpful non-verbal communication.** *This means showing your attitude through your posture, expressions and gestures without speaking. For example,*
  - *Sitting with your head level with the client's head*
  - *Looking at the client) and paying attention while he or she speaks instead of looking away or at your notes*
  - *Sitting directly in front of the client instead of behind a table or desk*
  - *Taking time to greet the client, smile and give the client time to respond*
2. **Use responses or gestures which show interest.** *This means showing that you're listening by maintaining eye contact, nodding, smiling or saying 'Mmm' or 'Yes' while the client is talking.*
3. **Empathise.** *This means trying to understand clients' problems from their point of view. It is different from sympathizing, which is trying to understand others' problems from your own point of view.*
4. **Ask open-ended questions.** *Open-ended questions start with 'Who?', 'How?', 'What?', 'When?', 'Where?' and 'Why?' instead of questions that have to be answered with 'Yes' or 'No'. For example, ask, 'What do you usually eat in the morning?' instead of 'Are you eating well?'*
5. **Reflect what clients say.** *This doesn't mean copying exactly what they say, but repeating it in a slightly different way to show you've heard them. For example: If a client says, 'I feel too weak to fetch vegetables from the garden', you could say, 'You are weak because you are ill, and that makes it difficult to do some things'.*
6. **Avoid words which sound judgmental.** *Calling what clients tell you they do 'right', 'wrong', 'good', 'bad', 'well', 'badly', 'enough' or 'properly' make them feel you are judging them. For example, instead of saying, 'Are you feeding your baby properly?', ask, 'How are you feeding your baby?'*

**EXPLAIN** that accepting what a client thinks and feels and praising what a client is doing correctly build confidence and make the client feel empowered to collaborate with you in improving his or her nutritional status.

With another facilitator, **DEMONSTRATE** the role-plays below. **ASK** participants to pay attention to identify good and poor listening and learning skills.

### Role-play 1

**Counsellor:** (looking at a counselling flipchart and not at the client): Eating meat can help you stay healthy. How often do you eat meat?

**Client:** *I don't have money to buy meat. I buy special tablets in the market to stay healthy. They are very expensive.*

**Counsellor:** (looking at her notes): Oh, no—those tablets are a waste of your money. You should not buy them.

*(Poor listening and learning skills: Not looking at the client, using judgmental words such as ‘You should not’, not praising the clients’ wish to stay healthy)*

## **Role-play 2**

**Counsellor:** (looking at the client) Eating meat can help you stay healthy. Could you eat meat?

**Client:** *I don’t have money to buy meat. I buy special tablets in the market to stay healthy. They are very expensive.*

**Counsellor:** (gently touching the client) Yes, many people buy those tablets to keep healthy. But they are very expensive. That leaves you with less money for food. Do you think you could use the same money to buy meat?

*(Good listening and learning skills: Making eye contact with the client, gently touching her, reflecting back what the client says, giving the client a possible option to choose)*

**EXPLAIN** that clients need to them feel confident and good about themselves to resist pressures which may prevent them from adopting healthy practices.

**SHOW** **slide 4.5**. Give the explanation in italics for each skill.

1. **Accept what a client thinks and feels.** *Respond neutrally to what the client says, without agreeing or disagreeing. For example, say, ‘I see’.*
2. **Recognise and praise what a client is doing correctly.** *Don’t try to correct what clients are doing wrong. Praise their good practices. This builds their confidence to continue those practices and makes them more likely to accept suggestions later.*
3. **Give practical help.** *Walk clients through the steps that will give them confidence to solve their problems.*
3. **Give a little relevant information at a time.** *Suggest only one or two actions at a time that clients can act on right away.*
5. **Use simple language.** *Explain things to clients using familiar terms instead of medical or technical words. For example, instead of ‘exclusive breastfeeding’, say, ‘Giving a baby breast milk only and no other milk or food, not even water’.*
6. **Make a few suggestions rather than giving commands.** *Telling clients that they ‘must’ or ‘should’ or ‘should never’ do something takes control of their decisions away from them and gives it to you. Instead, say ‘What about trying this to see if this works for you?’*

**FACILITATE** discussion about each of the skills, e.g., ‘Why should a counsellor give only one or two suggestions at a time?’ (to avoid overwhelming the client), ‘What are practical suggestions?’ (ones a client can follow with the time and other resources he or she has).

With another facilitator, **DEMONSTRATE** the role-plays below. Ask participants to pay attention to identify good and poor communication skills.

### Role-play 3

**Counsellor:** How are you feeling today?

**Client:** *I'm feeling very tired.*

**Counsellor:** Your medical tests show you have anaemia. That means your blood doesn't have enough red blood cells to carry oxygen to the rest of your body. It can make people feel tired and short of breath.

**Client:** *Yes, I feel like that.*

**Counsellor:** You should eat more meat.

(*Poor communication skills:* Giving a command, using judgemental words such as 'You should')

★ **Ask:** 'What could the counsellor have said instead of, "You should eat more meat"? How could you change the command into a suggestion?' (ANSWER: 'Would you be able to eat other foods such as beans, kapenta, kalembula or meat?' or 'What about trying to eat other foods such as beans, kapenta, kalembula or meat and see how they make you feel?')

### Role-play 4

**Counsellor:** Please sit down. Welcome. How are you today?

**Client:** *I am fine, thank you.*

**Counsellor:** How are you feeling?

**Client:** *I have more energy to do my work.*

**Counsellor:** Anything else?

**Client:** *I seem to have more colour in my face.*

**Counsellor:** I see you were weighed by the doctor and your weight has stayed steady since I last saw you. Can you describe what you've been eating?

**Client:** *I did some of the things you suggested last time*

**Counsellor:** Could you tell me specifically which suggestions you followed?

**Client:** *I eat more nshima and beans.*

**Counsellor:** I'm glad some of the suggestions were useful to you. Are you having any problems eating?

**Client:** *Yes, sometimes.*

**Counsellor:** Can you describe the problems you're having?

**Client:** *Well, my mouth gets sore.*

**Counsellor:** That must be painful. When does it get sore—when you eat certain foods or just when you eat anything at all?

**Client:** *Just sometimes it is sore, and it is hard to eat.*

**Counsellor:** You find that it is hard to eat because your mouth gets sore. I can tell you about some things that might help you eat more comfortably.

(*Good communication skills:* Giving practical help, showing interest in what the client says, reflecting back what the client says and using open-ended questions)

## TOPIC 4. Preparation for a Counselling Session (40 minutes)

**REFER** participants to **Handout 4.3. Conducting a Nutrition Counselling Session**. Go through the handout together and explain any points that need clarification.

*Before the counselling starts:*

1. Make sure you have at least 15 minutes to spend with the client.
2. Choose a place where the client will be comfortable and have privacy.
3. Understand the content of the materials you will use to counsel your client.
4. Have the following materials handy:
  - *Eating and Living Well: Good Nutrition Makes a Difference for People Living with Illness* counselling flipchart
  - Data collection forms
  - Referral forms
  - Register or calendar to record the next appointment
  - Notes on previous actions if this is a follow-up visit

*During the counselling:*

1. Set goals with the client. Discuss the results of her/his nutrition assessment and agree with her/him on specific and achievable goals to improve her/his nutritional status. Do not give the client more than one or two goals because too many changes at one time are overwhelming. Add other goals after the first ones are achieved.
2. Plan with the client how to achieve the goals set. Counsel her/him on eating well, preventing infections, maintaining physical activity and managing symptoms, depending on her/his needs. Then discuss challenges the client may face in making the recommended changes.

Set the date and time of the next appointment.

★ **Ask:** 'In the context of counselling, what do you think these initials stand for?'

**SHOW** **slide 4.6** (shown below) and go over what each letter stands for.

### **GATHER approach to counselling**

- G – Greet
- A – Ask
- T – Tell
- H – Help
- E – Explain
- R – Reassure/Return date

**EXPLAIN** that remembering the letters G-A-T-H-E-R can help participants counsel more effectively. **REFER** them to **Handout 4.4. The GATHER Approach to Counselling**. **ASK** volunteers to read each paragraph aloud.

## TOPIC 5. Using the Counselling Flipchart (40 minutes)

**HOLD UP** a copy of the nutrition counselling flipchart *Eating and Living Well: Good Nutrition Makes a Difference for People Living with Illness* and explain that participants can use this flipchart during counselling. Go through the table of contents with the participants:

- Theme 1. Good nutrition for people living with illness
- Theme 2. Adherence to treatment
- Theme 3. Preventing infections through WASH
- Theme 4. Positive Living
- Theme 5. Maternal and Child Nutrition
- Theme 6. Symptom Management

With two facilitators sitting across from each other, **DEMONSTRATE** how to show the pictures on one side of the pages to clients while giving at the messages on the other side.

## TOPIC 6. Counselling Challenges (15 minutes)

★ **Ask:** ‘Do you counsel clients on nutrition? If not, why not?’

**ENCOURAGE** participants to share their experience and challenges. **LIST** any challenges the participants mention on a flipchart. **PROMPT** them to discuss challenges in the box below that they haven’t mentioned.

### Counselling challenges

- Lack of time
- Large client load
- Lack of space
- Lack of privacy
- Inability to speak the client’s language
- Lack of incentives
- Inadequate support from managers
- Lack of counselling materials

**GO OVER** each challenge on the flipchart and **ASK** participants how they could solve it. **WRITE** responses on the flipchart next to each challenge and **COMPARE** them to the information in the box below.

### Ways to address counselling challenges

- **Lack of time:** Train community or peer counsellors.
- **Large client load:** Train community or peer counsellors.
- **Lack of space:** Make more space for counselling.
- **Lack of privacy:** Find a quiet space with no people.
- **Inability to speak the client's language:** Use a translator (although this compromises confidentiality).
- **Lack of incentives:** Advocate for recognition and awards for achievement.
- **Inadequate support from managers:** Advocate for managers to attend NACS training.
- **Lack of counselling materials:** Request materials from the District Health

## TOPIC 7. Nutrition Counselling Practice (60 minutes)

**EXPLAIN** that participants have two handouts on Critical Nutrition Actions— **Handout 4.6. Counselling on Maintaining Desired Weight** and **Handout 4.7. Counselling on Managing Symptoms of Illness through Diet**. They can use as references for counselling.

**EXPLAIN** that participants will learn more about counselling on other Critical Nutrition Actions in later sessions.

**DIVIDE** participants into eight groups.

**SHOW** **slide 4.5**. **ASSIGN** scenario 1 to four of the groups and scenario 2 to the other four groups.

### Case scenarios

1. **Festus**, who is 46, comes to the clinic because he feels weak. He has had watery diarrhoea on and off for the past 3 weeks and has lost 7 kg. In the morning, he normally eats a small bowl of porridge, and his main meal is dinner. His BMI is 20.
2. **Jelita**, who is 39, has been gaining weight rapidly for the past 3 months. She stays at home to take care of her mother and does not get much exercise.

**ASK** each group to choose one person to role-play a counsellor, one to role-play a client and one to observe and take notes. **ASK** each group to use its scenario to practice counselling using the handout appropriate for the client's problems. **ASK** the group to prepare a 5-minute counselling role-play using the counselling techniques in **Handout 4.5**. **GIVE** 10 minutes to prepare for this activity.

After 10 minutes, **ASK** three of the groups (e.g., 1, 3 and 5) to present their role-plays. **ASK** the observer in each group to read the group's case scenario and answer the questions on **slide 4.7**. **REFER** to the box below for important points to cover for each role-play.

## Case scenarios

1. **Festus**, who is 46, comes to the clinic because he feels weak. He has had watery diarrhoea on and off for the past 3 weeks and has lost 7 kg. In the morning, he normally eats a small bowl of porridge, and his main meal is dinner. His BMI is 20.

**Additional assessment needed:** Anthropometric and clinical

**Most serious complications:** Chronic diarrhoea, weight loss, limited diet

**Interventions:** Referral for further medical assessment for infections and ARV eligibility or status

**Interventions:** Referral to physician for a further assessment, prescription of specialised food products to treat malnutrition

**Counselling topics:** Managing nausea, diarrhoea and vomiting through diet

2. **Jelita**, who is 19, has been gaining weight rapidly for the past 3 months. She stays at home to take care of her mother and does not get much exercise.

**Additional assessment needed:** Anthropometric and clinical

**Most serious complications:** Rapid weight gain

**Interventions:** Referral to physician for further assessment

**Counselling topics:** Eating less fat and carbohydrates and more vegetables and fruit to help lose weight and getting exercise

At the end of the exercise, **ASK** participants what they learnt from the role-plays. **WRITE** the lessons on a flipchart and keep it in view.

## Discussion (5 minutes)

**ALLOW** time for questions and **DISCUSS** any issues that need clarification.

## SESSION 5. NUTRITION AND ANTIRETROVIRAL THERAPY

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**Duration:** 1 hour

### **Purpose**

This session explains the food and nutrition implications of ART and ways to manage medication side effects and medication-food interactions through diet.

### **Objectives**

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

1. Describe the interaction between ART and nutrition and the effects of ART on nutrition.
2. Counsel on managing medication side effects and medication-food interactions through diet.
3. Prepare a medication-food plan for a client on ART.

### **Materials**

- Ball
- PowerPoint slides for Session 5
- Nutrition counselling flipchart *Eating and Living Well: Good Nutrition Makes a Difference for People Living with Illness*
- **Handout 5.1. Interaction between ARVs and Nutrition**
- **Handout 5.2. Medication-Food Plan**
- **Handout 5.3. HIV and TB Medication-Food Interactions and Side Effects**
- **Handout 5.4. Counselling on Nutrition and ART**
- **Handout 4.9. Case Scenarios**

### **Advance preparation**

1. Review slides 5.1 and 5.2.
2. Review Handouts 5.1 to 5.4 in the *Participant Handouts*.
3. Be familiar with the components and preparation of a medication-food plan.

### **Review of Session 4. Nutrition Counselling (5 minutes)**

**ASK** participants to stand in a circle. **THROW** the ball to a participant and **ASK**, ‘What is the first step in the GATHER approach to counselling?’ The participant should catch the ball and answer (‘Greet the client’) as quickly as possible. **ASK** that participant to throw the ball to another participant and ask, ‘What is the second step in the GATHER approach?’ Continue the process until participants have named all the steps in the GATHER approach. Participants who do not know the answers are ‘out’ and should remain standing but cross their arms and keep them crossed.

Next **THROW** the ball to a participant and ask, ‘What is non-verbal communication?’ (ANSWER: *Nodding, smiling*). As soon as the participant answers, **ASK** him or her to throw

the ball back to you and **ASK**, “Why should a counsellor give only one or two suggestions at a time?” (ANSWER: *To avoid overwhelming the client*).

### TOPIC 1. Session Objectives (5 minutes)

**PRESENT** the session objectives on **slide 5.1** or on a flipchart.

### TOPIC 2. Interaction between ARVs and Nutrition (10 minutes)

**REFER** participants to **Handout 5.1. Interaction between ARVs and Nutrition**. **ASK** volunteers to read each paragraph on the first two pages aloud. Then **ASK** them to look at the table on the third page and read the food recommendations for the medications their clients are taking.

### TOPIC 3. Medication-Food Plans (35 minutes)

★ **Ask**: ‘What is a medication-food plan?’

**COMPARE** responses with the information on **slide 5.2**, summarised below, and **FILL IN** gaps as needed.

A **medication-food plan** is a schedule to guide clients on how take medications correctly, in the right dosages at the correct times and with or without food. The purpose is to minimise side effects and maximise medication effectiveness.

**ASK** participants to reform their eight small groups. Then **ASK** the groups to look at **Handout 5.2. HIV and TB Medication-Food Interactions and Side Effects**. **EXPLAIN** that this handout lists the ARVs prescribed in Zambia, when to take them in relation to food and what foods to avoid to make the medications work effectively.

Then **REFER** the groups to **Handout 5.3. Medication-Food Plan**. **GO OVER** the instructions for making a medication-food plan.

**REFER** the groups to **Handout 5.4. Counselling on Nutrition and ART**. **ASK** volunteers to read aloud each paragraph on the first page.

Then **REFER** the groups again to **Handout 4.9. Case Scenarios**. **ASK** groups 1, 2, 3 and 4 to read **Case Scenario 7** in their groups and groups 5, 6, 7 and 8 to read **Case Scenario 8**.

**Case scenario 7. Prudence**, a 29-year-old woman, comes to the clinic complaining of losing fat from her thighs and arms and gaining fat around her stomach. She started ART (Zidovudine, Lamivudine and Efavirenz) 12 months ago. Her chart from that time lists a CD4 of 233, weight of 67 kg and BMI of 23.8. On examination, you find she has gained 3 kg in the past year.

**Case scenario 8. Nkulu**, a 38-year-old HIV-positive man, comes to the clinic. His health has declined seriously in recent months. Nkulu was also diagnosed with TB. After the doctor measured his CD4 count and viral load, she informed him that he was eligible to enrol in ART and explained the programme in detail. The man agreed. After prescribing Rifampicin and Isoniazid, the doctor explained how many tablets he should take a day and how often. She referred him for counselling on how to manage these medications and their interaction with food.

**ASK** the groups to **role-play counselling clients on developing medication-food plans** using **Handout 5.2. HIV and TB Medication-Food Interactions and Side Effects**. **EXPLAIN** that they can also use the nutrition counselling flipchart *Eating and Living Well: Good Nutrition Makes a Difference for People Living with Illness* to counsel clients on how to manage side effects of medications.

**ASK** the ‘counsellors’ to set nutrition goals with the ‘clients’ based on the target weight and to counsel them on optimal energy intake and symptom management through diet. **GIVE** the groups 20 minutes for this exercise.

After 20 minutes, **ASK** each group to present its medication-food plan and counselling recommendations in plenary. **COMPARE** the responses to the ANSWERS in the box below and **FILL IN** gaps as needed.

**Case scenario 7. Prudence**, a 29-year-old woman, comes to the clinic complaining of losing fat from her thighs and arms and gaining fat around her stomach. She started ART (Zidovudine, Lamivudine and Efavirenz) 12 months ago. Her chart from that time lists a CD4 of 233, weight of 67 kg and BMI of 23.8. On examination, you find she has gained 3 kg in the past year.

**Medication-food plan:** *Take your ARVs without food.*

**Nutrition goal:** *Reduce weight gain.*

**Counselling messages:** *Manage symptoms of diarrhoea by drinking more fluids; eating easily digestible foods; avoiding spicy foods, dairy products and citrus fruits; and eating fermented foods. Manage nausea by eating small, frequent meals; avoiding spicy and fatty foods; waiting at least 20 minutes after eating to lie down; avoiding an empty stomach; avoiding caffeine and alcohol; and eating lightly salty, dry foods such as crackers to calm the stomach. Check with the health care provider about changing ARVs to avoid further lipodystrophy.*

**Case scenario 8. Nkulu**, a 38-year-old HIV-positive man, comes to the clinic. His health has declined seriously in recent months. After the doctor measured his CD4 count and viral load, she informed him that he was eligible for ART and explained the programme in detail. Nkulu was also diagnosed with TB. After prescribing Rifampicin and Isoniazid, the doctor explained how many tablets he should take a day and how often. She referred him for counselling on how to manage the side-effects of these medications and their interaction with food.

**Medication-food plan:** *Take Rifampicin and Isoniazid 1 hour before or 2 hours after eating, with plenty of water.*

**Nutrition goal:** *Manage side effects of the TB medications.*

**Counselling messages:** *Manage heartburn by eating small, frequent meals; avoiding gas-forming foods such as cabbage, soda and beans; and drinking plenty of fluids. Manage symptoms of diarrhoea by drinking more fluids; eating easily digestible foods; avoiding spicy foods, dairy products and citrus fruits; and eating fermented foods. Manage nausea (Isoniazid) by avoiding spicy and fatty foods; waiting at least 20 minutes after eating to lie down; avoiding an empty stomach; avoiding caffeine and alcohol; and eating lightly salty, dry foods such as crackers to calm the stomach.*

**ASK** each group to share what they learned role-playing the preparation of a food and medication plan.

### **Discussion (5 minutes)**

**ALLOW** time for questions and **DISCUSS** any issues that need clarification.

## SESSION 6. FOOD AND WATER SAFETY AND HYGIENE

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**Duration:** 1 hour

### **Purpose**

This session explains the importance of food and water safety and hygiene.

### **Objectives**

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

1. Explain how food and water can be sources of infection.
2. Describe how to make food and water safe.
3. Counsel clients on food and water safety and hygiene.

### **Materials**

- Wash basin
- Jug of water
- Soap
- PowerPoint slides for Session 6
- **Handout 6.1. Food- and Water-Borne Illness**
- **Handout 6.2. Importance of Food and Water Safety**
- **Handout 6.3. How to Reduce the Risk of Illness from Contaminated Food or Water**

### **Advance preparation**

1. Review slides 6.1 to 6.5.
2. Review handouts 6.1 to 6.3 in the *Participant Handouts*.

### **Review of Session 5. Nutrition and Antiretroviral Therapy (5 minutes)**

**ASK** the following questions:

1. Why is it important to take medications as directed?

*ANSWER: To make sure the medications work effectively and reduce possible side effects*

2. What is the purpose of a medication-food plan?

*ANSWER: To help clients remember which medications to take when and with or without food to minimise side effects and maximise the effectiveness of the medications*

### **TOPIC 1. Session Objectives (5 minutes)**

**PRESENT** the session objectives on **slide 6.1** or on a flipchart.

## TOPIC 2. Food- and Water-Borne Infection (10 minutes)

★ **Ask:** 'What is food safety?'

**WRITE** responses on flipchart.

★ **Ask:** 'What is water safety?'

**WRITE** responses on a flipchart.

★ **Ask:** 'What is hygiene?'

**WRITE** responses on flipchart. Compare them to the information on **slide 6.2**, copied below.

### Food and water safety and hygiene

- **Food safety** refers to preventing food contamination and food-borne illness through proper preparation, cooking and storage.
- **Water safety** refers to preventing water contamination and water-borne illness through proper treatment and storage.
- **Hygiene** refers to conditions or practices that help maintain health and prevent disease, especially through cleanliness.

★ **Ask:** 'How can people get sick from food and water?'

**WRITE** responses on a flipchart and facilitate discussion. **REFER** participants to **Handout 6.1. Food- and Water-Borne Illness**. **ASK** volunteers to take turns reading each paragraph aloud. **EXPLAIN** any information participants do not understand.

## TOPIC 3. The Importance of Food and Water Safety (35 minutes)

★ **Ask:** 'Why are food and water safety important?'

**WRITE** responses on a flipchart. **COMPARE** them to the information on **slide 6.3**.

**REFER** participants to **Handout 6.2. Importance of Food and Water Safety**, summarised in the box below. **GIVE** them 5 minutes to read the handout silently. After 5 minutes, **ASK** whether all the points are clear. If not, **EXPLAIN** the points until participants understand.

## Importance of food and water safety and hygiene

'Safe' food and water contain no dangerous germs and toxic chemicals that could damage health.

Even healthy people can get stomach pains, diarrhoea, nausea and vomiting from contaminated food or water. These symptoms can reduce appetite and absorption of nutrients and increase the need for nutrients to fight infection. Food- and water-borne illness may cause weight loss and further lower the body's resistance to other infections. Food and water-borne illnesses are difficult to treat and can come back again and again.

A healthy person's immune system can fight harmful germs, but a weakened immune system cannot. Food and water can carry germs that cause serious infections in people with compromised immune systems.

Exposure to germs in faeces from poor hygiene and sanitation cause more child stunting than poor IYCF practices or poor diets. This is because children who come into contact with germs in faeces through soil or unclean water can get an intestinal illness. This illness reduces the ability of the intestines to absorb the nutrients in food. The children's energy is spent on fighting the illness instead of healthy growth.

Clean food and water are very important for people with infections such as HIV because:

1. They have low immunity and are at higher risk of infections.
2. They have more severe symptoms of food-borne illness, which are more likely to cause serious conditions such as meningitis.
3. They may have a hard time recovering from illness.
4. Food- and water-borne illness can cause weight loss and further lower resistance to opportunistic infections.

After 5 minutes, **FACILITATE** discussion on the content of the handout.

★ **Ask:** 'How can food and water be kept safe?'

**WRITE** responses on a flipchart. Then **REFER** participants to **Handout 6.3. How to Reduce the Risk of Illness from Contaminated Food or Water**, summarised in the box below. **GIVE** participants 5 minutes to read the handout silently. After 5 minutes, **DISCUSS** any points that participants do not understand. **EXPLAIN** this handout can help participants counsel clients on water, sanitation and hygiene.

## Food and water safety and hygiene

No food or water is 100 percent safe at all times for all people, but following the rules below can prevent most food- and water-borne disease.

1. Wash hands correctly.
2. Keep surroundings clean.
3. Use safe water and foods.
4. Separate raw and cooked food.
5. Cook food thoroughly.
6. Store food safely.

**EXPLAIN** that handwashing is a simple thing that everyone does every day, but it must be done correctly to prevent infection. **DEMONSTRATE** correct handwashing using soap, a jug and a basin of water, following the drawings in **Handout 6.3**. Have another facilitator pour the water over your hands to rinse them.

**DIVIDE** participants into six groups.

**SHOW** **slide 6.4**. **ASSIGN** each group an action in the list on the slide. **ASK** the groups to write down the action they are assigned.

- Group 1: Wash hands correctly.
- Group 2: Keep surroundings clean.
- Group 3: Use safe water and foods.
- Group 4: Separate raw and cooked foods.
- Group 5: Cook food thoroughly.
- Group 6: Store food safely.

**SHOW** **slide 6.5**. **ASK** the groups to discuss how easy or difficult it might be for clients in the communities where they work to practice the recommended actions given the resources they have. **ASK** them to write their results on a flipchart. **GIVE** 10 minutes for this activity.

At the end of 10 minutes, **ASK** each group to present its responses in plenary.

**EXPLAIN** that clients they may not be able to follow counselling advice because they don't have the time, resources, skills or support to do so. Health care providers should not blame clients for this. Instead, they should ask what support clients need to change behaviour to improve nutrition.

### Discussion (5 minutes)

**ALLOW** time for questions and **DISCUSS** any issues that need clarification.

## SESSION 7. NUTRITION CARE FOR PREGNANT AND BREASTFEEDING WOMEN

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**Duration:** 1½ hours

### **Purpose**

This session explains the nutritional needs of pregnant and breastfeeding women.

### **Objectives**

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

1. Discuss the nutritional needs of pregnant and breastfeeding women.
2. Explain nutrition actions for pregnant and breastfeeding women.
3. Counsel pregnant and breastfeeding women on good nutrition practices.
4. Explain the extra energy needs of HIV-positive pregnant and breastfeeding women.

### **Materials**

- PowerPoint slides for Session 7
- **Handout 7.1. Energy Needs of Pregnant and Breastfeeding Women**
- **Handout 7.2. Counselling on Good Nutrition in Pregnancy**
- **Handout 7.3. Counselling Pregnant and Breastfeeding Women on Anaemia**
- *Nutrition Guidelines for Care and Support of People with HIV*

### **Advance preparation**

1. Review slides 7.1 to 7.6.
2. Review handouts 7.1 to 7.3 in the *Participant Handouts*.
3. Review Chapter 4. 'Nutrition Care for HIV-Positive Pregnant and Breastfeeding Women' in the *Nutrition Guidelines for Care and Support of People with HIV*.

### **Review of Session 6. Food and Water Safety and Hygiene**

**ASK** the following questions (5 minutes):

1. Why are safe food and water important?

ANSWERS:

- *Germs in food and water can reduce appetite and nutrient absorption.*
- *Germs in soil and water may cause stunting by causing an intestinal infection that reduces children's ability to absorb nutrients.*
- *Food- and water-borne infections are especially serious for people with weak immune systems.*

2. How do people usually get food- and water-borne infection (ANSWER: *Dirty hands*).

## TOPIC 1. Session Objectives (5 minutes)

**PRESENT** the session objectives on **slide 7.1** or on a flipchart.

## TOPIC 2. Nutritional Needs of Pregnant and Breastfeeding Women (35 minutes)

★ **Ask:** ‘How do pregnancy and lactation affect women’s nutritional needs?’

**COMPARE** responses to the information on **slide 7.2** and **FILL IN** gaps as needed from the box below.

### Effects of pregnancy and breastfeeding on women’s nutritional needs

- All pregnant and breastfeeding women need to consume more energy (200–285 extra kcal a day, depending on activity level), protein and micronutrients for the growth of the foetus and to produce milk.
- Malnutrition during pregnancy increases the risk of maternal and infant mortality, low birth weight and birth defects and the risk of chronic disease when the child is an adult.

★ **Ask:** ‘Why do HIV-positive pregnant and breastfeeding women have higher nutritional needs than non-HIV-infected pregnant and breastfeeding women?’

**COMPARE** responses to the information on **slide 7.3**, copied in the box below. **FILL IN** gaps as needed.

### Nutritional needs of HIV-positive pregnant and breastfeeding women

- HIV causes nutrient loss and malabsorption, so all people with HIV need to consume more energy and nutrients.
- Pregnant women who are HIV positive need 280 extra kcal a day.
- Breastfeeding women who are HIV positive need 500 extra kcal/day.
- Poor nutritional status before, during and after pregnancy increases women’s risk of transmitting HIV to their babies.

**REFER** participants to **Handout 7.1. Energy Needs of Pregnant and Breastfeeding Women**, copied below. **ASK** volunteers to take turns reading the needs for each group aloud.

**EXPLAIN** any information that is not clear.

Group	Average required energy intake (kcal)	Increased energy requirements for pregnancy and lactation (kcal)	Increased energy requirements for HIV (kcal)	Total energy intake (kcal)	Extra food to meet additional energy requirements
<b>Pregnant</b>					
HIV negative	2,140	200–285 (depending on activity level)	—	2,340–2,425	Handful of groundnuts or two bowls of maize porridge with oil and sugar
HIV positive, asymptomatic	2,140	280	10% (210)	2,630	Glass of passion juice, meat samosa and boiled sweet potato
HIV positive, symptomatic	2,140	280	20–30% (428–642)	2,848–3,062	Two boiled sweet potatoes, fried fish and two bananas
<b>Breastfeeding</b>					
HIV negative	2,140	500		2,640	Bowl of lentils and serving of <i>nshima</i>
HIV positive, asymptomatic	2,140	500	10% (210)	2,850	Cassava leaf and meat stew and serving of <i>nshima</i>
HIV positive, symptomatic	2,140	500	20–30% (428–642)	3,068–3,282	Maize porridge with margarine, sugar and oil plus an avocado and a serving of <i>kapenta</i>

**EXPLAIN** that pregnant women need extra energy because of the changes in their bodies and the needs of their foetuses. Healthy pregnant women need an extra 200–285 kcal per day, depending on their activity level. This translates into a handful of groundnuts or two bowls of maize porridge with oil and sugar. HIV-negative breastfeeding women need an extra 500 kcal/day, which translates into a bowl of lentils and serving of *nshima*. HIV-

positive pregnant or breastfeeding women need to increase this amount of energy by 10 percent if they are asymptomatic and 20–30 percent if they are symptomatic.

**POINT OUT** the different energy requirements in **Handout 7.1. Energy Needs of Pregnant and Breastfeeding Women** for women with and without symptoms of HIV. **EXPLAIN** that good nutrition is twice as important pregnant adolescents and women who are HIV positive. This is because they need to gain adequate weight during pregnancy, strengthen their immune systems, reduce their susceptibility to infections and slow the progression of HIV to AIDS.

**EXPLAIN** that pregnant women also need more **protein** for the development of foetal and maternal tissue, including the placenta, and an increased red blood cell mass. Non-pregnant women need 0.8 g of protein/kg/day, while pregnant women need 1.1 g/kg/day, or approximately 71 g a day. Foods rich in protein include pulses (e.g., chickpeas, lentils, cowpeas and beans), oil seeds (e.g., pumpkin, sunflower and melon) and animal-source food (e.g., meat, eggs and milk). Animal-source foods provide protein, zinc, selenium and iron that is more bioavailable than the same nutrients from plant-source food. There is no evidence that HIV-positive pregnant women need more protein than HIV-negative women.

**EXPLAIN** that iron is important for pregnant women pregnancy because it helps transport oxygen in the body and strengthens immune function. Folic acid is important to prevent birth defects of the spinal cord and brain, such as spinal bifida and anencephaly.

### **TOPIC 3. Nutrition Actions for Pregnant and Breastfeeding Women (30 minutes)**

★ **Ask:** ‘Besides eating extra food during pregnancy and lactation, what should pregnant and breastfeeding women do to avoid undernutrition?’

**WRITE** responses on a flipchart.

**REFER** participants to **Handout 7.2. Counselling on Good Nutrition in Pregnancy**, summarised in the box below. **ASK** volunteers to read the information aloud. **COMPARE** it to the responses on the flipchart. **FACILITATE** discussion about whether pregnant and breastfeeding women in the participants’ communities can practice these recommended actions.

### Counsel pregnant woman to:

- Have weight monitored regularly.
- Eat a variety of foods to get all the nutrients they need.
- Eat small, frequent meals.
- Eat more animal foods, which are valuable sources of iron that is well absorbed by the body. Iron reduces anaemia, which is common in women during pregnancy.
- Eat foods rich in vitamin C such as tomatoes, oranges, guavas or lemons to increase the absorption of iron in beans, peas, lentils and dark green leafy vegetables.
- Eat plenty of vegetables, fruits and wholegrain cereals such as roller meal, sorghum or millet every day.
- Take iron, folic acid and other supplements as recommended.
- Use iodated salt.
- Eat an extra meal and/or snack a day, especially if weight is not increasing.
- Do physical activity and get fresh air.
- Avoid foods that make them feel ill, especially if experiencing heartburn and nausea.
- Drink plenty of clean water (about 8 glasses a day).
- Avoid tea or coffee during meals because they block iron absorption.
- Maintain food and water safety and hygiene.
- Rest at least 1 hour each day.
- Seek prompt treatment of constipation, heartburn, fever, cough, vomiting and other problems common in pregnancy.

**REFER** participants to Chapter 4. 'Nutrition Care for HIV-Positive Pregnant and Lactating Women' in the *Nutrition Guidelines for Care and Support of People with HIV* for further information on nutrition for HIV-positive pregnant and breastfeeding women.

## TOPIC 4. Anaemia in Pregnant Women (10 minutes)

★ **Ask:** 'What is anaemia?'

**COMPARE** responses to the information on **slide 7.4**.

**EXPLAIN** that anaemia is a result of low haemoglobin (Hb) in blood, which reduces the ability of red blood cells to carry oxygen. People usually become anaemic if their diet doesn't include enough iron and folic acid to produce haemoglobin. Other causes are malaria hookworm and HIV, which destroy red blood cells, and losing a lot of blood through haemorrhaging or heavy menstrual bleeding.

**EXPLAIN** that anaemia is common in children, adolescents and women in many parts of Africa, including Zambia. It is very common in pregnant women and can cause pre-term delivery, low birth weight and increased maternal and perinatal mortality.

★ **Ask:** ‘How can you tell if someone has anaemia?’

**COMPARE** responses to the signs and symptoms on **slide 7.5** and **FILL IN** gaps as needed.

★ **Ask:** ‘What would you counsel a pregnant woman to do to treat or prevent anaemia?’

**COMPARE** responses to the information on **slide 7.6** and **FILL IN** gaps as needed.

**REFER** participants to **Handout 7.3. Counselling Pregnant and Breastfeeding Women on Anaemia**. **EXPLAIN** that the handout contains information they can use to counsel pregnant and breastfeeding women on preventing anaemia.

### **Discussion (5 minutes)**

**ALLOW** time for questions and **DISCUSS** any issues that need clarification.

## SESSION 8. NUTRITION CARE FOR INFANTS AND YOUNG CHILDREN

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**Duration:** 1 hour and 40 minutes

### Purpose

This session gives an overview of infant and young child feeding and explains the special nutritional needs of children born to HIV-positive mothers.

### Objectives

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

1. Describe the risks and benefits of different infant feeding practices.
2. Counsel mothers on exclusive breastfeeding and complementary feeding.
3. Counsel caregivers on feeding children older than 6 months.
4. Counsel HIV-positive mothers on infant feeding.

### Materials

- PowerPoint slides for Session 8
- Drawing of 20 mothers holding babies on a flipchart
- *Nutrition Guidelines for Care and Support of People with HIV*
- *Maternal, Infant and Young Child Nutrition Operational Framework 2014–2018*
- Nutrition counselling flipchart *Eating and Living Well: Good Nutrition Makes a Difference for People Living with Illness*
- **Handout 7.2. Counselling on Good Nutrition in Pregnancy**
- **Handout 7.3. Counselling Pregnant and Breastfeeding Women on Anaemia**
- **Handout 8.1. Recommended Infant Feeding Practices**
- **Handout 8.2. Breastfeeding**
- **Handout 8.3. Mother-to-Child Transmission of HIV**
- **Handout 8.4. Risks and Benefits of Breastfeeding and Not Breastfeeding**
- **Handout 8.5. Infant Feeding in the Context of HIV**
- **Handout 8.6. Feeding Children Older than 6 Months**

### Advance preparation

1. Review slides 8.1 to 8.5.
2. Review Handouts 8.1 to 8.6 in the *Participant Handouts*.
3. Review Chapter 5. 'Nutrition Care for Infants and Young Children of HIV-Positive Mothers' of the *Nutrition Guidelines for Care and Support of People with HIV*.

## Review of Session 7. Nutrition Care for Pregnant and Breastfeeding Women (5 minutes)

**ASK** the following questions:

1. Why is good nutrition important for pregnant and breastfeeding women?

ANSWERS

- *They need more energy and nutrients for the growth of the foetus and to produce breast milk.*
- *Malnutrition during pregnancy increases the risk of maternal and infant mortality, low birth weight, birth defects and the risk of chronic disease when the child is an adult.*

2. What are important nutrition actions for pregnant and breastfeeding women?

ANSWERS

- *Rest for at least 1 hour every day.*
- *Eat a variety of foods, especially foods rich in energy, iron and vitamin C.*
- *Take iron/folic acid supplements during pregnancy*
- *Use iodated salt.*
- *Practice good food and water safety and hygiene.*
- *Prevent and seek prompt treatment of any illness.*
- *Get dewormed.*

## TOPIC 1. Session Objectives (5 minutes)

**PRESENT** the session objectives on **slide 8.1** or on a flipchart.

**EXPLAIN** that this session will not train participants to become infant feeding counsellors. That requires more knowledge and skills than they will learn in this course. But it will help them support mothers and caretakers in feeding children under 2 years. They should refer clients to trained infant feeding counsellors for more detailed counselling.

## TOPIC 2. Infant and Young Child Feeding (20 minutes)

★ **Ask:** 'What are the recommended infant feeding practices in Zambia?'

**COMPARE** responses with the information on **slide 8.2**, copied below.

### Recommended infant and young child feeding practices

- Exclusive breastfeeding
- Introduction of appropriate complementary foods at 6 months
- Continued breastfeeding until 2 years or beyond
- Responsive feeding (patient and encouraging, not forcing, children to eat)
- Fortifying complementary foods or giving micronutrient supplements according to national recommendations
- Handling foods hygienically to avoid infection
- Continued feeding during illness
- Breastfeed exclusively for 6 months and continue breastfeeding 2 years or more.

**REFER** participants to **Handout 8.1. Recommended Infant Feeding Practices**. **EXPLAIN** that this handout contains important information about infant and young child feeding. **ASK** volunteers to take turns reading each paragraph aloud. **ANSWER** questions and **EXPLAIN** any information that is not clear.

★ **Ask:** ‘What is exclusive breastfeeding?’

**COMPARE** responses to the information in the box below and **FILL IN** gaps as needed.

#### Exclusive breastfeeding

Feeding an infant only breast milk without any other liquids or solids, not even water, unless medically indicated.

★ **Ask:** ‘What are the benefits of breastfeeding?’

**WRITE** responses on a flipchart. **COMPARE** them with the information in the box below and **FILL IN** gaps as needed.

#### The benefits of breastfeeding

- Breast milk contains all the nutrients babies need for the first 6 months and is an important nutrient-rich food for babies 6–24 months.
- Breast milk is easy to digest.
- Breast milk protects babies from diarrhoea, pneumonia and other infections.
- Breast milk is free and always available and does not need any special preparation.
- Breastfeeding creates a bond between a mother and her baby.
- Early initiation of breastfeeding (within 1 hour of delivery) and exclusive breastfeeding help mothers recover from childbirth and protect them from getting pregnant again too soon.

**REFER** participants to **Handout 8.2. Breastfeeding**. **EXPLAIN** that this handout contains detailed information about breastfeeding.

### **TOPIC 3. Infant Feeding for HIV-Positive Mothers (50 minutes)**

★ **Ask:** ‘When can HIV be transmitted from mother to child?’

**COMPARE** responses to the **ANSWER:** *During pregnancy, during labour and delivery and through breast milk.*

★ **Ask:** ‘What percentage of babies of HIV-positive mothers do you think are infected with HIV through pregnancy, labour and delivery and breastfeeding?’

**WRITE** responses on a flipchart. **COMPARE** them to the information on **slide 8.3**, copied below.

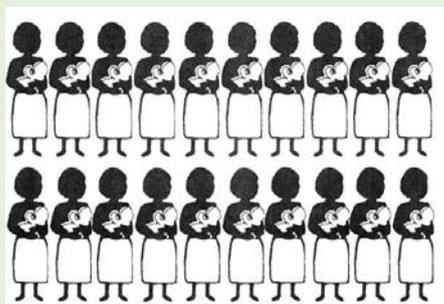
Recommended infant feeding practices in Zambia

- Exclusive breastfeeding
- Complementary feeding starting at 6 months
- Continued breastfeeding until 2 years or more
- Responsive feeding (feeding patiently and encouraging, not forcing, children to eat)
- Feeding fortified foods and giving micronutrient supplement
- Handling foods hygienically to avoid infection
- Continued feeding during illness

Refer participants to **Handout 8.3. Mother-to-Child Transmission of HIV**.

### Mother-to-Child Transmission of HIV

Ask participants to imagine that 100 pregnant women go to an ANC clinic. If 20 percent of pregnant women are HIV-positive, then 20 women out of the 100 will be HIV positive. These HIV-positive women will have 20 babies. Click on **slide 8.4** *once* to show the picture below.



Explain that without PMTCT and ARVs, about 10 percent of these women's babies will be infected with HIV during pregnancy. Ask participants to calculate the number of babies that will be infected with HIV during pregnancy and circle that many babies in **Handout 8.3**. Click on **slide 8.4** *again* to show a circle around 2 of the babies.

Then explain that without PMTCT and ARVs, an average of 15 percent of the babies will be infected with HIV during labour and delivery and breastfeeding up to 2 years. Ask participants to calculate the number of babies that will be infected with HIV during labour and delivery and breastfeeding and draw a rectangle around that many babies in **Handout 8.3**. Click on **slide 8.4** *again* to show a rectangle around 3 of the babies.

Then explain that without PMTCT and ARVs, an average of 12 percent of the babies will be infected with HIV during breastfeeding for up to 2 years. Ask participants to calculate the number of babies that will be infected with HIV during breastfeeding and draw a square around that many babies in **Handout 8.3**. Click on **slide 8.4** *again* to show a triangle around 3 of the babies.

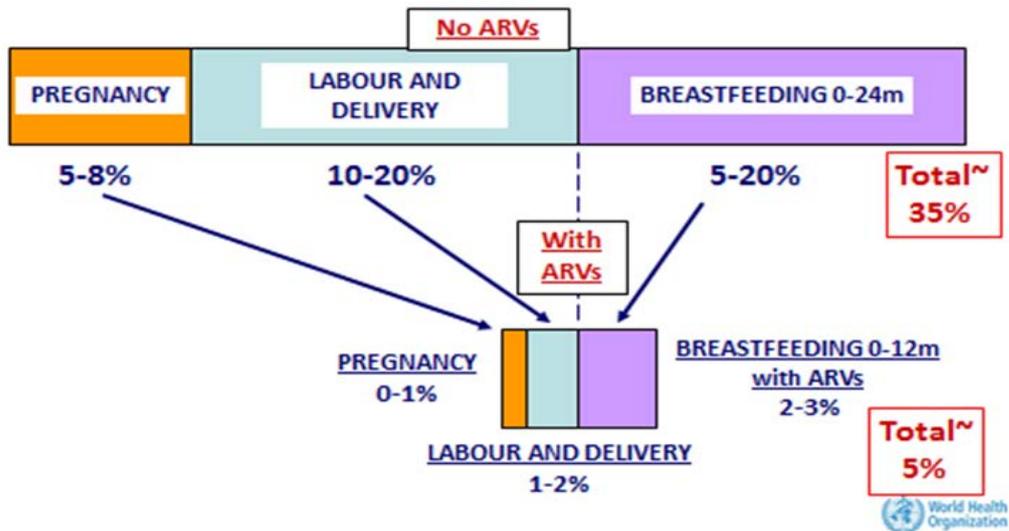
Point out that in total, without any interventions, about 8 out of 20 babies of HIV-positive mothers will be infected with HIV, while about 13 will remain HIV negative. This means that most babies born to HIV-positive women will NOT be infected.

Explain that exclusive breastfeeding for the first 6 months of life reduces the risk of HIV transmission through breastfeeding to about 4 percent.

**EXPLAIN** that even with ARVs for mothers and babies, babies need to be protected from illness and poor growth and development by exclusive breastfeeding. Exclusive breastfeeding for the first 6 months of life also reduces the risk of HIV transmission through breastfeeding.

**FACILITATE** discussion and answer any questions the participants have. **TELL** participants that **Handout 8.3. Mother-to-Child Transmission of HIV** contains more detailed information that they can refer to later.

**Mother-to-child transmission of HIV without and with ARVs**



**EXPLAIN** that ARVs in the slide are for both the mother and the baby.

**EXPLAIN** that all pregnant women should be tested for HIV so they know their status and can receive the appropriate infant feeding counselling.

★ **Ask:** ‘What are the risks of breastfeeding for HIV-positive mothers?’

**WRITE** responses on a flipchart and **COMPARE** them to the information in the box below.

**The risks of breastfeeding for HIV-positive mothers**

- As long as the baby is breastfed, there is a risk of transmission of HIV.
- Mixed feeding (breastfeeding and feeding other liquids or foods) increases the risk of HIV transmission. However, mixed feeding is not a reason to stop breastfeeding if the mother is taking ARVs.

★ **Ask:** What are the benefits of exclusive breastfeeding for HIV-positive mothers?’

**WAIT** for a few responses. **REFER** participants to **Handout 8.4. Risks and Benefits of Breastfeeding and Not Breastfeeding**. **COMPARE** responses to the information in the handout. **POINT OUT** any information participants did not mention.

★ **Ask:** ‘What would you counsel a pregnant woman **who doesn’t know her HIV status?**’

**COMPARE** responses with the ANSWER: *To get tested for HIV.* Knowing their HIV status helps pregnant and breastfeeding women make informed decisions about infant feeding.

★ **Ask:** ‘What would you counsel a woman who has been tested and is HIV negative?’

**COMPARE** responses with the ANSWER: *To breastfeed exclusively, practice safer sex and get tested for HIV regularly.*

★ **Ask:** ‘Given what we learned just now about HIV transmission through breastfeeding, how would you counsel an HIV-**positive** pregnant woman to feed her baby when it is born?’

**COMPARE** responses with the ANSWER: *To breastfeed exclusively*

**SHOW** **slide 8.5**. **EXPLAIN** that in 2016 WHO recommended that ***HIV-positive mothers should breastfeed exclusively for 6 months, then introduce complementary feeding and continue breastfeeding for at least the first 12 months of their babies’ lives.*** At 12 completed months, mothers should stop breastfeeding ONLY if they can feed their babies a nutritionally adequate diet. The babies should take Nevirapine until up to 1 week after they mothers stop breastfeeding. This is because ARVs reduce the risk of HIV transmission through breastfeeding.

**EXPLAIN** that in 2016, WHO recommend that ***ALL HIV-positive pregnant and breastfeeding women should be put on ART regardless of their CD4 count or disease stage and kept on ART for life.*** This is recommended by the Government of Zambia.

**REFER** participants to **Handout 8.5. Infant Feeding in the Context of HIV** for more details on this recommendation.

**ASK** participants to turn back to **Handout 4.9. Case Scenarios**. **ASK** a volunteer to read case scenario 9 aloud.

**Case scenario 9. Luwi** is a 22-year old HIV-positive pregnant woman. She has come to the health centre for regular follow-up. She is 36 weeks pregnant, and her Hb is 8.5 g/dl. Her MUAC is 18.5 cm. She says she doesn’t take iron tablets because they make her feel nauseated. She also says that she is worried about how to feed her newborn after delivery, because friends told her HIV could be transmitted through breast milk. Luwi lives with her mother-in-law in a house with no running water.

**ASK** volunteers to come to the front of the class to role-play counselling Luwi using the information they read in **Handout 7.2. Counselling on Good Nutrition in Pregnancy**, **Handout 7.3. Counselling Pregnant and Breastfeeding Women on Anaemia** and **Handout 8.5. Infant Feeding in the Context of HIV**. **GIVE** 10 minutes for the role-play.

**ASK** the rest of the participants to fill in information the ‘counsellor’ may have missed. **ANSWERS** are in italics in the box below. **FACILITATE** discussion on how participants can support mothers with similar problems.

**Case scenario 9. Luwi** is a 22-year old HIV-positive pregnant woman. She has come to the health centre for regular follow-up. She is 36 weeks pregnant, and her Hb is 8.5 g/dl. Her MUAC is 18.5 cm. She says she doesn’t take iron tablets because they make her feel nauseated.

**Nutrition goals:** *Manage side effects of iron tablets.*

**Counselling messages:** *Lack of enough iron in your diet can cause anaemia, which makes you weak. It could even cause death if you lose blood during delivery. To prevent anaemia, take 200 mg of iron and 5 mg of folic acid beginning in your 4<sup>th</sup> month of pregnancy and continue taking it until you deliver.*

*Iron and folic acid tablets can cause nausea. To prevent nausea, take the tablets 1 hour before you go to bed. Don’t eat any dairy products 1 hour before taking the pills.*

*If you are nauseated, eat small, frequent meals. Avoid an empty stomach. Don’t lie down immediately after you eat. Avoid spicy foods, coffee and tea and drink a lot of water.*

#### TOPIC 4. Feeding Children 6–24 Months (15 minutes)

★ **Ask:** ‘What is complementary feeding?’

**COMPARE** responses with the **ANSWER:** *Giving other foods in addition to breast milk after a baby reaches the age of 6 months.* **EXPLAIN** that when babies reach the age of 6 months, breast milk alone is no longer enough to meet their nutritional needs. They therefore need other foods and drinks along with breast milk.

★ **Ask:** ‘What should mothers consider when feeding babies older than 6 months?’

**COMPARE** responses to the **ANSWER** below

**EXPLAIN** that as babies get older, mothers should feed them more often and increase the amount of food. They should first feed thick porridge and well-mashed soft fruits and vegetables, then as the babies get older, feed mashed family foods and a variety of foods. They should also maintain good hygiene so babies will not get sick from contaminated food or water. **WRITE** the acronym **F-A-T-V-A-H** on a flipchart. Explain that the letters stand for **Frequent feeding, Adequate food, appropriate Texture and Variety, Active feeding and Hygienically prepared.**

★Ask: 'What is active feeding?'

**COMPARE** responses with the ANSWER: *Feeding children slowly and patiently and making eye contact when feeding.*

**REFER** participants to **Handout 8.6. Feeding Children Older than 6 Months**. **GIVE** them 5 minutes to read through the handout silently. Then **ASK** them to look at the table copied below. **POINT OUT** that as children get older, food should get thicker and the frequency of feeding and amount of food should gradually increase.

Complementary feeding according to age				
Age	Energy needed per day plus energy from breast milk	Texture	Frequency	Amount to feed at each meal
6–8 months	200 kcal	Start with thick porridge and well-mashed soft fruits and vegetables. Continue with mashed family foods.	2–3 meals per day plus 1–2 snacks if child has enough appetite	Start with 2–3 tablespoons per feed and increase gradually to $\frac{1}{2}$ cup
9–11 months	300 kcal	Finely chopped or mashed foods and foods the baby can pick up	3–4 meals per day plus 1–2 snacks if child has enough appetite	Increase gradually to $\frac{3}{4}$ cup.
12–24 months	550 kcal	Family foods, chopped or mashed if necessary	3–4 meals per day plus 1–2 snacks if child has enough appetite	1 cup

★Ask: How much food should a baby eat between the ages of 1 and 2 years?'

**COMPARE** responses to the ANSWER: *3–4 meals a day of about 1 cup of food per meal plus 1–2 snacks.*

## TOPIC 5. Feeding Children during Illness and Recovery (5 minutes)

★Ask: 'Why should caregivers encourage children to eat even when they are sick?'

**COMPARE** responses to the ANSWERS: *Children who are sick can become malnourished and at higher risk for more illness. Even if children don't seem to have an appetite, they need to eat to get enough nutrients to make up for losses from diarrhoea, vomiting and appetite loss and to strengthen their immune systems.*

**REFER** participants to the sample meal plan at the end of **Handout 8.6. Feeding Children 6–24 Months** for children that are ill or are recovering from illness.

**Discussion (5 minutes)**

**ALLOW** time for questions and **DISCUSS** any issues that need clarification.

## SESSION 9. NUTRITION SUPPORT

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**Duration:** 1 hour 50 minutes

### Purpose

This session describes types of nutrition support that can be provided in health facilities and prepares participants to manage specialised food products for treatment of malnutrition and to refer malnourished clients to economic strengthening/livelihoods/food security (ES/L/FS) support.

### Objectives

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

- List the kinds of nutrition support health facilities can provide.
- Describe the types and purposes of specialised food products.
- List entry and exit criteria for specialised food products.
- Order, store, prescribe, record and report on NACS commodities.
- Refer malnourished clients to other needed support.

### Materials

- PowerPoint slides for Session 9
- 6 packets each of RUTF and HEPS
- 6 NACS Commodity Prescription Forms
- **Handout 9.1. Recommended Micronutrient Supplementation in Zambia**
- **Handout 9.2. Specialised Food Products**
- **Worksheet 9.3. Specialised Food Product Exercise**
- **Handout 9.4. Specialised Food Product Entry, Transition and Exit Criteria**
- **Handout 9.5. Counselling Messages on Specialised Food Products**
- **Handout 9.6. Specialised Food Product Logistics and Supply Chain Management**

### Advance preparation

1. Review slides 9.1 to 9.19.
2. Review Handouts 9.1 to 9.6 in the *Participant Handouts*.

### Review of Session 8. Nutrition Care for Children of HIV-Positive Mothers (5 minutes)

**ASK** the following questions:

1. How long should women breastfeed exclusively? *ANSWER: 6 months*
2. What is the risk of mother-to-child transmission of HIV if the mother breastfeeds exclusively for up to 2 years? *ANSWER: 4 percent*
3. What conditions should be met for an HIV-positive woman to formula feed her baby?

ANSWERS:

- *Access to safe water and sanitation*
- *Ability to buy enough formula to support normal infant growth and development*
- *Ability to prepare formula correctly and often enough so that it is safe*
- *Ability to feed formula exclusively for the first 6 months*
- *Family support for exclusive replacement feeding*
- *Access to comprehensive child health services*

### TOPIC 1. Session Objectives (5 minutes)

**PRESENT** the session objectives on **slide 9.1** or on a flipchart.

### TOPIC 2. Nutrition Support in Health Facilities (10 minutes)

**REMINDE** participants that NACS includes nutrition assessment, nutrition counselling and nutrition support and that each component is equally important.

★ **Ask:** What kinds of nutrition support do your health facilities provide?

**LIST** responses on a flipchart. If participants do not mention micronutrient supplements, point-of-use water purification products and specialised food products, **REMINDE** them that these are also part of nutrition support.

**POINT OUT** that eating a healthy diet is the best way to ensure adequate intake of vitamins and minerals. However, high-risk groups such as children and pregnant and breastfeeding women may need micronutrient supplements to treat or prevent micronutrient deficiencies.

**REFER** participants to **Handout 9.1. Recommendations for Micronutrient Supplementation in Zambia**. **EXPLAIN** the recommended dosages for different groups.

### TOPIC 3. Definition and Purpose of Specialised Food Products (30 minutes)

**EXPLAIN** that specialised food products are one form of nutrition support, which health facilities can provide as medicine to treat acute malnutrition.

**STRESS** that even if health facilities do not have specialised food products, health care providers can counsel clients on how to eat a mixed (balanced) diet and to get enough energy and nutrients. They can also refer clients to livelihoods and food security support in the community to help them buy nutritious food.

★ **Ask:** 'What is the purpose of specialised food products?'

**SHOW** **slide 9.2**, copied below.

### Purpose of specialised food products

- Manage SAM and MAM.
- Improve adherence to treatment.
- Improve the effectiveness of medicines and help manage side effects.
- Improve birth outcomes of HIV-positive pregnant women and promote HIV-free survival of infants and children.
- Improve functioning and quality of life.

**REFER** participants to **Handout 9.2. Purpose of Specialised Food Products**. **ASK** volunteers to take turns reading the first three paragraphs aloud.

★ **Ask:** ‘How are specialised food products different from food support?’

**COMPARE** responses to the information on **slide 9.3** and in the box below. **FACILITATE** discussion. **STRESS** that specialised food products are **medicine, not food**.

### Difference between specialised food products and food support

- Food assistance like that provided by the World Food Programme aims to increase food security, targeting families with household food rations that often consist largely of staple foods.
- Specialised food products are prescribed based on individual nutrition assessment to improve health and nutritional status.

★ **Ask:** ‘What specialised food products are available in Zambia?’

**COMPARE** responses with the information on **slides 9.4 and 9.5** and **FACILITATE** discussion.

★ **Ask:** ‘Who is eligible for specialised food products?’

**REFER** participants again to **Handout 9.2. Purpose of Specialised Food Products**. **ASK** a volunteer to read the section on ‘Target groups for specialised food products’ aloud.

**SHOW** **slide 9.6**. **EXPLAIN** that health care providers should NEVER prescribe RUTF or HEPS to babies under 6 months and should ALWAYS counsel caregivers not to feed these products to babies under 6 months. This is because these products are not nutritionally adequate for babies this age, who should only receive breast milk.

**ASK** participants to form small groups of four each. **GIVE** a packet of RUTF and a packet of HEPS to each group. **REFER** participants to **Worksheet 9.3. Specialised Food Product Exercise** in the *Participant Handouts*.

**ASK** each group to complete the worksheet. **GIVE** 10 minutes for this activity. At the end of 10 minutes, **ASK** two groups to share their results in plenary. The **ANSWERS** are in italics in the table below.

Question	RUTF	HEPS
1. Name of the specialised food product		
2. Number of grams in the packet	<i>92</i>	<i>100</i>
3. Total kilocalories per packet	<i>500</i>	<i>410</i>
4. Micronutrients	<i>23 (13 vitamins and 10 minerals)</i>	
5. Level of Recommended Dietary Allowance (RDA) of most of the micronutrients	<i>Approximately 1</i>	
6. Is water needed for preparation? (Y/N)	<i>No</i>	<i>Yes</i>
7. Is water needed when you eat the food? (Y/N)	<i>Yes</i>	<i>Yes</i>
8. Taste, consistency and texture	<i>(up to each participant)</i>	<i>(up to each participant)</i>
9. Expiry date	<i>(depends on the package)</i>	<i>(depends on the package)</i>

#### TOPIC 4. Prescription of Specialised Food Products (15 minutes)

**REFER** participants to **Handout 9.4. Entry, Transition and Exit Criteria for Specialised Food Products**. **POINT OUT** that red (for 'danger') indicates SAM and yellow indicates MAM. **GIVE** participants 5 minutes to read through the table.

**ASSIGN** each group a target group, as shown below.

- Groups 1 and 2: Children 6–59 months
- Groups 3 and 4: Children 5–14 years
- Group 5: Adults (non-pregnant/non-postpartum)
- Group 6: Pregnant/postpartum women

**ASK** each group to write on a flipchart the criteria for receiving RUTF and HEPS for its target group. The groups should include anthropometric cutoffs and the amounts of specialised food products to prescribe. **GIVE** 5 minutes for this activity. At the end of 5 minutes, **ASK** groups 1, 3, 5 and 6 to present their results and **COMPARE** them to **Handout 9.4. Entry, Transition and Exit Criteria for Specialised Food Products**.

**DISTRIBUTE** a NACS Commodity Prescription Form, copied below, to each group. **GO OVER** the headings on the form. **EXPLAIN** that in facilities where this form is available, it should be completed for each client who needs specialised food products.

**NACS COMMODITY PRESCRIPTION FORM**

**PF No.**

**2937**

Name of facility \_\_\_\_\_  
 Patient name \_\_\_\_\_ ART No.: \_\_\_\_\_

Severe malnutrition prescribed product (tick appropriate box)	RUTF <input type="checkbox"/> HEPS <input type="checkbox"/> Chlorine <input type="checkbox"/>	Moderate malnutrition prescribed product (Tick appropriate box.)	RUTF <input type="checkbox"/> HEPS <input type="checkbox"/> Chlorine <input type="checkbox"/>
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Amount collected (write in box)	RUTF (Sachets)	
	HEPS (Packs)	
	Chlorine (Bottles)	
	Other	

Eligibility criteria (tick appropriate box)	BMI	Name of prescriber _____
	MUAC	Designation _____
	W/H Z-score	Signature _____
	Oedema	Date _____
	Exposed child (6–24 months)	Name of disburser _____
		Signature _____
	Date _____	

**REFER** participants to **Handout 9.5. Counselling Messages on Specialised Food Products**. **ASK** one volunteer to read the counselling messages for RUTF and another volunteer to read the messages for HEPS.

★ **Ask:** ‘What challenges might clients face using specialised food products?’

**COMPARE** responses to the information in the box below and **FACILITATE** discussion.

**Specialised food product challenges**

- Clients may not have access to clean, safe (boiled or treated) water to drink with the RUTF or use to prepare the HEPS.
- Clients may not like the taste or texture and may not want to eat the entire ration.
- Clients may share the products with other people in the family. If they do that, the malnourished person who was supposed to eat the products will not recover.

## TOPIC 5. Supply Chain Management (40 minutes)

**SHOW slide 9.7.** **EXPLAIN** that supply chain management is the process of procuring, transporting, storing and distributing commodities. The first link in the chain is the supplier in Lusaka. The second link is the district warehouse. The third link is the health facility, which will store, prescribe, dispense, record and report on specialised food products for malnourished clients. The fourth link is the client who receives the commodities.

★ **Ask:** 'Where do health facilities get specialised food products?'

**EXPLAIN** that RUTF comes from Medical Stores, Ltd. in Lusaka and is sent to a central storage facility in each district. HEPS is transported from the manufacturer to the District Health Office for storage in a central storage facility for further distribution to health facilities.

**REFER** participants to **Handout 9.6. Specialised Food Product Logistics and Supply Chain Management.** **EXPLAIN** that you will go over each step health facilities should follow to manage specialised food products.

### Receiving supplies

**EXPLAIN** that when the commodities arrive at the district warehouse (or the health facility, if it receives the commodities directly because it has run out of stock completely), the person in charge of receiving them should follow the steps below.

**SHOW slide 9.8.** Inspect the Delivery (or Dispatch) Note from the manufacturer or transporter to make sure the supplies received match the order form. For each delivery, verify the Certificate of Analysis. Check the expiry date to make sure the items have not expired. If the supplies are damaged or missing, record the quantity that is damaged or missing on the Delivery (or Dispatch) Note. Check the batch numbers on the supplies. Sign the Delivery (or Dispatch) Note. One copy stays in the file and another goes back with the transporter.

If the supplies are not damaged or missing, enter the information on the Delivery (or Dispatch) Note in the Goods Received Notebook to confirm that the supplies were received in good condition. The Goods Received Note should stay at the warehouse or health facility. It is an auditable document. Show **slide 9.9** and review the contents of the Goods Received Note.

**CONFIRM** that the participants understand the procedure for receiving NACS commodities. If not, **EXPLAIN** anything that is not clear.

## Recording stock

**SHOW** slide 9.10. **EXPLAIN** that the next step is to fill out a Stock Record Card for each item with the date it was received. **SHOW** slide 9.11 and **REVIEW** the contents of the Stock Record Card.

- Description: Name of the product
- Unit of Issue: e.g., 92 g packet, 100 g bag
- Maximum stock: Established maximum amount of stock
- Minimum stock: Established level below which stock should not fall

**EXPLAIN** that this card shows what supplies are in stock, what supplies are issued each day and what supplies are expired, nearly expired or damaged. It stays with the supplies on the shelf and is updated each time supplies are dispensed from the store room or pharmacy.

**EXPLAIN** that separate stock cards should be filled out for RUTF and HEPS. Only one transaction should be entered on each line. The stock card every time a health facility receives a specialised food product or prescribes it to a client.

**EXPLAIN** that when both sides of the stock card are full, a new one should be attached to the top of the old one. 'B/F' for 'balance forward' should be written on the first line. The quantity brought forward from the old card should be written on in the first 'Quantity Received' space in the new card. After recording inventory, skip a line, leave it blank and then begin recording the next month's transactions on the next line.

**EXPLAIN** that stock cards should be checked regularly to make sure the information on the cards matches the actual supplies. Any difference should be recorded and reported to the in-charge.

**CONFIRM** that participants understand the procedure for recording stock. If not, **ANSWER** questions until everyone understands the procedure.

## Storing specialised food products

**SHOW** slide 9.12. **EXPLAIN** that specialised food products must be stored carefully to protect their quality and make them easily available for use. If they are not stored correctly, their shelf life may be reduced. RUTF has a shelf life of 2 years. HEPS has a shelf life of 1 year.

**EXPLAIN** that each health facility should have a dedicated space to store specialised food products. The space should be well lit, ventilated, dry and free of insects and rodents that can eat and contaminate the products. Specialised food products should be stored on shelves or on pallets, not directly on the ground. The pallets should be at least 10 cm off the floor, 30 cm away from the wall and other stacks and stacked no more than 2.5 m high.

**SHOW** slide 9.13. **EXPLAIN** that boxes should be stored with the arrows facing up and the names visible. Only authorised people should be allowed to enter the store room. First in/first out (FIFO) procedures should be followed, and no expired products should ever be given

to clients. If possible, specialised food products should be stored separately from medications, chemicals and other supplies.

**CONFIRM** that participants understand the procedure for storing specialised food products. If not, answer questions until everyone understands the procedure.

### Prescribing and dispensing specialised food products

**SHOW slide 9.14. EXPLAIN** that when a health care provider prescribes RUTF or HEPS to a malnourished client, the prescription should also be written on a **Ration Card** that is given to the client to bring back on every visit until the treatment ends. When the client is discharged, the Ration Card should be attached to his or her file in the health facility. **SHOW** a sample Ration Card in **slide 9.15**.

**ASK** participants to break into their small groups. **ASSIGN** one of the target groups below to each group.

- Children 6–59 months
- Children 5–14 years
- Non-pregnant/postpartum adults
- Pregnant/postpartum women

**ASK** the groups to fill out the Ration Card in the *Participant Handouts* for either a severely malnourished or moderately malnourished client for its assigned group. **GIVE** 5 minutes for this activity. At the end of 5 minutes, **ASK** each group to present in plenary.

**SHOW slide 9.16. EXPLAIN** that the pharmacist or ART dispenser who gives the specialised food products to the client should fill out the Master Beneficiary Register with the type and amount prescribed and dispensed. This register stays in the pharmacy or point where commodities are dispensed.

**CONFIRM** that participants understand the procedure for prescribing and dispensing specialised food products. If not, answer question until everyone understands the procedure.

### Reordering specialised food products

**SHOW slide 9.17. EXPLAIN** that the in-charge or pharmacist should use an Internal Requisition Form or Supply Voucher to order supplies. **SHOW slide 9.18** and **REVIEW** the contents of a sample Supply Voucher. The completed form or voucher should be signed by the in-charge and given it to the District Nutritionist for counter-signature.

**EXPLAIN** that the Internal Requisition Book or Supply Voucher should be taken to the warehouse every time a facility goes to collect RUTF or HEPS.

**CONFIRM** that participants understand the procedure for reordering specialised food products. If not, answer question until everyone understands the procedure.

### Disposing of empty packets

**SHOW** slide 9.20. **EXPLAIN** that the packaging of RUTF and HEPS is not biodegradable and will pollute the environment. Health care providers should counsel clients NOT to burn or throw away the empty packets. Instead, they should take them back to the health facility for incineration or disposal.

**EXPLAIN** that a health facility with damaged or expired specialised food products should notify the Environmental Health Team to dispose of them.

### Discussion (5 minutes)

**ALLOW** time for questions and **DISCUSS** any issues that need clarification.

## SESSION 10. VISIT TO A HEALTH FACILITY

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**Duration:** 5 hours

### Purpose

This session will allow participants to observe and assess nutrition care and support in a health facility or community setting.

### Objectives

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

1. Describe the content, quality and delivery of NACS services observed.
2. Discuss how to apply the knowledge and skills learned in this course in their workplaces.

### Materials

- PowerPoint slides for Session 10
- **Handout 10.1. Site Visit Guide**
- **Annex 6. Health Facility Visit Planning Guide**

### Advance preparation

1. Make an appointment in advance with the selected health facility and unit (e.g., voluntary HIV counselling and testing clinic, maternal and child health/PMTCT clinic, inpatient ward for children, inpatient ward for adult) or OVC or home-based care (HBC) site, explaining the purpose of the visit.
2. Review slides 10.1 to 10.6.
3. Review Handout 10.1 in the *Participant Handouts*.
4. Follow the steps in Annex 6. Health Facility Visit Planning Guide.

### TOPIC 1. Session Objectives (5 minutes)

**PRESENT** the session objectives on **slide 10.1** or on a flipchart.

### TOPIC 2. Instructions for the Health Facility Visit (15 minutes)

**DIVIDE** participants into small groups depending on the number of sites to visit. **ASK** each group to choose a group leader.

**SHOW** **slide 10.2** to explain the purpose of the field visits. **EXPLAIN** the sites the groups will visit and the reasons for choosing those sites. **EXPLAIN** that the field visit will last for 3 hours, including time to travel to and from the sites.

**REFER** participants to **Handout 10.1. Field Visit Guide**. **EXPLAIN** that each group should fill out the handout based on observations and experience during the site visit.

**SHOW slide 10.3.** **INSTRUCT** the groups to observe and record observations on the nutrition services provided in the site, take anthropometric measurements of at least three clients, classify their nutritional status and provide basic counselling messages based on the results.

**EXPLAIN** that the groups will meet back in the classroom to present their results and discuss their experience.

### **TOPIC 3. Health Facility Visits (3 hours)**

When you arrive at the health facility, **MEET** the manager or in-charge to introduce the participants. **CONFIRM** which health care providers the participants will observe.

Then **BRIEF** the health care providers on the purpose of the visit and **INTRODUCE** the participants. **EXPLAIN** that the visit is not a test but a way for the participants to see NACS interventions in a real setting and practice what they have learned in training.

After the visit, **THANK** the facility manager and health care providers.

### **TOPIC 4. Report Preparation (40 minutes)**

When the participants return to the classroom, **SHOW slide 10.4.** **ASK** each group to consolidate and summarise its notes on **Handout 10.1. Site Visit Guide** and **PREPARE** a brief report to present in plenary.

### **TOPIC 5. Feedback on Health Facility Visits (60 minutes)**

**ASK** each group to present its observations and experience during the health facility visits. **ALLOW** discussion and **SUMMARISE** the feedback. **FOCUS** the discussion on the participants' experience in applying the skills they learned in training, changes they suggest to improve services in the health facilities visited and ways they could improve NACS services based on the experience from the visits.

## SESSION 11. HOUSEHOLD FOOD SECURITY AND NUTRITION

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**Duration:** 1 hour

### **Purpose**

This session explains the link between malnutrition and food insecurity to help participants refer malnourished clients to economic and social support.

### **Objectives**

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

1. Describe how food insecurity can affect nutrition.
2. Discuss how to help clients improve their food security.

### **Materials**

- PowerPoint slides for Session 11
- *Guidelines for Nutrition Care and Support of People with HIV*
- **Handout 11.1. Support to Improve Access to Food**

### **Advance preparation**

1. Review slides 11.1 to 11.5.
2. Review Handout 11.1 in the *Participant Handouts*.
3. Read Chapter 8. 'Food Security in HIV-Affected Households' in the *Nutrition Guidelines for Care and Support for People with HIV*.

### **Review of Session 10. Nutrition Support (5 minutes)**

**ASK** the following questions:

1. What is the purpose of specialised food products?

POSSIBLE ANSWERS:

- *Manage SAM and MAM.*
- *Improve adherence to treatment.*
- *Improve the effectiveness of medicines and help manage side effects.*
- *Improve birth outcomes of HIV-positive pregnant women and promote HIV-free survival of infants and children.*
- *Improve functioning and quality of life.*

2. What are the target groups for specialised food products?

ANSWERS:

- *Children and adolescents 6 months–17 years*
- *Adults (non-pregnant/non-postpartum)*
- *Pregnant/postpartum women*

3. What criteria qualify non-pregnant, non-breastfeeding adults for RUTF?

ANSWERS:

- *Bilateral pitting oedema* **OR**
- *BMI < 16.0* **OR**
- *MUAC < 18.5 cm*

4. What criteria qualify children 6–59 months for HEPS?

ANSWERS:

- *WHZ  $\geq -3$  and  $< -2$*  **OR**
- *MUAC  $\geq 11.5$  to  $< 12.5$  cm*

## TOPIC 1. Session Objectives (5 minutes)

**PRESENT** the session objectives on **slide 11.1** or on a flipchart.

## TOPIC 2. The Effects of Household Food Security on Nutrition (25 minutes)

★ **Ask:** ‘What is food security?’

**COMPARE** responses to the information on **slide 11.2**, copied in the box below and **FILL IN** gaps as needed.

### Food security

Food security means all people at all times having sufficient, safe and nutritious food that meets their needs for an active and healthy life.

Food security has four components:

- *Availability*—Enough nutritious food at all times
- *Access*—Enough money to buy nutritious foods to maintain good health.
- *Utilisation*—Proper use of nutrients by the body, good care and feeding practices, food preparation, diversity of the diet and equitable distribution of food to all members of the household
- *Stability*—The other three components are not affected by adverse weather, political instability or economic factors (unemployment, rising food prices)

★ **Ask:** ‘How can household food insecurity affect nutrition?’

**COMPARE** responses to the information on **slides 11.3 and 11.4** and **FILL IN** gaps as needed from the box below.

### How food insecurity affects health and nutrition

- People who don't have enough money to buy or cannot grow nutritious food can become malnourished.
- Food-insecure people may use risky behaviour (e.g., selling sex or migrant work) that make them more vulnerable to HIV and wasting.
- Widows and orphans may be forced from their homes or land.
- People who have been treated for malnutrition may become malnourished again if they don't have enough nutritious food to eat.
- Worry increases stress, affecting the immune system.
- People may have to choose between spending money on food or on health care.

**FACILITATE** discussion about clients who can't afford nutritious food and health care.

### TOPIC 3. Improving Food Security for NACS Clients (20 minutes)

★ **Ask:** 'What kinds of support in the areas where you work can help people improve their food security?'

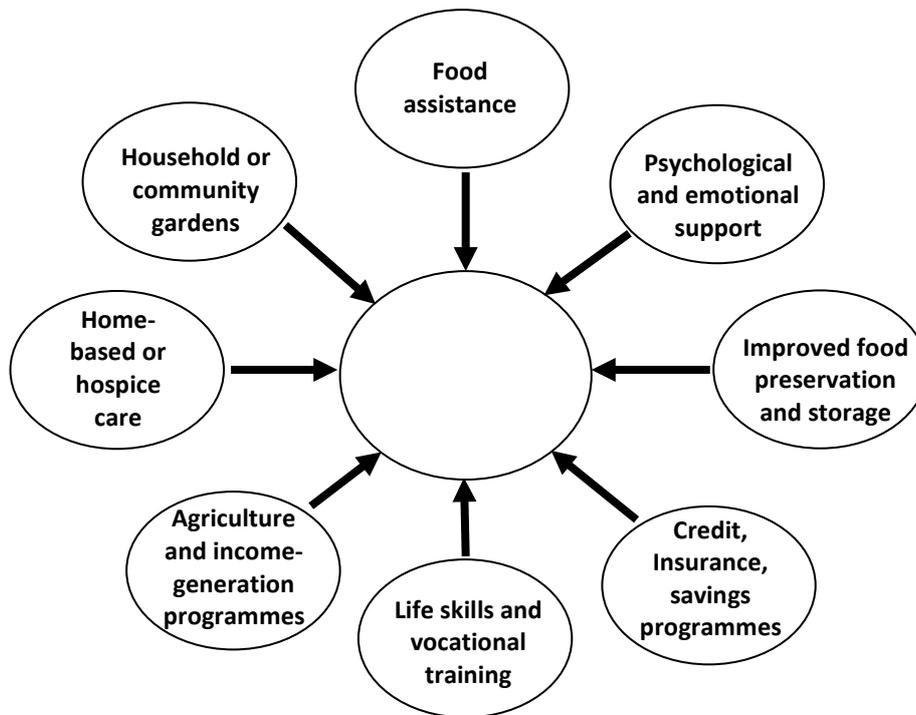
**EXPLAIN** that livelihoods and food security support may be provided by the government, nongovernmental organisations (NGOs), churches or businesses.

**COMPARE** responses to the information on **slide 11.5**, copied below. **ASK** participants whether such support is available in their communities.

#### Ways to improve food security

- Support for agriculture or small enterprises (e.g. *intembas*, food security packages)
- Support for vegetable gardening and orchards
- Promotion of chicken or rabbit rearing
- Labour-saving technologies such as efficient cooking stoves
- Teaching people how to preserve and store food (e.g., dried pumpkin leaves, dried mangos) for future use
- Community savings and loan groups

**REFER** participants to **Handout 11.1 Support to Improve Access to Food**, copied below. **ASK** the support in the circles is available in the communities where they work.



**EXPLAIN** that health care providers should know what support is available in their communities so they can refer clients to that support. Clients should be linked to such support as soon as they begin treatment for malnutrition so that by the time they are ready for discharge from treatment (especially treatment with specialised food products), they will have economic support to avoid becoming malnourished again.

### Discussion (5 minutes)

**ALLOW** time for questions and **DISCUSS** any issues that need clarification.

## SESSION 12. HEALTH FACILITY-COMMUNITY LINKAGES

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**Duration:** 1 hour 40 minutes

### Purpose

This session explains the need for continuum of care for clients between health facilities and community support for improved nutrition.

### Objectives

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

1. Explain why it is important to follow up malnourished clients to ensure they recover from malnutrition and are not lost to follow-up.
2. Refer clients to medical or community support services.
3. Receive clients needing medical care referred from the community.

### Materials

- PowerPoint slides for Session 12
- *Nutrition Guidelines for Care and Support of People with HIV*
- **Handout 12.1. Health Facility-Community Linkages**
- **Handout 12.2. Continuum of Care**
- **Handout 12.3. Types of Home-Based Care**
- **Handout 12.4. Sample Referral Form**

### Advance preparation

1. Review slides 12.1 to 12.10.
2. Review Handouts 12.1 to 12.4 in the *Participant Handouts*.

### Review of Session 11. Household Food Security and HIV (5 minutes)

**ASK** the following questions:

1. How can food insecurity affect people with HIV?

#### POSSIBLE ANSWERS

- *It may lead to risky behaviours such as selling sex for money or to migrant labour, which increases exposure to HIV.*
- *It can lead to malnutrition, which can decrease the effectiveness of ARVs.*
- *It can increase stress and depression.*
- *People may have to choose between spending money on food or on health care.*

2. How can people with HIV be helped to improve their food security?

#### POSSIBLE ANSWERS

- *Support for agriculture (e.g., vegetable gardens) or small enterprises*
- *Provision of labour-saving technologies such as efficient cooking stoves*
- *Instruction on how to preserve nutritious foods*

## TOPIC 1. Session Objectives (5 minutes)

**PRESENT** the session objectives on **slide 12.1** or on a flipchart.

## TOPIC 2. Health Facility-Community Linkages (25 minutes)

★ **Ask:** ‘Why is it important for health facilities to link with communities for care of NACS clients?’

**WRITE** responses on a flipchart. **COMPARE** them with the information in the box below.

### Importance of linking health facilities and community outreach

- Increases community understanding of the importance of nutrition and the availability of NACS services
- Strengthens case finding and referral of malnourished people that may not go to health facilities
- Allows early detection and follow up of malnutrition to improve clinical outcomes and relieve in-patient services
- Links prevention and treatment of malnutrition

**DIVIDE** participants into their small groups of four. **SHOW slide 12.2.** **ASK** each group to answer the questions on the slide, copied below. **GIVE** s 10 minutes for this activity.

1. What systems do your facilities use to link with catchment communities?
2. What support services do you refer clients to? (Note that these kinds of services might be provided by the government, NGOs, churches and businesses). **WRITE** responses on a flipchart. If participants do not mention the following kinds of support, **PROMPT** for them:
  - Food aid
  - Income-generating activities
  - Government grants/transfers
  - Cash/food-for work
  - Agricultural support
  - Home gardening support
  - Job placement support
  - Insurance
3. What challenges do you face in linking clients to community support services?
4. How could you address those challenges?
5. What tools are needed to make these referrals easier and more effective (e.g., referral forms, service directories, client tracking tools)?

After 10 minutes, **ASK** the groups to share their results and facilitate discussion.

**REFER** the groups to **Handout 12.1. Health Facility–Community Linkages**, copied in the box below. **ASK** volunteers to take turns reading each paragraph aloud.

### **Health facility-community linkages**

Health facilities cannot meet all the needs of people at risk of malnutrition. Some of those needs are social or emotional or financial.

Community members can support health services in many ways. They can give people information on good health practices, provide psychosocial and spiritual support, help people adhere to prescribed medications and make sure people go to health facilities when they are ill and do not miss follow-up appointments.

Friends, families and support groups can help people deal with the emotional effects of chronic illness and feelings of isolation.

★ **Ask:** ‘What are some of the obstacles to people using NACS services?’

**COMPARE** responses with the information in the box below and fill in gaps as needed.

### **Obstacles to uptake of NACS services**

- Lack of knowledge of the services available
- Lack of knowledge of the signs and consequences of malnutrition
- Long distances to health care facilities
- Poor integration of NACS into reproductive and child health, DOTS, ART and outpatient departments
- Stigma associated with HIV and TB
- Preference for traditional healers

★ **Ask:** ‘How could health facilities increase uptake of NACS services?’

**WRITE** responses on a flipchart and **COMPARE** them with the information on **slide 12.3**. **USE** the information in the box below to fill in gaps. **FACILITATE** discussion.

### Ways to increase NACS service access and use

1. Provision of health and nutrition education materials (posters, brochures) about signs and risks of malnutrition
2. Health education to increase awareness of the importance of nutrition and the signs and consequences of malnutrition
3. Community volunteer home visits and counselling/food demonstrations
4. Provision of information to local leaders and media
5. Integration of NACS into key contact points of health services
6. Community outreach

**SHOW** **slide 12.4**. Ask participants how community volunteers can help with nutrition screening and referral to clinic services. Facilitate discussion of the role of community volunteers in health facilities and in the community.

### TOPIC 3. Continuum of Care (10 minutes)

★ **Ask**: ‘What is continuum of care?’

**WRITE** responses on a flipchart. **COMPARE** them with the information on **slide 12.5**, copied below.

**Continuum of care** is comprehensive care from the health facility to the home, linking prevention, treatment and follow-up.

**REFER** participants to **Handout 12.2. Continuum of Care**. **ASK** volunteers to read each section aloud. **FACILITATE** discussion about why continuum of care is important. **PROBE** for preventing people from becoming malnourished, following up clients to so they don’t default from treatment and providing support to make sure clients don’t become malnourished again after they recover from malnutrition.

### TOPIC 2. Home-Based Care (15 minutes)

★ **Ask**: ‘What is home-based care?’

**COMPARE** responses to the information on **slide 12.6**, copied below.

**Home-based care (HBC)** provides care and support outside health facilities for people with prolonged illness and their families. It is part of the continuum of care.

**REFER** participants to **Handout 12.3. Types of Home-Based Care**, summarised in the box below.

### Types of home-based care

1. **Facility-based or outreach HBC:** Health care providers visit people in their homes to provide prevention, care and support services.
2. **Home-based care:** Volunteers provide basic nursing care well as emotional and spiritual support; linked to health facilities for professional support, referral, monitoring, supervision and supplies.
3. **Hospice (nursing home) care:** Health care providers or social workers care for chronically ill and aged clients who can no longer be taken care of at home.
4. **Palliative care:** Treats pain and other physical problems and addresses psychosocial and spiritual needs.

★ **Ask:** ‘What nutrition support can community volunteers provide?’

**WRITE** responses on a flipchart and **COMPARE** them to the information on **slide 12.7**, copied below.

### Nutrition interventions that can be provided by community volunteers

- Measure MUAC, check child growth cards and assess for bilateral pitting oedema.
- Demonstrate how to make nutritious meals.
- Demonstrate how to make food and water safe.
- Demonstrate how to prepare and eat specialised food products.
- Counsel on infant and young child feeding.
- Counsel on dietary management of symptoms and medication side effects.
- Refer clients to health facilities or to economic strengthening and food security support.

### TOPIC 3. Client Follow-up (10 minutes)

★ **Ask:** ‘Have you had clients who did not return for follow-up visits?’

**GIVE** participants time to answer.

★ **Ask:** ‘What experience have you had following up clients after their first visit?’

**EXPLAIN** that participants should include both positive experience and difficulties. **FACILITATE** discussion.

**SHOW** **slide 12.8**. **FACILITATE** discussion about how to contact clients lost to follow-up.

## TOPIC 4. Client Referral (15 minutes)

★ **Ask:** 'What is referral?'

**LIST** responses on a flipchart and **COMPARE** them to the information on **slide 12.9**, copied below.

**Referral** is sending or directing someone to services or care not provided at the current contact point.

★ **Ask:** 'Have you referred clients to other services? For what conditions?'

**WRITE** responses on a flipchart and **COMPARE** them to the information on **slide 12.10**, copied below.

### Conditions that require referral

- Medical complications (e.g., severe vomiting, dehydration, anaemia, high fever)
- Psychiatric conditions (depression, stress)
- Food insecurity
- Unknown HIV status (referral to counselling and testing)
- HIV-positive pregnancy (referral to PMTCT services)

★ **Ask:** 'Where have you referred clients?'

**WRITE** responses on a flipchart.

★ **Ask:** 'What problems have you had referring clients?'

**WRITE** responses on a flipchart.

★ **Ask:** 'How have referrals improved client outcomes?'

**WRITE** responses on a flipchart. **FACILITATE** discussion.

**REFER** participants to **Handout 12.4. Sample Referral Form**. **REVIEW** how to make a referral (tools, feedback, follow-up to make sure the client went to the referral site and was seen).

### Discussion (5 minutes)

**ALLOW** time for questions and **DISCUSS** any issues that need clarification.

## SESSION 13. NACS DATA COLLECTION AND REPORTING

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**Duration:** 3 hours

### Purpose

This session explains the importance of nutrition data and the process of NACS data collection and reporting.

### Objectives

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

1. Explain the purpose of collecting NACS data.
2. Identify NACS indicators.
3. Describe NACS monitoring and reporting requirements.
4. Complete data collection and reporting forms accurately.
5. Interpret nutrition data.

### Materials

- PowerPoint slides for Session 13
- At least 6 copies of the Children’s Clinic Card (either boys or girls)
- At least 6 copies of the Nutrition Register
- Copies of the NACS Client Card for each participant
- Copies of the IMAM/NACS Monthly Report form for each participant
- At least 6 sets of the following SmartCare forms (Adult Initial History and Physical, Adult Clinical Follow up, Paediatric Initial History and Physical and Paediatric Clinical Follow up)
- **Handout 4.9. Case Scenarios**
- **Handout 9.2. Entry, Transition and Exit Criteria for Specialised Food Products**
- **Handout 13.1. NACS Data Management**
- **Handout 13.2. Instructions for Filling out the Nutrition Register**
- **Handout 13.3. NACS Client Card**
- **Handout 13.4. Nutrition Reporting Flow Chart**

### Advance preparation

1. Review all nutrition data collection and reporting tools and understand how to complete them.
2. Review slides 13.1 to 13.3.
3. Review Handouts 13.1 to 13.4 in the *Participant Handouts*.

### Review of Session 12. Health Facility–Community Linkages (5 minutes)

**ASK** the following questions:

1. What is continuum of care? ANSWER: *Comprehensive care from the health facility to the home, linking prevention, treatment and follow-up*

2. Why is continuum of care important? ANSWER: *To prevent people from becoming ill (or malnourished), avoid defaulters and ensure compliance with treatment and make sure clients don't become malnourished again once they've graduated from treatment*
3. What nutrition interventions can be done in home-based care?

ANSWERS

- *Measuring MUAC, checking child growth cards and assessing for bilateral pitting oedema*
- *Demonstrating how to make nutritious meals*
- *Demonstrating how to make food and water safe*
- *Demonstrating how to prepare and eat specialised food products*
- *Counselling on infant and young child feeding and eating a mixed diet*
- *Counselling on dietary management of symptoms and medication side effects*
- *Referring clients to health facilities or to economic strengthening and food security support*

### TOPIC 1. Session Objectives (5 minutes)

**PRESENT** the session objectives on **slide 13.1** or on a flipchart.

### TOPIC 2. Purpose of NACS Data Collection (30 minutes)

**REFER** participants to **Handout 13.1. NACS Data Management**. **ASK** volunteers to read the introduction.

★ **Ask:** 'Why is the purpose of collecting NACS data?'

**LIST** responses on a flipchart and **COMPARE** them to the information on **slide 13.2**, copied in the box below. **FACILITATE** discussion and **FILL IN** gaps as needed.

**Purpose of collecting NACS data**

- To assess client eligibility for nutrition interventions
- To evaluate client progress
- To report on work done
- To monitor stocks and resources
- To inform other services of client needs
- To evaluate the impact of policies and services
- To improve services

★ **Ask:** 'What nutrition data are collected in your workplaces?'

**LIST** responses on a flipchart.

★ **Ask:** ‘What are the steps for nutrition data collection?’

**REFER** participants again to **Handout 13.1. NACS Data Management**. **ASK** a volunteer to read the points under ‘Steps for collecting data’ aloud in plenary.

### TOPIC 3. Nutrition Data Collection Tools (80 minutes)

★ **Ask:** ‘What tools do you use in your health facility to collect nutrition data?’

**LIST** responses on a flipchart.

#### National Nutrition Register

**ASK** participants to work in pairs. **DISTRIBUTE** a copy of the Nutrition Register to each pair.

**REFER** participants to **Handout 13.2 Instructions for Filling out the Nutrition Register**. **ASK** participants to follow along on the register as you **READ** the instructions for each column highlighted in the handout.

#### NACS Client Card

**REFER** participants to **Handout 13.3. NACS Client Card**. **REVIEW** the headings on the card. **FACILITATE** discussion and answer any questions participants have.

**REFER** clients to **Handout 4.9. Case Scenarios**. **ASSIGN** scenario 10 to half of the groups and scenario 11 to the other half.

**Case scenario 10.** Chichi is a 16-year-old boy who comes to the clinic with his mother, who is worried about him because he has had severe diarrhoea for several days. He has not been tested for HIV. He weighs 40 kg and his height is 150 cm. He has bilateral pitting oedema, and his mother says he hasn’t been eating very much.

**Case scenario 11.** Rose is a 34-year-old HIV-positive woman. She is not pregnant. She has had diarrhoea for the past 2 weeks. She lives in an area where tap water is not available. Her BMI is 22, and her Hb is 10 g/dL. She was told that she is eligible for ART. She is afraid of starting ARVs because she does not have enough food and a friend told her that ‘taking medication without good food can kill’.

**ASK** each group to fill out 1) the nutrition register and 2) a client card using the information in the assigned case scenario. **REFER** them to **Handout 9.4 Entry, Transition and Exit Criteria for Specialised Food Products** for help classifying nutritional status. **GIVE** 15 minutes for this exercise. **MOVE** among the groups, giving suggestions and support as needed. After 15 minutes, **ASK** each group to present its completed forms in plenary. Client cards with the correct information are shown on the next pages.





**FACILITATE** discussion and **CLARIFY** anything that participants don't understand.

### Children's Clinic Card

**DISTRIBUTE** a copy of the Children's Clinic Card to each group. **EXPLAIN** that this card is used to monitor children's health and growth.

### SmartCare forms

**DISTRIBUTE** a set of SmartCare forms to each group. **EXPLAIN** that these forms are used to record data on ART clients. The MOH and PEPFAR use them to monitor HIV care and treatment. The forms are not accessible to all health facility staff who may do nutrition assessment (e.g., adherence and psychosocial counsellors) because of confidentiality.

**EXPLAIN** that the nutrition information in the SmartCare forms is used to determine whether clients are eligible for ART, determine ARV dosages and monitor treatment progress. If this information is missing on the SmartCare forms, the clients' HIV care and treatment is incomplete.

**FACILITATE** discussion on how client nutrition data from the Nutrition Register and NACS Client Cards can be transferred into the SmartCare forms. **ASK** who could do this.

## TOPIC 4. Nutrition Indicators (15 minutes)

★ **Ask:** 'What nutrition information/indicators can you find on all these forms?'

**WRITE** responses on a flipchart. **STRESS** that it is important to record nutrition information on each visit to monitor clients' progress.

**SHOW** **slide 13.3**. **ASK** participants whether they can collect information on each of the nutrition indicators on the slide. **ASK** whether other indicators are important to report on.

★ **Ask:** 'Who collects the information? When? How?'

**LIST** responses on a flipchart.

★ **Ask:** 'Who reports on nutrition indicators and to whom?'

**LIST** responses on a flipchart.

## TOPIC 5. Challenges in Data Collection and Management (20 minutes)

★ **Ask:** 'What challenges does your workplace experience in managing nutrition data?'

**COMPARE** responses to the bullet points on the second page of **Handout 13.1. NACS Data Management**, copied below.

### Challenges in data collection and management

- Clients may feel that the questions health care providers ask are intrusive or exploitative.
- Collecting data takes a lot of time and increases health care providers' workloads.
- It may not be clear who is responsible for collecting and reporting nutrition data if there is no nutritionist in the health facility.
- Health facilities may not have standard nutrition data collection tools.
- Weak data collection generates incomplete and inaccurate data that may be useless for decision making.
- Data collectors may lack support from supervisors.
- Health facilities may not receive feedback on data they submit to higher levels.
- Data analysis skills may be weak.
- The health and nutritional status of many people with HIV inevitably declines over the long run, especially if they are not on ART.
- Changes in nutritional status cannot be attributed to NACS only.
- Data on defaulting clients remain incomplete.

★ **Ask:** 'How could you address these challenges?'

**LIST** responses on a flipchart. Compare responses to the information in the box below.

### Ways to improve the quality of nutrition collection

- A professional attitude
- The right tools (simple, short, relevant to work)
- More staff
- Better coordination among different levels and services
- Feedback on the data collected
- Use of the data for client follow-up and in management meetings
- Rewards for complete and accurate data collection

## TOPIC 5. NACS Reporting (20 minutes)

**DISTRIBUTE** a copy of the IMAM/NACS Monthly Report Form to each group. **ASK** the groups to complete the form using the NACS Client Cards they filled out from the case scenarios.

**GIVE** 15 minutes for this activity. After 15 minutes, **ASK** the groups to discuss any challenges they had completing the form. **FACILITATE** discussion on how to address those challenges.

**REFER** participants to **Handout 13.4. Nutrition Reporting Flow Chart**. **EXPLAIN** the monthly reporting requirements and deadlines for health facilities implementing NACS.

### Discussion (5 minutes)

**ALLOW** time for questions and **DISCUSS** any issues that need clarification.

## SESSION 14. NACS ACTION PLANS

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**Duration:** 2 hours

### **Purpose**

This session helps participants make plans for improving the quality of NACS services in their workplaces.

### **Objectives**

By the end of the session, participants will have:

1. Described MOH and Ministry of Community Development and Social Welfare expectations regarding NACS implementation and reporting.
2. Finish action plans to integrate NACS into or strengthen NACS in routine health services.

### **Materials**

- PowerPoint slides for Session 14
- **Handout 14.1. NACS Action Plan Matrix**

### **Advance preparation**

1. Invite a provincial or district MOH and/or Ministry of Community Development and Social Welfare representative to join the training for 1 hour to share expectations for NACS.
2. Review slides 14.1 and 14.2.
3. Review Handouts 14.1 and 14.2 in the *Participant Handouts*.

### **Review of Session 14. NACS Data Collection and Reporting (5 minutes)**

**ASK** the following questions (5 minutes):

1. Why should health care providers collect NACS data? ANSWERS:
  - *To assess client eligibility for nutrition interventions*
  - *To evaluate client progress*
  - *To report on work done*
  - *To monitor stocks and resources*
  - *To inform other services of client needs*
  - *To evaluate the impact of policies and services*
  - *To improve services*
2. What forms should health care providers use to record NACS data? ANSWER:  
*Nutrition register, client card and IMAM/NACS Monthly Report Form*

## TOPIC 1. Session Objectives (5 minutes)

**PRESENT** the session objectives on **slide 14.1** or on a flipchart.

## TOPIC 2. Action Plans (60 minutes)

**EXPLAIN** that participants from each health facility will work together to complete their action plans to apply what they learned in this training to improve NACS services.

**ASK** participants to form their groups of four or regroup by health facility, programme, organisation, region, province or district (if these are different from their original groups.)

**EXPLAIN** that a SMART objective is:

- *Specific* – targets a specific area for improvement
- *Measurable* – quantifies or at least suggests an indicator of progress
- *Assignable* – specifies who will do it
- *Realistic* – states what results can realistically be achieved with available resources
- *Time-related* – specifies when the result(s) can be achieved

**GIVE** the following example of a SMART objective:

- By August 1, 2015, nurses will assess the nutritional status of at least 50 percent of pre-ART and ART clients and record their nutritional status.

**REFER** the groups to **Handout 14.1. Action Plan Matrix**. **EXPLAIN** that they will complete their 6-month action plans to integrate NACS into their work. **SHOW** **slide 14.2** with instructions for the action planning and keep the slide visible throughout the exercise.

**GIVE** the groups 25 minutes to identify and fill out their action plans with activities they can begin 1) immediately and 2) in the next 6 months. **MOVE** among the groups to answer questions and make suggestions, with each facilitator covering two groups.

After 30 minutes, **ASK** each group to present its action plan in plenary. **EMPHASISE** that the groups should try to see the value of other's actions plans and give constructive comments to help the groups improve them. **GIVE** each group 5 minutes for its presentation.

**FACILITATE** discussion.

**ASK** the groups to submit their action plans in soft copy to the trainers and their District Health Office.

**EXPLAIN** that the District Health Office will review the action plans after 3 months and help participants adjust them based on needs and experience after 6 months.

## TOPIC 3. Expected Performance (45 minutes)

**EXPLAIN** that district nutritionists and other staff will make regular supervision and mentoring visits to care and treatment sites to discuss any problems health care providers

have with NACS implementation, recording and reporting and provide mentoring and support to solve those problems.

If an MOH representative can join the training, **INTRODUCE** her/him and **ASK** her/him to present the performance expected of health care providers trained in NACS. Otherwise, **PRESENT** the information in the box below to the participants.

**NACS performance is expected at:**

- Individual health care provider level
- Unit level
- Facility level

**Inputs from government and partners**

- NACS training
- On-site skills-based mentoring and supervision
- Quality assurance and quality improvement
- Anthropometric equipment
- Standard operating procedures (SOP)
- Job aids
- Specialised food products to treat clinical malnutrition

**Expected outputs of health facilities**

- Correct nutrition assessment
- Correct classification of nutritional status and diagnosis of malnutrition
- Appropriate counselling based on nutrition assessment results
- Accurate recording of nutrition information
- Timely reporting of nutrition information

**Expected impacts of NACS services**

- Improved management of malnutrition
- Improved adherence to and efficacy of medications
- Improved management of medication side effects
- Improved birth outcomes for HIV positive pregnant women and HIV-free survival of infants and children
- Improved continuum of care in PMTCT, ART and child health programs
- Improved quality of life for clients

**Discussion (5 minutes)**

**ALLOW** time for questions and **DISCUSS** any issues that need clarification.

## SESSION 15. POST-TEST AND COURSE EVALUATION

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**Duration:** 1 hour

### **Purpose**

In this session participants express their views on how well the course met their expectations and how to improve future courses.

### **Objectives of the session**

By the end of the session, participants will have:

1. Compared their expectations to the course objectives
2. Completed a post-test to assess how much they learned in the course
3. Evaluated the course

### **Materials**

- **Handout 15.1. Course Evaluation Form** (enough copies for all participants)
- **Annex 2. Post-test**
- **Annex 3. Pre- and Post-test Answer Key**

### **Advance preparation**

1. Print copies of Handout 15.1 for all participants.
2. Review slides 15.1 and 15.2.
3. Review Handouts 15.1 to 15.3 in the *Participant Handouts*.

### **TOPIC 1. Session Objectives (5 minutes)**

**PRESENT** the session objectives on **slide 15.1** or on a flipchart.

### **TOPIC 2. Review of Course Objectives and Expected Outputs (15 minutes)**

**REVIEW** the learning objectives of the course on **slide 15.2**.

★ **Ask:** ‘Have we accomplished these objectives? If not, what have we accomplished?’

**LIST** responses on a flipchart.

★ **Ask:** ‘How will you apply what you have learned?’

**LIST** responses on a flipchart.

### TOPIC 3. Post-test (25 minutes)

**DISTRIBUTE** copies of **Annex 2. Post-test** to all participants. **ASK** them to write the same numbers that they wrote on their pre-tests on Day 1. **EXPLAIN** that they will have 15 minutes to complete the post-test.

After 15 minutes, **COLLECT** the post-tests. One or two facilitators should **MARK** them immediately, using **Annex 3. Pre- and Post-test Answer Key**. **RECORD** the post-test scores in the second column of the list of participants and pre- and post-test scores. **USE** this table later during supportive supervision visits to identify participants who may need more NACS mentoring on the job.

**RETURN** the pre- and post-tests to the participants so they can compare their results.

**WRITE** the correct answers on a flipchart for the participants to see.

**TALLY** the scores according to the table below.

Average pre-test score	Average post-test score

On a flipchart, **WRITE** the average pre- and post-test scores.

**ANSWER** any remaining questions.

### TOPIC 4. Final Course Evaluation (15 minutes)

**ASK** each participant to fill out **Handout 15.1. Final Course Evaluation Form** and return the completed forms to the facilitators before they leave. **EXPLAIN** that they should not write their names on the forms.

If time allows, **REVIEW** the evaluations, **SHARE** relevant results with the participants and **FACILITATE** discussion of the quality of the course.

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## ANNEX 1. PRE-TEST

---

Date: \_\_\_\_\_

Title/designation: \_\_\_\_\_

Number: \_\_\_\_\_

Work area (e.g., ANC clinic, ART clinic, maternity ward) \_\_\_\_\_

**Answer the following questions by indicating TRUE (T) or FALSE (F) in the right-hand column. (3 points each)**

1. Malnutrition can be caused by eating too much as well as eating too little.	
2. Good nutrition can improve the effectiveness of medicines.	
3. Bilateral pitting oedema is a clinical sign of marasmus.	
4. Asymptomatic people living with HIV need to consume 15–30 percent more energy than HIV-negative people of the same weight, sex and activity level.	
5. Asymptomatic HIV-positive children with weight loss need to eat 20–30 percent more energy than HIV-negative children of the same age, weight, sex and activity level.	
6. According to WHO, people with HIV do not need more protein or micronutrients than people without HIV.	
7. People taking medicine, including ART, can manage medication-food interactions and side effects by changing their diets.	
8. Rapid weight loss—more than 5 percent of usual body weight over 2–3 months—is associated with opportunistic infections.	
9. People with nausea or vomiting should eat large, infrequent meals.	
10. Bilateral pitting oedema is a sign of severe acute malnutrition.	
11. Telling someone what to do is the surest way to change their behaviour.	
12. HIV-positive mothers should never breastfeed their babies.	
13. MUAC can be measured on any part of the arm.	
14. After washing your hands, you should dry them on a cloth.	

15. Feeding a baby other foods or liquids in addition to breast milk during the first 6 months of life decreases the risk of HIV transmission.	
--	--

**Write the answers to the following questions:**

16. Why is nutrition important for good health? (10 points)
---

17. How does HIV affect nutrition? (5 points)
---

18. What are four types of nutrition assessment? (5 points)
---

19. What anthropometric measurement should be used to assess the nutritional status of pregnant and postpartum women? (5 points)
--

20. What body mass index (BMI) indicates undernutrition and a high risk of illness? (5 points)
--

21. What is the weight-for-height z-score cutoff for severe acute malnutrition (SAM) in children under 5? (5 points)
--

22. Why are safe food and water especially important for people with HIV? (5 points)
--

23. List the Critical Nutrition Actions. (15 points)
--

## ANNEX 2. POST-TEST

---

Date: \_\_\_\_\_

Title/designation: \_\_\_\_\_

Number: \_\_\_\_\_

Work area (e.g., ANC clinic, ART clinic, maternity ward) \_\_\_\_\_

**Answer the following questions by indicating TRUE (T) or FALSE (F) in the right-hand column. (3 points each)**

1. Malnutrition can be caused by eating too much as well as eating too little.	
2. Good nutrition can improve the effectiveness of medicines.	
3. Bilateral pitting oedema is a clinical sign of marasmus.	
4. Asymptomatic people living with HIV need to consume 15–30 percent more energy than HIV-negative people of the same weight, sex and activity level.	
5. Asymptomatic HIV-positive children with weight loss need to eat 20–30 percent more energy than HIV-negative children of the same age, weight, sex and activity level.	
6. According to WHO, people with HIV do not need more protein or micronutrients than people without HIV.	
7. People taking medicine, including ART, can manage medication-food interactions and side effects by changing their diets.	
8. Rapid weight loss—more than 5 percent of usual body weight over 2–3 months—is associated with opportunistic infections.	
9. People with nausea or vomiting should eat large, infrequent meals.	
10. Bilateral pitting oedema is a sign of severe acute malnutrition.	
11. Telling someone what to do is the surest way to change their behaviour.	
12. HIV-positive mothers should never breastfeed their babies.	
13. MUAC can be measured on any part of the arm.	
14. After washing your hands, you should dry them on a cloth.	

15. Feeding a baby other foods or liquids in addition to breast milk during the first 6 months of life decreases the risk of HIV transmission.	
--	--

**Write the answers to the following questions:**

16. Why is nutrition important for good health? (10 points)
---

17. How does HIV affect nutrition? (5 points)
---

18. What are four types of nutrition assessment? (5 points)
---

19. What anthropometric measurement should be used to assess the nutritional status of pregnant and postpartum women? (5 points)
--

20. What body mass index (BMI) indicates undernutrition and a high risk of illness? (5 points)
--

21. What is the weight-for-height z-score cutoff for severe acute malnutrition (SAM) in children under 5? (5 points)
--

22. Why are safe food and water especially important for people with HIV? (5 points)
--

23. List the Critical Nutrition Actions. (15 points)
--

## ANNEX 3. PRE- AND POST-TEST ANSWER KEY

<b>Answer the following questions by indicating TRUE (T) or FALSE (F) in the right-hand column. (3 points each)</b>	
1. Malnutrition can be caused by eating too much as well as eating too little.	T
2. Good nutrition can improve the effectiveness of medicines.	T
3. Bilateral pitting oedema is a clinical sign of kwashiorkor.	T
4. Asymptomatic people with HIV) need to consume 15–30 percent more energy than HIV-negative people of the same weight, sex and activity level.	F
5. Asymptomatic HIV-positive children with weight loss need to eat 20–30 percent more energy than HIV-negative children of the same age, weight, sex and activity level.	T
6. According to WHO, people with HIV do not need more protein or micronutrients than people without HIV.	T
7. People taking medicine, including ART, can manage medication-food interactions and side effects by changing their diets.	T
8. Rapid weight loss—more than 5 percent of usual body weight over 2–3 months—is associated with opportunistic infections.	T
9. People with nausea or vomiting should eat large, infrequent meals.	F
10. Bilateral pitting oedema is a sign of severe acute malnutrition.	T
11. Telling someone what to do is the surest way to change their behaviour.	F
12. HIV-positive mothers should never breastfeed their babies.	F
13. MUAC can be measured on any part of the arm.	F
14. After washing your hands, you should dry them on a cloth.	F
15. Feeding a baby other foods or liquids in addition to breast milk during the first 6 months of life decreases the risk of HIV transmission.	F

**Write the answers to the following questions:**

16. Why is good nutrition important for good health? (10 points)

Possible ANSWERS:

*It helps people feel strong and look healthy.*

*It strengthens the immune system.*

*It helps people stay productive.*

*It helps prevent wasting.*

*It improves medication adherence and effectiveness.*

17. How does HIV affect nutrition? (5 points)

*HIV increases energy needs but decreases appetite and nutrient absorption.*

18. What are four types of nutrition assessment? (5 points)

*Anthropometric, biochemical, clinical and dietary*

19. What anthropometric measurement should be used to assess the nutritional status of pregnant and postpartum women? (5 points)

*MUAC*

20. What body mass index (BMI) indicates undernutrition and a high risk of illness? (5 points)

*< 18.5 cm*

21. What is the weight-for-height z-score cutoff for severe acute malnutrition (SAM) in children under 5? (5 points)

*< -3*

22. Why is food and water safety especially important for people with HIV? (5 points)

*Their weak immune systems can't protect them against infection from contaminated food or water.*

23. List the Critical Nutrition Actions. (15 points)

- 1. Get weighed regularly and have weight recorded.*
- 2. Eat a variety of nutritious foods and increase energy intake.*
- 3. Maintain good hygiene and sanitation.*
- 4. Practice positive living.*
- 5. Get regular exercise.*
- 6. Drink plenty of boiled or treated water.*
- 7. Seek prompt treatment of infections and manage symptoms through diet.*
- 8. Manage medication-food interactions and medication side effects through diet.*

## ANNEX 4. Z-SCORES

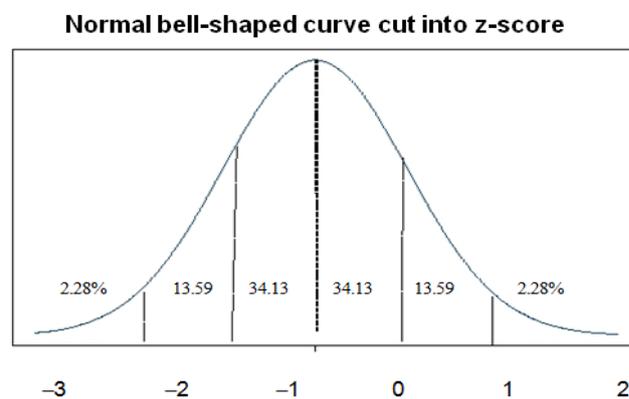
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### What does a Z-score tell us?

The reference lines on the growth charts are called z-scores. Z-scores, measured in standard deviations (SDs), are used to describe how far a measurement is from the median (or average). For example, a weight-for-height z-score (WHZ) of – 2.33 means that the child's weight is 2.33 SDs below the expected median weight of children of the same height. The child has a lower weight for her/his height than the average and is classified as moderately wasted.

### Normally distributed measurements

The concept of a normal distribution is helpful for understanding what a z-score is. In a normal distribution, most values are grouped around the middle, as shown below.



The distribution of heights of all boys (or all girls) of a given age forms a bell-shaped curve, or a normal (or almost normal) distribution. Each segment on the horizontal axis represents one SD, or z-score, and the z-scores –1 and 1 are at equal distances in opposite directions from the median. The distance from the median to 1 is half of the distance to 2. A positive z-score indicates that a child's weight is to the right of the median, i.e., the child is heavier than the average. A negative z-score indicates that the child's weight is to the left of the median, i.e., the child is less heavy than the average.

Z-scores are calculated differently for measurements that are distributed normally and non-normally in the reference population. The z-score of an observed point in this distribution is calculated as follows:

$$\text{z-score} = \frac{(\text{observed value}) - (\text{median reference value})}{\text{z-score of the reference population}}$$

## ANNEX 5. HEALTH FACILITY VISIT PLANNING GUIDE

1–4 weeks before	
Request and organise the visits with health centres or OVC or HBC programmes. If possible, send no more than six participants to each site.	<ul style="list-style-type: none"> <li>Write the health facility managers requesting permission for the visit; include a brief description of the training, participants, objectives, training agenda, proposed date and length of the visit.</li> <li>Contact as many staff as possible with whom the participants will interact.</li> </ul>
Send confirmation letters 1–4 weeks before the visits.	<ul style="list-style-type: none"> <li>Write confirmation letters reminding/informing the staff of the date of the visits, objectives, number of participants, departments they will visit, what they will observe and the length of the visits.</li> </ul>
Notify the sites of any changes in plans.	<ul style="list-style-type: none"> <li>Write a letter to notify the site if the date of the visit, number of participants or any other plan changes.</li> </ul>
Week of the visit	
Review the site visit guide.	<ul style="list-style-type: none"> <li>Go through the site visit guide with participants the day before the visit.</li> </ul>
Confirm the visits.	<ul style="list-style-type: none"> <li>Telephone or write to confirm the visit and number of participants.</li> </ul>
Select team leaders, prepare name tags and set a time for debriefing.	<ul style="list-style-type: none"> <li>Ensure that at least one trainer accompanies each group of participants. Groups may select a team leader.</li> <li>Ask participants to wear their name tags.</li> <li>Remind them of the return time.</li> </ul>
At the site	
Pay courtesy calls to the facility managers.	<ul style="list-style-type: none"> <li>Explain the purpose of the visit and introduce the participants.</li> </ul>
Brief the health care providers.	<ul style="list-style-type: none"> <li>Explain the purpose of the visit.</li> <li>Ask the health care providers to explain what they do.</li> <li>Ask participants to ask questions/make observations as prepared.</li> </ul>
Thank the facility managers and health care providers.	<ul style="list-style-type: none"> <li>Thank each provider at the end of each observation or discussion.</li> <li>Thank the managers at the end of the visits, if appropriate.</li> </ul>
Back in plenary	
Debrief (30 minutes).	<ul style="list-style-type: none"> <li>Ask participants to discuss challenges they saw in implementing NACS and options to address these challenges.</li> <li>Discuss nutrition services and activities the participants feel they could take back to their facilities.</li> </ul>

	<ul style="list-style-type: none"> <li>• Discuss what could be improved based on what participants have learned in the training.</li> </ul>
<b>1 week after the visit</b>	
Send thank-you notes.	<ul style="list-style-type: none"> <li>• Write to the facilities and specific staff, if appropriate, to thank them for their help with the visits.</li> </ul>





This training manual is made possible by the generous support of the American people through the support of USAID/Zambia and the Office of Health, Infectious Disease and Nutrition of the Bureau for Global Health, United States Agency for International Development (USAID), under terms of Cooperative Agreement No. AID-OAA-A-12-00005, through the Food and Nutrition Technical Assistance III Project (FANTA), managed by FHI 360. The contents are the responsibility of FHI 360 and do not necessarily reflect the views of USAID or the United States Government.

